

SCHEDULES

FOR

ONE-TIME IMPROVEMENT BETWEEN DULTE -CHAMPHAI ROAD (NH-06) FROM OLD EXISTING CHAINAGE KM 70+000 TO KM 92+165 & KM 106+000 TO KM 146+450 (SINGLE LANE) IN THE STATE OF MIZORAM

ENGINEERING, PROCUREMENT & CONSTRUCTION (EPC) MODE

**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
(MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVT. OF INDIA)**

July 2026

Schedule-A

(See Clauses 2.1 and 8.1)

Site of the Project

1 The Site

- (i) The site of One Time Improvement of bypassed road of old alignment of ***Dulte - Champhai Road (Nh-06) From Old Existing Chainage Km 70+000 To Km 92+165 & Km 106+000 To Km 146+450 (Single Lane) In The State Of Mizoram*** is as described in Annex-I of this Schedule-A.
- (ii) The dates of handing over the Right of Way to the Contractor are specified in Annex-II of this Schedule-A.
- (iii) 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 Contractor, and such inventory shall form part of the memorandum referred to in Clause 8.2. of this Agreement.
- (iv) The alignment plans of the Project Highway are specified in Annex-III. In the case of sections where no modification in the existing alignment of the Project Highway is contemplated, the alignment plan has not been provided. Alignment plans have only been given for sections where the existing alignment is proposed to be upgraded. The proposed profile of the Project Highways shall be followed by the contractor with minimum FRL as indicated in the alignment plan. The contractor, however, improve/upgrade the Road Profile as indicated in Annexure-III based on site/design requirement.
- (v) The status of the environment clearances obtained or awaited is given in Annex-IV.

Annex - I
(Schedule-A)

Site

1. Site

The Site of One Time Improvement of bypassed road of old alignment of **Dulte -Champhai Road (Nh-06) From Old Existing Chainage Km 70+000 To Km 92+165 & Km 106+000 to Km 146+450 (Single Lane) In The State Of Mizoram**. The land, carriageway and the structures comprising the project are described below.

2. Land.

The Site of the Project Highway comprises the land as described below:

Sl. No.	Chainage (Km)		Right of Way (m)	Remarks
	From (km)	To (km)		
1.	70.000	92.165	7.00	No Land Acquisition is necessary as the work will be done on the section of the existing NH-06, which is bypassed by the realignment.
2.	106.000	146.450	7.00	

3. Carriageway.

The present carriageway of the Project Highway is a single lane (3.75m) standard. The type of the existing pavement is Flexible.

4. Major Bridges.

Sl. No.	Chainage (Km)	Type of Structure			No. of Spans with span length (m)	Width(m)
		Foundation	Sub-Structure	Super Structure		
NIL						

5. Road over-bridges (ROB)/ Road under-bridges (RUB).

Sl. No.	Chainage (km)	Type of Structure		No. of Spans with Span length (m)	Width (m)	ROB/ RUB
		Foundation	Superstructure			
NIL						

6. Grade separators.

Sl. No.	Chainage (km)	Type of structure		No. of Spans with span length (m)	Width (m)
		Foundation	Superstructure		
NIL					

7. Minor bridges.

Sl. No.	Chainage (km)	Type of Structure			No. of Spans with span length (m)	Width (m)
		Foundation	Sub-Structure	Super-Structure		
NIL						

8. Railway level crossings.

Sl. No.	Location (km)	Remarks
NIL		

9. Underpasses (vehicular, non-vehicular).

Sl. No.	Chainage (km)	Type of Structure	No. of Spans with span length (m)	Width (m)
NIL				

10. Culverts.

The Site has the following Culverts:

Sl. No.	Chainage from the Starting Point (km)	Type of Culvert	Span /Opening with span length (m)	Width (m)
1	78+785	Culvert	1.50	7.00
2	84+470	Culvert	1.50	7.00
3	86+200	Culvert	1.50	7.00
4	88+750	Culvert	1.50	7.00
5	112+300	Culvert	1.50	7.00
6	124+100	Culvert	1.50	7.00
7	130+950	Culvert	1.50	7.00
8	137+000	Culvert	1.50	7.00

11. Bus bays.

The details of bus bays on the Site are as follows:

Sl. No.	Chainage (km)	Length (m)	Left Hand Side	Left Hand Side
NIL				

12. Truck Lay byes.

Sl. No.	Chainage (km)	Length (m)	Left Hand Side	Left Hand Side
NIL				

13. Road side Drains.

The details of the roadside drains are as follows:

Sl. No.	Location		Type	
	From km	to km	Masonry/cc (Pucca) (M)	Earthen (Kutcha)(m)
1.	70.000	92.165	0.00	2216.50
2.	106.000	146.450	0.00	4045.00

14. Major Junctions.

The details of major junctions are as follows:

Sl. No.	Location		At grade	Separated	Category of Cross Road			
	From km	To km			NH	SH	MDR	Others
NIL								

(NH: National Highway, SH: State Highway, MDR: Major District Road)

15. Minor junctions.

The details of Minor junctions are as follows:

Sl. No.	Location		Type	
	From km	To km	T/Y -junction	Cross road
NIL				

16. Bypasses.

The details of the existing road sections proposed to be bypassed are as follows:

Sl. No.	Name of bypass (town)	Chainage (km) From ----to	Length (in Km)	Carriageway	
				Width (m)	Type
NIL					

17. Other structures:

(i) Retaining wall -

Sl. No.	Chainage from the Starting Point (km)	Type of R/wall	Length (m)	Height (m)
1	139+860	CRM/Gabion Wall	40.00	3.00

(ii) Cantilever Retaining wall -

Sl. No.	Chainage from the Starting Point (km)	Type of R/wall	Length (m)	Height (m)
NIL				

(iii) Breast wall -

Sl. No.	Chainage from the Starting Point (km)	Type of B/wall	Length (m)	Height (m)
NIL				

Annex - II

(As per Clause 8.3(i))
(Schedule-A)

Dates for providing Right of Way of Construction Zone

The dates on which the Authority shall provide Right of Way of Construction Zone to the Contractor on different stretches of the site are stated below:

Sl. No.	From km to km	Length (km)	Width (m)	Date of providing ROW*
(i) Full Right of Way (full width) (a) Stretch	70.000 to 92.165 106.000 to 146.450	22.165 40.450	7.00	The work will be done on the existing road where Land Acquisition was already done. Hence, ROW will be provided within 10 days of the date of Agreement as per Clause 8.2(i).
(ii) Part Right of Way (part width) (a) Stretch (b) Stretch (c) Stretch	-	-	-	-
(iii) Balance right of Way (width) a) Stretch b) Stretch c) Stretch	-	-	-	.

*The dates specified herein shall in no case be beyond 150 (one hundred and fifty) days after the Appointed Date.

Annex - III
(Schedule-A)

Alignment Plans

All works are to be executed within the existing alignment

The existing alignment of the Project Highway shall be modified in the following sections as per the alignment plan indicated below:

- (i) The alignment of the Project Highway is enclosed in alignment plan. Finished road level indicated in the alignment plan shall be followed by the contractor as minimum FRL. In any case, the finished road level of the project highway shall not be less than those indicated in the alignment plan. The contractor shall, however, improve/upgrade the Road profile as indicated in Annex-III based on site/design requirement.
- (ii) Traffic Signage plan of the Project Highway showing numbers & location of traffic signs is enclosed. The contractor shall, however, improve/upgrade upon the traffic signage plan as indicated in Annex-III based on site/design requirement as per the relevant specifications/IRC Codes/Manual.

Annex - IV
(Schedule-A)
Environment Clearances

The Project is to be carried out on the existing bypassed road of old alignment of Dulte -Champhai Road (Nh-06) From Old Existing Chainage Km 70+000 To Km 92+165 & Km 106+000 To Km 146+450 (Single Lane) In The State Of Mizoram; therefore, Environment Clearance is not required.

SCHEDULE - B
(See Clause 2.1)
Development of the Project Highway

1. Development of the Project Highway.

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

2. Rehabilitation and augmentation.

Rehabilitation and augmentation shall include One-time Improvement of the bypassed road of old alignment of existing Pavement of the Project Highway as described in Annex-I of Schedule-B and Schedule-C.

3. Specifications and Standards

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

Annex - I
(Schedule-B)

Description

Name of work: One Time Improvement of bypassed road of old alignment of Dulte -Champhai Road (NH-06) From Old Existing Chainage Km 70+000 To Km 92+165 & Km 106+000 To Km 146+450 (Single Lane) in the State of Mizoram.

1. ONE-TIME IMPROVEMENT

(i) PAVEMENT COMPOSITION

The scope of work includes the following:

Maintenance of the Earthen Shoulder.
Hill Side drain clearance where the drain is being choked with mud and debris.
Landslide Clearance in Soil/ Hard Rock.
Filling of potholes with WBM material where the depression is above 200mm.
Hume Pipe Culvert is proposed at 8(Eight) locations, to provide better drainage along the road.
Bituminous Concrete of 30 mm thickness on 61.55 Km length.

The provisions as mentioned here are the minimum requirement. However, if during construction the Contractor wish to increase the provisions, the same may be done without any additional financial implication.

(ii) WIDTH OF CARRIAGEWAY.

- a) The width of the carriageway is 3.75m
- b) Except as otherwise provided in this Agreement, the width of the carriageway, the pavement composition, cross-sectional features shall conform to paragraph 1(i) & 1(ii) above.

2. GEOMETRIC DESIGN AND GENERAL FEATURES.

a. General

Existing alignment will be followed for the entire stretch.

b. Design speed.

- c. The design speed shall be as per IRC: SP: 48-2023, IRC: SP: 73-2018.

d. Improvement of the existing road geometrics.

Sl. No.	Stretch (from km to km)	Type of deficiency	Remarks
NIL			

e. Right of Way

Details of the Right of Way are given in Annex-II of Schedule-A.

f. Type of shoulders

- (a) Earthen shoulder having a minimum width of 1.0 m width on each side of carriageway with minimum thickness of 40 mm for flexible pavement & earthen shoulder having a minimum width of 1.0 m width on each side of carriageway with minimum thickness of 250 mm for rigid pavement are included in the estimate.

Sl. No.	Stretch (from km to km)	Fully paved shoulders/ Footpaths/Earthen	Reference to cross section
1 2	70.000 to 92.165 106.000 to 146.450	Earthen shoulder	As per the typical section of pavement and scope of work mentioned in 1(i) (j) Annex-I of schedule-B.

g. Lateral and vertical clearances at underpasses.

Sl. No.	Location(Chainage) (from km to km)	Span/opening (m)	Remarks
NIL			

h. Lateral and vertical clearances at overpasses.

Sl. No.	Location (Chainage) (from km to km)	Span/opening (m)	Remarks
NIL			

i. Service roads.

Sl. No.	Location (Chainage) (from km to km)	Span/opening (m)	Remarks
NIL			

j. Grade separated Structures

Sl. No.	Location of structure	Length (m)	Number and length of spans (m)	Approach gradient	Remarks, if any
NIL					

k. **Cattle and pedestrian underpass/overpass.**

Sl. No.	Location	Type of crossing
NIL		

l. **Typical cross-sections of the Project Highway :- Nil**

3. INTERSECTIONS AND GRADE SEPARATORS.

(i) **At-grade intersections**

Sl No	Location of Intersection	Type of Intersection	Other features
NIL			

(ii) **Grade separated intersection with/without ramps**

Sl. No.	Location	Salient features	Minimum length of viaduct to be provided	Road to be carried over/under the structures
NIL				

4. ROAD EMBANKMENT AND CUT SECTION.

Widening and improvement of the existing road embankment/cuttings and construction of new road embankment/ cuttings shall conform to the Specifications and Standards given in Section 7 of the Manual and the specified cross sectional details. Deficiencies in the plan and profile of the existing road shall be corrected.

Sl. No.	Section (from km to km)	Length (in Km)	Extent of raising [Top of finished road level]
NIL			

5. PAVEMENT DESIGN.

The scope of work includes the following:

- (a) Maintenance of the Earthen Shoulder.
- (b) Hill Side drain clearance where the drain is being choked with mud and debris.
- (c) Landslide Clearance in Soil/ Hard Rock.
- (d) Filling of potholes with WBM material where the depression is above 200mm.
- (e) Hume Pipe Culvert is proposed at 8(Eight) locations, to provide better drainage along the road.
- (f) Bituminous Concrete of 30 mm thickness on 61.55 Km length.

The provisions as mentioned here are the minimum requirement. However, if during construction the Contractor wish to increase the provisions, the same may be done without any additional financial implication.

(i) Type of pavement:

The type of pavement shall be flexible except rigid pavement between km 27.500 to km 35.400 for a length of 22m and flexible pavement for the remaining stretches.

(ii) Design requirements.

As per IRC: SP: 37-2018 & IRC SP: 48-2023 for Flexible Pavement.

As per IRC: 58-2015 for Rigid Pavement.

The pavement crust shall consist of layers as mentioned in the following table. The provision as mentioned in the table is the minimum requirement. However, if during construction the Contractor wish to increase the provisions, the same may be done without any additional financial implication.

Particulars	Minimum thickness (in mm)	Chainage (in km)	Total length (in m)
WBM	200	70.000 to 92.165 106.000 to 146.450	At selected locations (as per Annex-II of Schedule-B)
BC	40	70.000 to 92.165 106.000 to 146.450	Over entire Carriageway area

(iv) Reconstruction/ Strengthening of stretches

The following stretches of the existing road shall be reconstructed/ strengthened. These shall be designed as new pavement. The stretches where existing road required reconstruction/ strengthening is given below:

Sl. No.	Stretch From km to km	Remarks
	Reconstruction of pavement between km 70.000 to 92.165 & 106.000 to 146.450 for a length of 62615.00m by providing 200mm thick WBM (Filling Pot-holes), tack coat and 40mm thick BC.	

6. ROAD-SIDE DRAINAGE.

The work includes Hill side drain clearance for a minimum length of 62615 m.

7. DESIGN OF STRUCTURES

- (i) General
- (a) All bridges, culverts and structures shall be designed and constructed in accordance with the provision of relevant Manual and shall conform to the cross-sectional features and other details specified therein.
- (b) Width of the carriageway of new bridges and structures shall be as follows:

Sl. No.	Bridge at km	Width of carriageway and cross-sectional features
NIL		

- c) The following structures shall be provided with footpaths.

Sl. No.	Location at km	Remarks
NIL		

- (d) All Bridges shall be high-level bridges.
- (e) The following structures shall be designed to carry utility services specified in the table below:

Sl. No.	Bridge at km	Utility service to be carried	Remarks
NIL			

- (f) Cross-section of the new culverts and bridges at deck level for the projects highway shall conform to the typical cross sections given in the provision of relevant Manual.

(ii) Culverts.

- (a) Overall width of all culverts shall be equal to the roadway width of the approaches
- (b) Reconstruction of existing culverts:

Sl. No.	Culvert location (km)	Span/Opening (m)	Remarks, if any*
Bituminous layers shall be provided			

- (c) Widening/Extension of existing culverts.

Sl. No.	Culvert location	Type, span, height and width of existing Culvert(m)	Repairs to be carried out [specify]
NIL			

- (d) Additional new RCC Box culverts shall be constructed as per particulars given in the table below:

Sl. No.	Culvert location (km)	Span/Opening (m)	Remarks, if any*
NIL			

- (e) Repair/replacement of railing/parapets, flooring and protection works of the existing culverts shall be undertaken as follows:-

Sl. No.	Location at km	Type of repair required
1	78+785	Laying RCC Pipe NP3 of minimum length of 5.00 m and reconstruction of wing wall
	84+470	
	86+200	
	88+750	
	112+300	
	124+100	
	130+950	
	137+000	

- (f) Floor protection works shall be as specified in the relevant IRC codes and Specifications.

(iii) Bridges

- (a) Existing bridges to be re-constructed/widened

- (i) Existing bridges to be re-constructed/widened

Sl. No.	Bridge location (km)	Salient details of existing bridge	Adequacy or otherwise of the existing waterway, Vertical clearance, etc*	Remarks
NIL				

- (ii) The following narrow bridges shall be widened:

Sl. No.	Location (km)	Existing width (m)	Extent of widening (m)	Cross-section at deck level for widening @
NIL				

- (b) Additional new bridges

Sl. No.	Location (km)	Total length (m)	Remarks, if any
1	NIL		

- (c) The railings of existing bridges shall be replaced by crash barriers at the following locations:

Sl. No.	Location at km	Remarks
NIL		

- (d) Repairs/replacements of railing/parapets of the existing bridges shall be undertaken as follows.

Sl. No.	Location at km	Remarks
NIL		

- (e) Drainage system for bridge decks

An effective drainage system for bridge decks shall be provided as specified in the provision of relevant manuals.

- (f) Structures in marine environment.

NIL

- (iv) Rail-road bridges

- (a) Design, construction and detailing of ROB/RUB shall be as specified in the provision of relevant Manual. [Refer to the provision of relevant Manual and specify modifications, if any] -NIL

- (b) Road over-bridges

Sl. No.		Location of Level crossing (chainage km)	Length of bridge (m)
NIL			

- (c) Road under-bridges

Sl. No.	Location of Level crossing (chainage km)	Number and length of span (m)
NIL		

- (v) Grade separated structures

Sl. No.	Location
NIL	

- (vi) Repairs and strengthening of bridges and structures.

- (a) Bridges.

Sl. No.	Location of bridge (km)	Nature and extent of repairs /strengthening to be carried out
NIL		

- (b) ROB/RUB.

Sl. No.	Location of ROB/RUB (km)	Nature and extent of repairs /strengthening to be carried out
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NIL

(c) Overpasses/Underpasses and other structures.

Sl. No.	Location of Structure (km)	Nature and extent of repairs /strengthening to be carried out
NIL		

(vii) List of Major Bridges and Structures.

Sl. No.	Location
NIL	

8. TRAFFIC CONTROL DEVICES AND ROAD SAFETY WORKS.

(i) Traffic control devices and road safety works shall be provided in accordance with the IRC: 67: 2022 - Code of practice for road signs.

(ii) Road marking has to be provided as per latest IRC: 35: 2015

Sl. No.	Particulars	Location
1	Nil	

9. ROADSIDE FURNITURE.

(i) Road delineators

Sl. No.	Particulars of Item	Minimum Quantities	Location
Nil			

(ii) Overhead traffic signs: location and size.

Sl.No.	Particulars	Location
NIL		

10. COMPULSORY AFFORESTATION.

Sl.No.	Location
NIL	

11. HAZARDOUS LOCATIONS.

The RCC crash barriers shall be provided as per IRC: 119-2015:- Guidelines for Traffic Safety Barriers at the following locations:

Sl. No.	Location stretch from (km) to (km)	LHS/RHS
NIL		

12. SPECIAL REQUIREMENT FOR HILL ROADS

(a) Retaining walls

i) Reconstruction of existing Retaining walls:

Sl. No.	Location (km)	Length/Height (m)	Remarks, if any*
NIL			

ii) Additional new Retaining walls shall be constructed as per particulars given in the table:-

Sl. No.	Location (km)	Length (m)	Height (m)	Remarks, if any*

iii) New Gabion walls shall be constructed as per particulars given in the table:-

Sl. No.	Location (km)	Length (m)	Height (m)	Remarks, if any*
1	139+860	40.00	3.00	Valley side

13. CHANGE OF SCOPE

The length of structures specified hereinabove shall be treated as an approximate assessment. The actual lengths as required on the basis of detailed investigations shall be determined by the contractor in accordance with the Specifications and Standards. Any variations in the lengths specified in this Schedule-B shall not constitute a Change of Scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.

Annex - II
(Schedule-B)

MEASUREMENT OF POTHoles AND DAMAGE PAVEMENT PORTION ON OLD NH-44A

Chainage	Length	Breadth	Area (in m ²)
1	2	3	4
80+280	20	3.75	75.00
80+340	25	3.75	93.75
80+480	20	3.75	75.00
80+970	30	3.75	112.50
81+070	50	3.75	187.50
81+170	30	3.75	112.50
81+320	70	3.75	262.50
81+590	10	2	20.00
82+290	30	3.75	112.50
82+490	10	2	20.00
82+570	30	3.75	112.50
82+770	30	3.75	112.50
83+080	20	3.75	75.00
83+280	20	3.75	75.00
83+400	100	3.75	375.00
83+600	100	3.75	375.00
83+770	130	3.75	487.50
83+950	50	3.75	187.50
84+000	95	3.75	356.25
84+150	50	3.75	187.50
84+300	95	3.75	356.25
84+450	50	3.75	187.50
84+550	50	3.75	187.50
84+950	50	3.75	187.50
85+080	80	3.75	300.00
85+220	30	3.75	112.50
85+300	100	3.75	375.00
85+450	50	3.75	187.50
85+750	90	3.75	337.50
86+150	160	3.75	600.00
86+650	250	3.75	937.50
87+670	30	3.75	112.50
87+750	100	3.75	375.00
87+870	90	3.75	337.50
88+050	50	3.75	187.50
88+400	100	3.75	375.00
88+600	350	3.75	1312.50
89+000	230	3.75	862.50
89+250	200	3.75	750.00
89+500	200	3.75	750.00
89+730	20	3.75	75.00
89+850	100	3.75	375.00
90+510	50	3.75	187.50
90+560	210	3.75	787.50
90+970	50	3.75	187.50
91+030	70	3.75	262.50

91+460	40	3.75	150.00
91+595	55	3.75	206.25
91+897	3	2	6.00
92+188	12	3.75	45.00
106+000	260	3.75	975.00
106+300	2	2	4.00
106+320	2	2	4.00
106+350	450	3.75	1687.50
106+900	2	2	4.00
107+000	80	3.75	300.00
107+150	50	3.75	187.50
107+320	5	2	10.00
107+830	5	2	10.00
107+850	2	2	4.00
108+100	2	3	6.00
108+200	2	1.5	3.00
108+450	60	3.75	225.00
108+510	2	2	4.00
108+600	45	3.75	168.75
108+800	50	3.75	187.50
109+100	20	3.75	75.00
109+480	2	2	4.00
109+710	55	3.75	206.25
109+850	100	3.75	375.00
111+000	65	3.75	243.75
111+301	30	3.75	112.50
111+340	25	3.75	93.75
111+400	70	3.75	262.50
111+820	102	3.75	382.50
112+200	150	3.75	562.50
112+400	40	3.75	150.00
112+550	2	2	4.00
112+600	2	2	4.00
112+620	2	2	4.00
113+500	10	3.75	37.50
113+700	30	3.75	112.50
114+000	10	3.75	37.50
114+100	20	3.75	75.00
114+200	20	2	40.00
114+300	1.5	1.5	2.25
114+350	50	3.75	187.50
115+100	15	3.75	56.25
115+120	30	3.75	112.50
115+225	20	3.75	75.00
115+650	52	3.75	195.00
115+800	35	3.75	131.25
115+850	14	2	28.00
115+900	60	3.75	225.00
116+700	30	3.75	112.50
117+000	2	2	4.00
117+200	1.5	1.5	2.25
117+300	400	3.75	1500.00
117+900	130	3.75	487.50
118+100	120	3.75	450.00
118+300	4	2	8.00

118+500	80	3.75	300.00
118+600	40	3.75	150.00
119+100	5	1.5	7.50
120+100	65	3.75	243.75
120+600	40	3.75	150.00
122+700	2	2	4.00
123+200	45	3.75	168.75
123+600	30	3.75	112.50
123+700	40	3.75	150.00
123+710	70	3.75	262.50
123+900	58	3.75	217.50
124+700	8	1	8.00
125+700	2	2	4.00
125+800	3	1.5	4.50
125+940	110	3.75	412.50
126+500	8	2	16.00
128+800	250	3.75	937.50
129+600	50	3.75	187.50
130+000	4	1	4.00
130+300	100	3.75	375.00
130+900	100	3.75	375.00
131+500	2	4	8.00
132+600	4	2	8.00
133+200	5	2	10.00
134+400	2	2	4.00
134+600	50	3.75	187.50
134+800	20	3.75	75.00
135+100	20	3.75	75.00
135+300	6	1.5	9.00
135+400	60	3.75	225.00
137+000	15	3.75	56.25
137+300	6	1	6.00
138+020	180	3.75	675.00
138+400	400	3.75	1500.00
139+100	200	3.75	750.00
139+600	12	2	24.00
139+800	100	3.75	375.00
140+200	50	3.75	187.50
140+300	2	6	12.00
140+300	6	2	12.00
140+500	40	3.75	150.00
140+900	60	3.75	225.00
141+100	30	3.75	112.50
141+300	8	2	16.00
143+800	60	3.75	225.00

Total: 33686.25

(ScheduleB-1)

1. The shifting of utilities and felling of trees shall be carried out by the Contractor. The cost of the same shall be borne by the Authority. The details of utilities are as follows:

Sr.		Type of Utility	Unit	Quantity	Location/stretch (LHS/RHS)
A		Electrical Utilities		Nil	
A1		Electrical Poles	Nos.	Nil	
A2		Electrical cables	meters	Nil	
A3		Transformers	Nos.	Nil	
-		-----	--	Nil	
-		-----	--	Nil	
B		Water/Sewage pipeline		Nil	
B1		Sewage	meters	Nil	
B2		Water supply	meters	Nil	
-		-----	--	Nil	
-		-----	--	Nil	
C		Felling of Tress	Nos.	Nil	

Annexure-1 to Schedule-B 1
Utility Shifting (Circular MoRT&H 11.02.2021)

Shifting of obstructing existing utilities indicated in Schedule A to an appropriate location in accordance with the standards and specifications of concerned Utility Owning Department is part of the scope of work of the Contractor / Concessionaire*. The bidders may visit the site and assess the quantum of shifting of utilities for the projects before submission of their bid. Copy of utility relocation plan is enclosed. The specifications of the concerned Utility Owning Department shall be applicable and followed.

Notes: -

(a) The type/ spacing/ size/ specifications of poles/ towers/ lines/ cables to be used in shifting work shall be as per the guidelines of utility owning department and it is to be agreed solely between the Contractor /Concessionaire* and the utility owning department. No change of scope shall be admissible and no cost shall be paid for using different type/ spacing / size/ specifications in shifted work in comparison to those in the existing work or for making any overhead crossings to underground as per requirement of utility owning department and/or construction of project highway. The Contractor/Concessionaire* shall carry out joint inspection with the utility owning department and get the estimates from the utility owning department. The assistance of the Authority is limited to giving forwarding letter on the proposal of Contractor/Concessionaire* to utility owning department whenever asked by the Contractor/Concessionaire*. The decision/ approval of utility owning department shall be binding on the Contractor/Concessionaire*.

(b) The supervision charges at the rates/ charges applicable of the utility owning department shall be paid directly by the Authority to the Utility Owning department as and when Contractor/Concessionaire* furnishes demand of the Utility Owning Department along with a copy of estimated cost given by the latter.

(c) The dismantled material/scrap of existing Utility to be shifted/ dismantled shall belong to the Contractor/ Concessionaire* who would be free to dispose-off the dismantled material as deemed fit by them unless the Contractor/Concessionaire* is required to deposit the dismantled material to utility owning department as per the norm and practice and in that case the amount of credit for dismantled material may be availed by the Contractor/Concessionaire* as per estimate agreed between them.

(d) The utilities shall be handed over after shifting work is completed to the Utility Owning Department to their entire satisfaction. The maintenance liability shall rest with the Utility Owning Department after the handing over process is complete as far as utility shifting works are concerned.

All other small works involved in shifting/crossing of lines is included in the Concessionaire scope and doesn't qualify for change in scope.

Note -II Copy of utility shifting plans enclosed as Annexure-II to Schedule B1.

*Strike out which is not applicable

SCHEDULE - C
(See Clause 2.1)

PROJECT FACILITIES

1 Project Facilities.

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

- (a) toll plaza[s].
- (b) roadside furniture.
- (c) pedestrian facilities.
- (d) tree plantation.
- (e) truck lay-byes.
- (f) bus-bays and bus shelters.
- (g) rest areas;
- (h) traverse bar markings may be provided at identified accident prone spots and at junction where the need for alerting drivers/ reduction in speed desired as per ministry Circular letter No. RW/NH/33044/13/2012-S&R(R) Dated 04.05.2013; and
- (i) others to be specified

2 Description of Project Facilities.

S. No.	Project Facility	Location	Design Requirements	Other essential details
NIL				

Note: Provide adequate details of each Project facility to ensure their design and completion in accordance with the project-specific requirements and the provisions of the manual.

SCHEDULE - D
(See Clause 2.1)
SPECIFICATIONS AND STANDARDS

1. Construction

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

2. Design Standards.

The Project highway including project facilities shall conform to design requirements set out in the following documents:

- 2.1. IRC: 82-2015, Code of practice for maintenance for bituminous road surfaces, referred to herein as the '**Manual**'.
- 2.2. MORTH Specification for road and bridge works (5th Revision)
- 2.3. IRC: 37-2018:- Design of Flexible Pavements
- 2.4. IRC: 58-2015:- Guidelines for Design of Plain Jointed Rigid Pavements for Highways.
- 2.5. IRC: SP:49-2014:- Guidelines for the use of dry lean concrete as sub-base for Rigid Pavement.
- 2.6. IRC: SP:68-2005:- Guidelines for construction of roller compacted concrete pavement.
- 2.7. IRC: SP:83-2018:- Guidelines for maintenance, repair and rehabilitation of cement concrete pavement.
- 2.8. IRC: SP:42-2014:- Guidelines on Road Drainage
- 2.9. IRC: SP:13-2022:- Guidelines for the design of Small Bridges and Culverts
- 2.10. IRC:52-2019: - Guidelines for the alignment Survey and geometric Design of Hill Roads
- 2.11. IRC:67-2012:- Code of Practice for Road Signs (Third Revision)
- 2.12. IRC SP:73-2018:- Manual for specifications and Standards for Two-Laning Highways with Paved Shoulder
- 2.13. IRC:79-2019: - Recommended Practice for Road Delineators (First Revision)
- 2.14. IRC: SP:112-2017:- Manual for Quality Control in Road and Bridge works
- 2.15. IRC: 35-2015:- Code of practice for road markings.
- 2.16. As regards to the work of utility shifting, the relevant specification, relevant rules, regulations and acts of utility owning department /agencies shall be applicable.

Sr.No.	Policy Circular No.	Dated	Subject
1	Efile No. RW/NH-33044/55/2021-S&R (P&B) pt. /Hill Slope Monitoring (Computer No.219394)	28 th November 2024	Expert Committee Report on Cost Effective Long-term Remedial Measures for Landslide Prone Areas in Hilly Regions.
2	Efile No. RW/NH-33044/27/2024/S&R (P&B) (Computer No. 243038)	23 rd September 2024	Policy Guidelines on use of Inert Material in construction of National Highways.
3	Efile No. RW/NH-34066/09/2017/S&R(B) (Computer No. 185417)	12 th February 2021	Reinforcing Steel Bars (Clause 1000.9.3.1 of Ministry's Specifications for Road and Bridge Works).
4	Efile No. RW/NH-34066/09/2017/S&R(B) (Computer No. 185417)	22 nd January 2021	Use of Stainless steel Reinforcing Steel Bars in Bridges on National Highways and other centrally sponsored projects to construct in marine Environment Susceptible to

			Severe Corrosion.
5	EFile No.RW/NH-34049/01/2020-SER (P&B) pt. (Computer No.-207229)	20 th September 2024	Use of New/ Alternative Material and Technology in Construction and Maintenance of National Highways Projects and adoption of Value Engineering Practices therein.
6	Efile No. RW/NH-35083/02/2024-S&R (Computer No. 238879)	26 th November 2024	Use of Waste Plastic in Bituminous Concrete Wearing Course Mix in National Highways Construction & Maintenance Works.
7	E-File No.RW/NH-33044/22/2020-S&R (P&B) (Computer No. 186381)	4 th June 2024	Width of Shoulder (Paved & Earthen) for National Highways".
8	E-File No.RW/NH-35072/05/2018-S&R (P&B) (Computer No. 165688)	19 th April 2024	Recommended Bitumen Type & Grade for Different Climate & Traffic Loading for National Highway and Expressway Works in India.
9	E-File No.RW/NH-35072/05/2018-S&R (P&B) (E165688)	23 rd August 2023	Use of Bitumen: Demand-Supply, Type & Grade, Specifications, Source of Procurement and Quality in Construction Highways Projects. of National
10	EFile No.RW/NH-36098/25/2022-SER (P&B)/pt.	16 th March 2023	Safety in Road Construction Zones in National Highway Projects effective and adequate measures to be taken.
11	EFile 33044/10/2021-No: RW/NH-S&R(P&B) (171909)	15 th March 2023	Reuse of materials reclaimed from existing pavement layers.
12	RW/NH-12 Efile No. 36098/17/2022/S&R(B)	2 nd January 2023	Provisions of crash barriers in existing bridges.
13	EFile No.RW/NH-33049/01/2020-S&R (B) PL.	22 nd February 2022	Use of Ultra High Performance Fiber Reinforced Concrete (UHPFRC) in Design & Construction of Structures/Bridges of National Highways.
14	Efile No. RW/NH-33044/04/2022-S&R(P&B)	15 th February 2022	Use of dynamite on hills mountains for the construction of roads.

(Schedule-D)

Specifications and Standards for Construction

1. Specifications and Standards.

- 2.17. All Materials, works and construction operations shall conform to the MORTH Specification for road and bridge works (5th Revision), Manual of Specifications and Standards for Two-Laning of Highways with Paved Shoulder (IRC:SP:73:2018), IRC:SP:48-2023 Hill Road Manual, IRC: 58-2015:- Guidelines for Design of Plain Jointed Rigid Pavements for Highways, IRC: SP:83-2018:- Guidelines for maintenance, repair and rehabilitation of cement concrete pavement and MORTH Specifications for Road and Bridge Works. Where the specification for a work is not given, Good Industry Practice shall be adopted to the satisfaction of the Authority's Engineer. The work is to be carried out in accordance with Manual for Quality Control in Road and Bridge Works-IRC SP:112-2017, MORTH specifications (5th Revision) and observing strict quality control instructions contained in the Ministry letter No.RW/NH-34066/01/2020-QCZ dated 01.10.2020.

2. Deviations from the Specifications and Standards.

- i. The terms "Concessionaire", "Independent Engineer" and "Concession Agreement" used in the Manual shall be deemed to be substituted by the terms "Contractor", "Authority's Engineer" and "Agreement" respectively.
- ii. This is one time improvement of pavement of existing Single Lane standard road, no widening or geometric improvement has been contemplated.

SCHEDULE - E
(See Clauses 2.1 and 14.2)

MAINTENANCE REQUIREMENTS

1. Maintenance Requirements.

- i) The Contractor shall, at all times maintain the Project Highway in accordance with the provisions of this Agreement, Applicable Laws and Applicable Permits.
- ii) The Contractor shall repair or rectify any Defect or deficiency set forth in Paragraph 2 of this Schedule-E within the time limit specified therein and any failure in this behalf shall constitute non-fulfilment of the Maintenance obligations by the Contractor. Upon occurrence of any breach hereunder, the Authority shall be entitled to effect reduction in monthly lump sum payments set forth in Clause 14.6 of this Agreement, without prejudice to the rights of the Authority under this Agreement, including Termination thereof.
- iii) All Materials, works and construction operations shall conform MORTH Specifications For Road And Bridge Works (5th Revision), IRC:SP:48:2023 - Hill Roads Manual, IRC:37-2018 - Guidelines for the Design of Flexible Pavements, MoRTH Manual For Construction And Supervision Of Bituminous Works, IRC: 58-2015:- Guidelines for Design of Plain Jointed Rigid Pavements for Highways, IRC: SP:83-2018:- Guidelines for maintenance, repair and rehabilitation of cement concrete pavement and other relevant IRC publications. Where the specifications for a work are not given, Good Industry Practice shall be adopted.

2. Repair/rectification of Defects and deficiencies.

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

3. Other Defects and deficiencies.

In respect of any defect or deficiency not specified in Annex - I of this Schedule-E, the Authority's Engineer 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 Contractor within the time limit specified by the Authority's Engineer.

4. Extension of time limit.

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

5. Emergency repairs/restoration.

Notwithstanding anything to the contrary contained in this Schedule-E, if any Defect, deficiency or deterioration in the Project Highway poses a hazard to safety or risk of damage to property, the Contractor shall promptly take all reasonable measures for eliminating or minimizing such danger.

6. Daily inspection by the Contractor.

The Contractor 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 Authority's Engineer may specify. Such record shall be kept in safe custody of the Contractor and shall be open to inspection by the Authority and the Authority's Engineer at any time during office hours.

7. Pre-monsoon inspection/Post-monsoon inspection.

The Contractor shall carry out a detailed pre-monsoon inspection of all bridges, culverts and drainage system before [1st June] every year in accordance with the guidelines contained in IRC: SP35. Report of this inspection together with details of proposed maintenance works as required on the basis of this inspection shall be sent to the Authority's Engineer before the [10th June] every year. The Contractor shall complete the required repairs before the onset of the monsoon and send to the Authority's Engineer a compliance report. Post monsoon inspection shall be done by the [30thSeptember] and the inspection report together with details of any damage so observed and proposed action to remedy the same shall be sent to the Authority's Engineer.

8. Repairs on account of natural calamities.

All damages occurring to the Project Highway on account of a Force Majeure Event or default or neglect of the Authority shall be undertaken by the Authority at its own cost. The Authority may instruct the Contractor to undertake the repairs at the rates agreed between the Parties.

Annex- I

(Schedule-E)

Repair/rectification of Defects and deficiencies

The Contractor shall repair and rectify the Defects and deficiencies specified in this Annex-I of Schedule-E within the time limit set forth in the table below.

Table-1: Maintenance Criteria for Pavements:

Asset Type	Performance Parameter	Level of Service (LOS)		Frequency of Inspection	Tools/ Equipment	Standards References Inspection and Analysis and for Data	Time limit for Rectification / Repair	Maintenance Specifications
		Desirable	Acceptable					
Flexible Pavement (Pavement of MCW, Service Road, approach)	Potholes	Nil	< 0.1 % of area and subject to limit of 10 mm in depth	Daily	Length Measurement Unit like Scale, Tape, odometer etc.	IRC 82: 2015 and Distress Identification Manual for Long Term Pavement Performance Program, FHWA 2003 (http://www.tfhrcc.com/pavement/ltp/reports/03031/)	24-48hours	MORT&H Specification 3004.2

Asset Types	Performance Parameter	Level of Service (LOS)		Frequency of Inspection	Tools/Equipment	Standards References Inspection Analysis and for Data	Time limit for Rectification / Repair	Maintenance Specifications
		Desirable	Acceptable					
of Grade Structure, approaches of connecting roads, slip roads, lay byes etc. as applicable)	Cracking	Nil	< 5 % subject to limit of 0.5 sqm for any 50 m length	Daily			7-15 days	MORT&H Specification 3004.3
	Rutting	Nil	< 5 mm	Daily	Straight Edge		15 -30 days	MORT&H Specification 3004.2
	Corrugations and Shoving	Nil	< 0.1 % of area	Daily	Length Measurement Unit like		2-7 days	IRC:82-2015

Asset Type	Performance Parameter	Level of Service (LOS)		Frequency of Inspection	Tools/Equipment	Standards References Inspection and Analysis and for Data	Time limit for Rectification/Repair	Maintenance Specifications
		Desirable	Acceptable					
	Bleeding	Nil	< 1 % of area	Daily	Scale, Tape, odometer etc.		3-7 days	MORT&H Specification 3004.4
	Ravelling / Stripping	Nil	< 1 % of area	Daily			7-15 days	IRC:82-2015 read with IRC SP 81
	Edge Deformation/ Breaking	Nil	< 1 m for any 100 m section and width < 0.1 m at any location, restricted to 30cm from the edge	Daily			7-15 days	IRC:82-2015

Asset Type	Performance Parameter	Level of Service (LOS)		Frequency of Inspection	Tools/Equipment	Standards and References for Inspection and Data Analysis	Time limit for Rectification / Repair	Maintenance Specifications
		Desirable	Acceptable					
	Roughness BI	2000 mm/km	2400 mm/km	Bi-Annually	Class I Profilometer SCRIM	Class I Profilometer : ASTM E950 (98) :2004-Standard Test Method for measuring Longitudinal Profile of Travelled Surfaces with Accelerometer Established Inertial Profiling Reference ASTM E1656 -94: 2000-Standard Guide for Classification of Automatic Pavement Condition Survey Equipment	180 days	IRC:82-2015
	Skid Number	60SN	50SN	Bi-Annually	(Sideway-force Coefficient Routine Investigation Machine or equivalent)		180 days	BS: 7941-1: 2006
	Pavement Condition Index	3	2.1	Bi-Annually			180 days	IRC:82-2015

Asset Type	Performance Parameter	Level of Service (LOS)		Frequency of Inspection	Tools/Equipment	Standards and References for Inspection and Data Analysis	Time limit for Rectification / Repair	Maintenance Specifications
		Desirable	Acceptable					
	Other Pavement Distresses			Bi-Annually			2-7 days	IRC:82-2015
	Deflection/ Remaining Life			Annually	Falling Weight Reflectometer	IRC 115: 2014	180 days	IRC:115-2014
Rigid Pavement (Pavement of MCW, Service Road, Grade structure ,	Roughness BI	2200 m m/k	2400mm /km	Bi-Annually	Class Profilometer	ASTM E950 (98):2004 and ASTM E1656-94: 2000	180 days	IRC:SP:83-2008
	Skid	Skid Resistance no. at different speed of vehicles		Bi-Annually	SCRIM (Sideway-force	IRC: SP:83-2008	180 days	IRC:SP:83-2008

Asset Type approaches of connecting roads, slip roads, lay bys etc. as applicable)	Perform ance Paramet er	Level of Service (LOS)		Freque ncy of Inspec tion	Tools/Equip ment	Standards References for Inspection and Analysis	and Data	Time limit for Rectification/ Repair	Maintenanc e Specificatio ns
		Desirable	Acceptabl e						
		Minimum SN	Traffic Speed (Km/h)		Coefficient Routine Investigation Machine or equivalent)				
		36	50						
		33	65						
		32	80						
		31	95						
		31	110						

Asset Type	Performance Parameter	Level of Service (LOS)		Frequency of Inspection	Tools/Equipment	Standards and References for Inspection and Data Analysis	Time limit for Rectification / Repair	Maintenance Specifications
		Desirable	Acceptable					
Embankment/ Slope	Edge drop at shoulders	Nil	40mm	Daily	Length Measurement Unit like Scale, Tape, odometer etc.	IRC	7-15 days	MORT&H Specification 408.4
	Slope of camber/cross fall	Nil	<2% variation in prescribed slope of camber /cross fall	Daily			7-15 days	MORT&H Specification 408.4
	Embankment Slopes	Nil	<15 % variation in prescribed side slope	Daily			7-15 days	MORT&H Specification 408.4

Asset Type	Performance Parameter	Level of Service (LOS)		Frequency of Inspection	Tools/Equipment	Standards and References for Inspection and Data Analysis	Time limit for Rectification / Repair	Maintenance Specifications
		Desirable	Acceptable					
	Embankment Protection	Nil	Nil	Daily	NA		7-15 days	MORT&H Specification
	Rain Cuts/ Gullies in slope	Nil	Nil	Daily Specially During Rainy Season	NA		7-15 days	MORT&H Specification

In addition to the above performance criterion, the contractor shall strictly maintain the rigid pavements as per requirements in the following table

Table-2:Maintenance Criteria for Rigid Pavements:

S.No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case $d < D/2$	For the case $d > D/2$
CRACKING						
1	Single Discrete Cracks Not intersecting with any joint	w =width of crack L =length of crack d = depth of crack D = depth of slab	0	Nil, not discernible	No Action	Not applicable
			1	$w < 0.2$ mm. hair cracks		
			2	$w=0.2-0.5$ mm,discernible from slow-moving car	Seal without delay	Seal, and stitch if $L > 1$ m. Within 7days
			3	$w=0.5-1.5$ mm,discernible from fast-moving car		

S.No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case $d < D/2$	For the case $d > D/2$
			4	$w = 1.5-3.0\text{mm}$	Seal, and stitch if $L > 1\text{m}$.	Staple or Dowel Bar Retrofit, FDR for affected portion.
			5	$w > 3\text{ mm.}$	m. Within 7 days	Within 15days
2	Single Transverse (or Diagonal) Crack intersecting with one or more joints	w =width of crack L =length of crack d = depth of crack D = depth of slab	0	Nil, not discernible	No Action	
			1	$w < 0.2\text{ mm}$, hair cracks	Route and seal with epoxy.	Staple or Dowel Bar Retrofit.
			2	$w=0.2-0.5\text{mm}$,discerniblefrom slow vehicle	Within 7 days	Within 15days
			3	$w=0.5-3.0\text{mm}$,discerniblefrom fast vehicle	Route, seal and stitch, if $L > 1\text{m}$. Within 7 days	

S.No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case $d < D/2$	For the case $d > D/2$
			4	$w = 3.0-6.0\text{mm}$	Dowel Bar Retrofit. Within 15 days	Full Depth Repair. Dismantle and reconstruct affected.
			5	$w > 6\text{ mm}$, usually associated with spalling, and/or slab rocking under traffic	Not Applicable, as it may be full depth	Portion with norms and specifications. See Para 5.5 & 9.2. Within 15days
3	Single Longitudinal Crack intersecting with one or more joints	w =width of crack L =length of crack d =depth of crack D = depth of slab	0 1	Nil, not discernible $w < 0.5\text{mm}$,discernable from slow moving vehicle	No Action Seal with epoxy, if $L > 1\text{m}$. Within 7 days	Staple or dowel bar retrofit. Within 15days

S.No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case $d < D/2$	For the case $d > D/2$
			2	$w = 0.5 - 3.0 \text{ mm}$, discernible from fast vehicle	Route seal and stitch, if $L > 1 \text{ m}$. Within 15 days	-
			3	$w = 3.0 - 6.0 \text{ mm}$	Staple, if $L > 1 \text{ m}$. Within 15	Partial Depth Repair with stapling. Within 15 days
			4	$w = 6.0 - 12.0 \text{ mm}$, usually associated with spalling	Not Applicable, as it may be full	Full Depth Repair
			5	$w > 12 \text{ mm}$, usually associated with spalling, and/or slab rocking under traffic	depth	Dismantle and reconstruct affected portion as per norms and specifications -

S.No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case $d < D/2$	For the case $d > D/2$
						See Para 5.6.4 Within 15 days
4	Multiple Cracks intersecting with one or more joints	w=width of crack	0	Nil, not discernible	No Action	
			1	$w < 0.2$ mm, hair cracks	Seal, and stitch if $L > l$	-
			2	$w=0.2-0.5$ mm, discernible from slow vehicle	m. Within 15 days	
			3	$w=0.5-3.0$ mm, discernible from fast vehicle		
			4	$w=3.0-6.0$ mm panel broken into 2 or 3 pieces	Full-depth repair within 15 days	Dismantle, Reinstall sub base, Reconstruct whole slab as per specifications within 30 days
			5	$w > 6$ mm and/or panel broken		

S.No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case $d < D/2$	For the case $d > D/2$
				into more than 4 pieces		
5	Corner Break	w = width of crack L = length of crack	0	Nil, not discernible	No Action	-
			1	$w < 0.5$ mm; only 1 corner broken	Seal with low viscosity epoxy to secure broken parts	Seal with epoxy seal with epoxy
			2	$w < 1.5$ mm; $L < 0.6$ m, only one corner broken	Within 7 days	Within 7 days
			3	$w < 1.5$ mm; $L < 0.6$ m, two corners broken	Partial Depth (Refer Figure 8.3 of IRC:SP: 83-2008)	Full depth repair
			4	$w > 1.5$ mm; $L > 0.6$ m or three corners broken	Within 15 days	
			5	three or four corners broken		Reinstate sub-base, and

S.No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case $d < D/2$	For the case $d > D/2$
						slab as per norms and specifications within 30days
6	Punch out (Applicable to Continuous Reinforced Concrete Pavement (CRCP) only)	w=width of crack L = length (m/m ²)	0	Nil, not discernible	Not Applicable, as it may be full depth	No Action
			1	$w < 0.5 \text{ mm}; L < 3 \text{ m/m}^2$		Seal with low viscosity epoxy to secure broken parts. Within 15days
			2	either $w > 0.5 \text{ mm}$ or $L < 3 \text{ m/m}^2$		
			3	$w > 1.5 \text{ mm}$ and $L < 3 \text{ m/m}^2$		
			4	$w > 3 \text{ mm}$, $L < 3 \text{ m/m}^2$ and deformation		Full depth repair . Cut out and replace damaged area taking care not to damage reinforcement. Within 30days
			5	$w > 3 \text{ mm}$, $L > 3 \text{ m/m}^2$ and deformation		

S.No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case $d < D/2$	For the case $d > D/2$
Surface Defects						
7	Ravelling Honeycomb surface	$r = \frac{\text{area damaged or surface/total surface of slab}}{\text{total surface of slab}} (\%)$ $h = \text{maximum depth of damage}$	0	Nil, not discernible	No action.	Not Applicable
			1	$r < 2 \%$	Local repair of areas damaged and liable to be damaged.	
			2	$r = 2-10 \%$	Within 15 days	
			3	$r = 10-25\%$	Bonded Inlay, 2 or 3 slabs if affecting.	
			4	$r = 25-50 \%$		

S.No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case $d < D/2$	For the case $d > D/2$
			5	$r > 50\%$ and $h > 25\text{mm}$	Within 30 days Reconstruct slabs, 4 or more slabs if affecting. Within 30 days	
8	Scaling	$r = \frac{\text{damaged surface}}{\text{total surface of slab}} (\%)$ $h = \text{maximum depth of damage}$	0 1 2	Nil, not discernible $r < 2\%$ $r = 2-10\%$	Short Term No action. Local repair of areas damaged and liable to be damaged. Within 7 days	Long Term Not Applicable

S.No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action			
					For the case $d < D/2$	For the case $d > D/2$		
			3	$r = 10 - 20\%$	Bonded Inlay within 15 days			
			4	$r = 20 - 30 \%$				
			5	$r > 30 \%$ and $h > 25\text{mm}$			Reconstruct slab within 30 days	
9	Polished Surface/Glazing	t = texture depth, sand patch test	0		No action.	Not Applicable		
			1				$t > 1 \text{ mm}$	
			2				$t = 1 - 0.6 \text{ mm}$	
			3				$t = 0.6 - 0.3\text{mm}$	Monitor rate of deterioration
			4				$t = 0.3 - 0.1\text{mm}$	

S.No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case d<D/2	For the case d>D/2
			5	t < 0.1 mm	Diamond Grinding if affecting 50% or more slabs in a continuous stretch of minimum 5 km. Within 30 days	
10	Pop out (Small Hole) Refer Para 8.4	n= number/m ² d= diameter h=maximum depth	0 1 2	d<50mm;h<25mm;n<1per5 m ² d=50-100mm;h<50mm;n<1 per 5 m ² d=50-100mm;h>50mm;n<1 per 5 m ²	No action. Partial depth repair 65 mm deep. Within 15 days	Not Applicable

S.No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case $d < D/2$	For the case $d > D/2$
			3	$d=100-300\text{mm}; h < 100\text{mm}; n < 1$ per 5 m^2	Partial repair depth 110mm	
			4	$d=100-300\text{mm}; h > 100\text{mm}; n < 1$ per 5 m^2	i.e. 10 mm more than the depth of the hole. Within 30 days	
			5	$d > 300\text{mm}; h > 100\text{mm}; n > 1$ per 5 m^2	Full depth repair. Within 30 days	

Joint Defects						
11	Joint Seal Defects	Loss or damage L = Length as % total joint length	0	Difficult to discern.	Short Term	Long Term
					No action.	Not Applicable
					Clean joint, inspect later.	
					Clean and reapply sealant in selected locations. Within 7 days	
					Clean, widen and reseal the joint. Within 7 days	
			1	Discernible, L < 25% but of little immediate consequence with regard to ingress of water or trapping incompressible material.		
			3	Notable. L > 25% insufficient protection against ingress of water and trapping incompressible material.		
			5	Severe; w > 3mm negligible protection against ingress of water and trapping incompressible material.		

12	Spalling of Joints	w=width on either side of the joint L = length of spalled portion (as % joint length)	0	Nil, not discernible	No action.	Not Applicable
			1	w < 10 mm	Apply low viscosity epoxy resin/ mortar in cracked	
			2	w = 10-20mm, L <25%	portion. Within 7 days	
			3	w = 20-40mm, L >25%	Partial Depth Repair. Within 15	
			4	w = 40-80mm, L >25%	30 -50mm deep, h = w+20% of w, within 30 days	
			5	w > 80 mm, and L >25%	50 -100mm deep repair. H = w+ 20% of w. Within 30 days	
13	Faulting(or Stepping)	f = difference of level	0	not discernible, < 1mm	No action.	No action.

			1	$f < 3 \text{ mm}$		
			2	$f = 3-6 \text{ mm}$	Determine cause and observe, take action for diamond grinding	Replace the slab as appropriate.
			3	$f = 6-12 \text{ mm}$	Diamond Grinding	Within 30days
			4	$f = 12-18 \text{ mm}$	Raise sunken slab.	
			5	$f > 18 \text{ mm}$	Strengthen subgrade and sub-base by grouting and raising sunken slab	Replace the slab as appropriate. Within 30days
14	Blow-up or Buckling	h = vertical displacement from normal profile	0	Nil, not discernible	Short Term	Long Term
			1	$h < 6 \text{ mm}$	No Action	
			2	$h = 6-12 \text{ mm}$	Install Signs to Warn Traffic	

			3	$h = 12\text{-}25\text{mm}$	within 7 days	
			4	$h > 25\text{ mm}$	Full Depth Repair. Within	
			5	shattered slabs, i.e. 4 or more pieces	Replace broken slabs. Within 30 days	
15	Depression	$h = \text{negative vertical displacement from normal profile}$ $L = \text{length}$	0	Not discernible, $h < 5\text{mm}$	No action.	
			1	$h = 5\text{-}15\text{mm}$		
			2	$h = 15\text{-}30\text{mm}$, Nos < 20% joints	Install Signs to Warn Traffic within 7 days	Not Applicable
			3	$h = 30\text{-}50\text{mm}$		
			4	$h > 50\text{ mm}$ or >20% joints	Strengthen subgrade. Reinstate pavement at normal level	

			5	$h > 100\text{mm}$	if $L < 20$ m. Within 30 days	
16	Heave	h = positive vertical displacement from normal profile. L = length	0	Not discernible. $h < 5$ mm	Short Term	Long Term
			1	$h = 5\text{-}15\text{mm}$	No action. Follow up.	scrabble
			2	$h = 15 - 30$ mm, Nos $< 20\%$ joints	Install Signs to Warn Traffic	
			3	$h = 30\text{-}50\text{mm}$	within 7 days	
			4	$h > 50$ mm or $> 20\%$ joints	Stabilise subgrade. Reinstate pavement at normal level if length < 20 m. Within 30 days	
			5	$h > 100\text{mm}$		
17	Bump	h vertical =	0	$h < 4$ mm	No action	

		displacement from normal profile	1	$h = 4-7 \text{ mm}$	Grind, in case of new construction within 7 days	Construction Limit for New Construction.
			3	$h = 7-15 \text{ mm}$	Grind, in case of ongoing Maintenance within 15 days	Replace in case of new construction. Within 30days
			5	$h > 15 \text{ mm}$	Full Depth Repair. Within 30	Full Depth Repair. Within
18	Lane to Shoulder Dropoff	$f = \text{difference of level}$	0	Nil, not discernible < 3mm	Short Term	Long Term
			1	$f = 3-10 \text{ mm}$	No action.	
			2	$f = 10-25 \text{ mm}$	Spot repair of shoulder within 7 day	
			3	$f = 25-50 \text{ mm}$	Fill up shoulder	

			4	f = 50-75mm	within 7 days	For any 100 m stretch Reconstruct shoulder, if affecting 25% or more of stretch. Within 30days
			5	f > 75 mm		
Drainage						
19	Pumping	quantity of fines and water expelled through open joints and cracks Nos Nos/100m stretch	0 1 to 2 3 to 4 5	not discernible slight/occasional Nos< 10% appreciable/ Frequent 10 -25% abundant, crack development > 25%	No Action Repair cracks and joints Without delay. Lift or jack slab within 30days. Repair distressed pavement sections. Strengthen subgrade and sub base. Replace slab. Within 30 days	Inspect and repair sub-drainage at distressed sections and upstream.

20	Ponding	Ponding on slabs due to blockage of drains	0-2	No discernible problem	No action.	Action required to stop water damaging foundation within 30 days.
			3 to 4	Blockages observed in drains, but water flowing	Clean drains etc within 7 days, Follow up	
			5	Ponding, accumulation of water observed	-do-	

Table-3: Maintenance Criteria for Safety Related Items and Other Furniture Items:

Asset Type	Performance Parameter	Level of Service (LOS)			Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specification and Standards
Highway	Availability of Safe Sight Distance	As per IR CSP: 84-2014, a minimum of safe stopping sight distance shall be available throughout.			Monthly	Manual Measurements with Odometer along with video/image backup	Removal of obstruction within 24 hours, in case of sight line affected by temporary objects such as trees, temporary encroachments. In case of permanent structure or design deficiency: Removal of obstruction/improvement of deficiency at the earliest Speed Restriction boards and suitable traffic calming measures such as transverse bar marking, blinkers, etc. shall be applied during the period of rectification.		IRC:SP 84-2014
		Design Speed, kmph	Desirable Minimum Sight Distance(m)	Safe Stopping Sight Distance (m)					
		100	360	180					
		80	260	130					
Pavement Marking	Wear	<70% of marking remaining			Bi-Annually	Visual Assessment as per Annexure-F of IRC:35-2015	Re -painting	Cat-1 Defect - within 24 hours Cat-2 Defect - within 2months	IRC:35-2015

Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specification and Standards
		Initial 7 days Retro reflectivity: 100 mcd/m ² /lux Minimum Threshold Level: 50 mcd/m ² /lux					
	Skid Resistance	Initial and Minimum performance for Skid Resistance: Initial (7 days): 55 BPN Min. Threshold: 44 BPN *Note: shall be considered under urban/city traffic condition encompassing the locations like pedestrian crossings, bus bay, bus stop, cycle track intersection delineation, transverse bar markings etc	Bi-Annually	As per Annexure-G of IRC:35-2015		Within 24 hours	IRC:35-2015
Road Signs	Shape and Position	Shape and Position as per IRC:67-2012. Signboard should be clearly visible for the design speed of the section.	Daily	Visual with video/image backup	Improvement of shape, in case if shape is damaged. Relocation as per requirement	48 hours in case of Mandatory Signs, Cautionary and Informatory Signs (Single and Dual post signs) 15 Days in case of Gantry/Cantilever	IRC:67-2022
	Retro reflectivity	As per specifications in IRC:67-2012	Bi-Annually	Testing of each	Change of signboard	48 hours in case of Mandatory	IRC:67-2022

Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specification and Standards
				signboard using Retro Reflectivity Measuring Device. In accordance with ASTM D 4956-09.		Signs, Cautionary and Informatory Signs(Single and Dual post signs) 1 Month incase of Gantry/ Cantilever Sign boards	
Kerb	Kerb Height	As per IRC 86:1983 depending upon type of Kerb	Bi-Annually	Use of distance measuring tape	Raising Kerb height	Within 1 Month	RC 86:1983
	Kerb Painting	<u>Functionality:</u> Functioning of Kerb painting as intended	Daily	Visual with video/image backup	Kerb Repainting	Within 7-days	RC 35:2015
Other Road Furniture	Reflective Pavement Markers(Road Studs)	Numbers and Functionality as per specifications in IRC:SP:84-2014 and IRC:35-2015, unless specified in Schedule-B.	Daily	Counting	New Installation	Within 2 months	IRC:SP:84-2014, IRC:35-2015
	Pedestrian Guardrail	<u>Functionality:</u> Functioning of guardrail as intended	Daily	Visual with video/image backup	Rectification	Within 15 days	IRC:SP:84-2014
	Traffic Safety Barriers	<u>Functionality:</u> Functioning of Safety Barriers as intended	Daily	Visual with video/image backup	Rectification	Within 7 days	IRC:SP:84-2014, IRC:119-2015

	End Treatment of Traffic Safety Barriers	Functionality: <u>Functioning of End Treatment as intended</u>	Daily	Visual with video/image backup	Rectification	Within 7 days	IRC:SP:84-2014, IRC:119-2015
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Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
	Attenuators	Functionality: <u>Functioning of Attenuators as intended</u>	Daily	Visual with video/image backup	Rectification	Within 7 days	IRC:SP-2014, IRC:119-2015
	Guard Posts and Delineators	Functionality: <u>Functioning of Guard Posts and Delineators as intended</u>	Daily	Visual with video/image backup	Rectification	Within 15 days	IRC: 79 - 1981
	Overhead Sign Structure	Overhead sign structure shall be structurally adequate	Daily	Visual with video/image backup	Rectification	Within 15 days	IRC:67-2012
	Traffic Blinkers	Functionality: <u>Functioning of Traffic Blinkers as intended</u>	Daily	Visual with video/ image backup	Rectification	Within 7 days	IRC:SP:84-2014
Highway Lighting	Highway Lights	Illumination: Minimum 40 Lux illumination on the road surface	Daily	The illumination level shall be measured with luxmeter	Improvement in Lighting System	24 hours	IRC:SP:84-2014
		No major failure in the lighting system	Daily	-	Rectification of failure	24 hours	IRC:SP:84-2014
		No minor failure in the lighting system	Monthly	-	Rectification of failure	8 hours	IRC:SP:84-2014

g System	Toll Plaza Canopy Lights	Minimum 40 Lux illumination on the road surface	Daily	The illumination level shall be measured with luxmeter	Improvement in Lighting System	24 hours	IRC:SP:84-2014
		No major/minor failure in the lighting system	Daily	-	Rectification of failure	8 hours	IRC:SP:84-2014
Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specification and Standards
Trees and Plantation including median plantation	Obstruction In a minimum head-room of 5.5 m above carriageway or Obstruction in visibility of road signs	No obstruction due to trees	Monthly	Visual with video/image backup	Removal of trees	Immediate	IRC:SP:84-2014
	Deterioration in health of trees and bushes	Health of plantation shall be as per requirement of specifications & instructions issued by Authority from time to time	Daily	Visual with video/image backup	Timely watering and treatment. Or Replacement of Trees and Bushes.	Within 90 days	IRC:SP:84-2014
	Vegetation affecting sight line and road structures	Sight line shall be free from obstruction by vegetation	Daily	Visual with video/image backup	Removal of Trees	Immediate	IRC:SP 84-2014

Rest Areas	Cleaning of toilets	-	Daily	-	-	Every 4hours	
	Defects in electrical, water and sanitary installations	-	Daily	-	Rectification	24 hours	
Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specification and Standards
Other Project Facilities and Approach roads	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		Daily	-	Rectification	15 days	IRC:SP 84-2014

Asset Type	Performance parameter	Level of Service	Frequency of Measurement	Testing Method	Recommended remedial measures	Time limit for rectification	Specification standards
Pipe/box/slab culverts	Free waterway/ unobstructed flow section	85% of culvert normal flow area to available.	2 times in a year (before and after rainy season)	Inspection by Bridge Engineer as per IRC SP:35-1990 and recording of depth of silting and area of vegetation.	Cleaning silt up soils and debris in culvert barrel after rainy season, removal of bushes and vegetation, U/s of barrel, under barrel and D/s of barrel before rainy season.	15 days before onset of monsoon and within 30 days after end of rainy season.	IRC 5-2015, IRC SP:40-1993 and IRC SP:13-2022
	Leak-proof expansion joints if any	No leakage through expansion joints	Bi-Annually	Physical inspection of expansion joints as per IRC SP: 35-1990 if any, for leakage strains on walls at joints.	Fixing with sealant suitably	30 days or before onset of rains whichever comes earlier	IRC SP:40-1993 and IRC SP:69-2011
	Structurally Sound	Spalling of concrete not more than 0.25 sqm	Bi-Annually	Detailed inspection of all components of culvert as per IRC SP:35-1990 and recording the defects	Repairs to spalling, cracking, delamination, rusting shall be followed as per IRC:SP:40-1993	15 days	IRC SP:40-1993 and MORTH Specification Clause 2800
		Delamination of concrete not more than 0.25 sqm					
		wider than 0.3 mm not more than aggregate length					
	Protection works in good condition	Damaged of rough stone apron or bank	2 times in a year	Condition survey as per IRC-SP:35-1990	Repair to damaged apron and pitching	30 days after defect observation	IRC: SP 40-1993 and IRC:SP:13-2004

		revetment not more than 3 sqm, damage to solid apron (concrete apron) not more than 1 sqm	(before and after rainy season)			or 2 weeks before onset of rainy season whichever is earlier	
Bridges including ROBs Flyover etc. as applicable	Riding quality or user comfort	No pothole in wearing coat on bridge deck	Daily	Visual inspection as per IRC SP:35-1990	Repairs to BC or wearing coat	15 days	MORTH Specification 2811
Bridge Super Structure	Bumps	No bump at expansion joint	Daily	Visual Inspection as per IRC SP:35-1990	Repairs to BC on either side of expansion joints, profile correction course on approach slab in case of settlement to approach embankment	15 days	MoRT&H Specification 3004.2 & 2811
	User safety (Condition of crash barrier and guard rail)	No damaged or missing stretch of crash barrier or pedestrian hand railing	Daily	Visual inspection and detailed condition survey as per IRC SP:35-1990	Repairs and replacement of safety barriers	3 days	IRC:5-1998, IRC SP:84-2014 and IRC SP:40-1993
	Rusted reinforcement	Not more than 0.25 sqm	Bi-Annually		All the corroded reinforcement shall need to be thoroughly cleaned from rusting and applied with	15 days	IRCSP:40-1993 and MORTH Specification 1600.
	Spalling of Concrete	Not more than 0.50 sqm					
	Delamination	Not more than 0.50 sqm					

					anti-corrosive coating before carrying out there pairs to affected concrete portion with epoxy mortar /concrete.		
	Cracks wider than 0.30 mm	Not more than 1 m total length	Bi-Annually	Detailed condition survey as per IRC SP:35-1990 using Mobile Bridge Inspection Unit	Grouting with epoxy mortar, investigating causes for cracks development and carry out necessary rehabilitation.	48 hours	IRC SP: 40-1993 and MORTH Specification 2800.
	Rainwater seepage through deck slab	. Leakage-nil	Quarterly	Detailed condition survey as per IRC SP:35-1990 using Mobile Bridge Inspection Unit	Grouting of deck slab at leakage areas, waterproofing, repairs to drainage spouts	1months	MORTH specifications 2600 & 2700.
	Deflection due to permanent loads and live load	Within design limits	Once in every 10 years for span more than 40 m	Load test method	Carryout major rehabilitation works on bridge to retain original design loads capacity	6 months	IRC SP:51 -1999
	Vibrations in bridge deck due to moving trucks	Frequency of vibrations shall not be more than 5 Hz	Once	Laser displacement sensors or laser vibro-meters	Strengthening of super structure	4 months	AASHTO LRFD specifications

Leakage in Expansion joints	No damage to elastomeric sealant compound in strip seal expansion joint, no leakage of rain water through expansion joint in case of buried and asphalt plug and copper strip joint.	Bi-Annually	Detailed condition survey as per IRC SP:35-1990 using Mobile Bridge Inspection Unit	Replace of seal in expansion joint	15 days	MORTH specifications 2600 and IRC SP: 40-1993.
Debris and dust in strip seal expansion joint	No dust or debris in expansion joint gap	Monthly	Detailed condition survey as per IRC SP:35-1990 using Mobile Bridge Inspection unit	Cleaning of expansion joint gaps thoroughly	3 days	MORTH specifications 2600 and IRC SP:40-1993

	Drainage spouts	No down take pipe missing/broken below soffit of the deck slab. No silt, debris, clogging of drainage spout collection chamber.	Monthly	Detailed condition survey as per IRC SP:35-1990 using Mobile Bridge Inspection Unit	Cleaning of drainage spouts thoroughly. Replacement of missing/broken down take pipes with a minimum pipe extension of 500mm below soffit of slab. Providing sealant around the drainage spout if any leakages observed.	3 days	MORTH specification 2700.
Bridge-substructure	Cracks/spalling of concrete/rusted steel	No cracks, spalling of concrete and rusted steel	Bi-Annually	Detailed condition survey as per IRC SP:35-1990 using Mobile Bridge Inspection Unit	All the corroded reinforcement shall need to be thoroughly cleaned from rusting and applied with anti-corrosive coating before carrying out repairs to substructure by grouting/guniting and micro concreting depending on type of defect noticed	30 days	IRC SP: 40-1993 and MORTH specification 2800.

	Bearings	Delamination of bearing reinforcement not more than 5%, cracking or tearing of rubber not more than 2 locations per side, no rupture of reinforcement or rubber	Bi-Annually	Detailed condition survey as per IRC SP:35-1990 using Mobile Bridge Inspection Unit	In case of failure of even one bearing on any pier/abutment, all the bearings on that pier/abutment shall be replaced, in order to get uniform load transfer on to bearings.	3 months	MORTH specification 2810 and IRC SP: 40-199.
Bridge Foundations	Scouring around foundations	Scouring shall not be lower than maximum scour level for the bridge	Bi-Annually	Condition survey and visual inspection as per IRC SP:35-1990 using Mobile Bridge Inspection Unit. In case of doubt, use Underwater camera for inspection of deep wells in major Rivers.	Suitable protection works around pier/abutment	1 month	IRC SP: 40-1993, IRC 83-2014, MORTH specification 2500
	Protection works in good condition	Damaged of rough stone apron or bank revetment not more than 3	2 times in a year (before and after rainy season)	Condition survey as per IRC SP:35-1990	Repairs damaged aprons to pitching.	30 days after defect observation or 2	IRC: SP 40-1993 and IRC:SP:13-2004.

		sq.m, damage to solid apron (concrete apron) not more than 1 sq.m				weeks before onset of rainy season whichever is earlier.	
<u>Note:</u> Any Structure during the entire contract period which is found that does not complies with all requirements of this Table will be prepared, rehabilitated or even reconstructed under the scope of the contractor.							

Table 4: Maintenance Criteria for Structures and Culverts:

Table 5 : Maintenance Criteria for Hill Roads

In addition to above, for hill roads the following provisions for maintenance is also to done.

Hill Roads		
(i)	Damage to new Gabion wall/ Retaining wall	7 (Seven) days
(ii)	Landslides requiring clearance	12 (twelve) hours
(iii)	Hill Side drain clearance	1 (one) day
(iv)	Jungle clearance	2 (times) in a calendar year

Note: For all tables 1to5above, latest BIS & IRC standards (even those not indicated herewith) along with MoRTH specifications shall be binding for all maintenance Activities.

A. Flexible Pavement

Nature of Defect or deficiency		Time limit for repair/rectification
(b) Granular earth shoulders, side slopes, drains and culverts		
(i)	Variation by more than 1% in the prescribed slope of camber/cross fall (shall not be less than the camber on the main carriageway)	7 (seven) days
(ii)	Edge drop at shoulders exceeding 40 mm	7 (seven) days
(iii)	Variation by more than 15 % in the prescribed side (embankment) slopes	30 (thirty) days
(iv)	Rain cuts/gullies in slope	7 (seven) days
(v)	Damage to or silting of culverts and side drains	7 (seven) days
(vi)	De silting of drains in urban/semi-urban areas	24 (twenty four) hours
(vii)	Railing, parapets, crash barriers	7 (seven) days (Restore immediately if causing safety hazard)
(c) Roadside furniture including road sign and pavement marking		
(i)	Damage to shape or position, poor visibility or loss of retro-reflectivity	48 (forty eight) hours
(ii)	Painting of km stone, railing, parapets, crash barriers	As and when required/ Once every year
(iii)	Damaged/missing signs road requiring replacement	7 (seven) days
(iv)	Damage to road mark ups	7 (seven) days
(d) Road lighting		
(i)	Any major failure of the system	24 (twenty four) hours
(ii)	Faults and minor failures	8 (eight) hours
(e) Trees and plantation		

Nature of Defect or deficiency		Time limit for repair/ rectification
(i)	Obstruction in a minimum head- room of 5 m above carriage way or obstruction in visibility of road signs	24 (twenty-four) hours
(ii)	Removal of fallen trees from carriageway	4 (four) hours
(iii)	Deterioration in health of trees and bushes	Timely watering and treatment
(iv)	Trees and bushes requiring replacement	30 (thirty) days
(v)	Removal of vegetation affecting sightline and road structures	15 (fifteen) days
(f) Rest area		
(i)	Cleaning of toilets	Every 4(four) hours
(ii)	Defects in electrical, water and sanitary installations	24 (twenty four) hours
(g) [Toll Plaza]		
(h)	Other Project Facilities and Approach roads	
(i)	Damage in approach roads, pedestrian facilities, truck lay-byes, bus-bays, bus-shelters, cattle crossings, [Traffic Aid Posts, Medical Aid Posts] and service roads	15 (fifteen)days
(ii)	Damaged vehicles or debris on the road	4 (four) hours
(iii)	Malfunctioning of the mobile crane	4 (four) hours
Bridges		
(a) Superstructure		
(i)	Any damage, cracks, spalling/ scaling Temporary measures Permanent measures	within 48 (forty eight) hours within15 (fifteen) days or as the Authority's Engineer
(b) Foundations		

Nature of Defect or deficiency		Time limit for repair/rectification
(i)	Scouring and/or cavitation	15 (fifteen)days
(c) Piers, abutments, return walls and wing walls		
(i)	Cracks and damages including settlement and tilting, spalling, scaling	30 (thirty) days
(d) Bearings(metallic)of bridges		
(i)	Deformation, damages, tilting or shifting of bearings	15 (fifteen) days Greasing of metallic bearings once in a year
(e) Joints		
(i)	Malfunctioning of joints	15 (fifteen)days
(f) Other items		
(i)	Deforming of pads in elastomeric bearings	7 (seven) days
(ii)	Gathering of dirt in bearings and joints; or clogging of spouts, weep holes and vent-holes	3 (three) days
(iii)	Damage or deterioration in kerbs, parapets, handrails and crash barriers	3 (three) days(immediately within 24hoursifposing danger to safety)
(iv)	Rain-cuts or erosion of banks of the side slopes of approaches	7 (seven) days
(v)	Damage to wearing coat	15 (fifteen)days
(vi)	Damage or deterioration in approach slabs, pitching, apron, toes, floor or guide bunds	30 (thirty) days
(vii)	Growth of vegetation affecting the structure or obstructing the waterway	15 (fifteen)days
(g) Hill Roads		
(i)	Damage to new Gabion wall/ Retaining wall	7 (seven) days
(ii)	Landslides requiring clearance	12 (twelve) hours
(iii)	Hill Side drain clearance	1 (one) day

Nature of Defect or deficiency		Time limit for repair/ rectification
(iv)	Jungle clearance	2 (times) in a calendar year

[Note: Where necessary, the Authority may modify the time limit for repair/rectification, or add to the nature of Defect or deficiency before issuing the bidding document, with the approval of the competent authority.]

SCHEDULE - F
(See Clause 3.1.7(a))

APPLICABLE PERMITS

1. Applicable Permits

- i. The Contractor shall obtain, as required under the Applicable Laws, the following Applicable Permits.
 - a) Permission of the State Government for extraction of boulders from quarry.
 - b) Permission of Village Panchayats and Pollution Control Board for installation of crushers.
 - c) License for use of explosives.
 - d) Permission of the State Government for drawing water from river/reservoir.
 - e) License 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 setting up asphalt plant.
 - h) Permission of Village Panchayats and State Government for borrow earth and
 - i) Any other permits or clearances required under Applicable Laws
- ii. Applicable Permits, as required, relating to environmental protection and conservation shall have been procured by the Authority in accordance with the provisions of this Agreement.

SCHEDULE - G

(See Clauses 7.1 and 19.2)

BANK GUARANTEE as PERFORMANCE SECURITY

Annex-I

(See Clause 7.1)

Performance Security/Additional Performance Security

To,

The Executive Director (P), NHIDCL (Under MoRTH), Tuikhuahtlang-796001, Aizawl, Mizoram WHEREAS _____ [name and address of Contractor] (hereafter called the "Contractor") has undertaken, in pursuance of Letter of Acceptance (LOA) NO. _____ Dated for construction of "One-Time Improvement Between Dulte -Champhai Road (Nh-06) From Old Existing Chainage Km 70+000 To Km 92+165 & Km 106+000 To Km 146+450 (Single Lane) In The State Of Mizoram " (hereinafter called the "Contract"). AND WHEREAS the Contract requires the Contractor to furnish an {Performance Security/Additional Performance Security} for due and faithful performance of its obligations, under and in accordance with the Contract, during the {Construction Period/ Defects Liability Period and Maintenance Period} in a sum of Rs..... cr. (Rupees crore) (the "**Guarantee Amount**" ¹⁵). AND WHEREAS we,..... through our branch at (the "Bank") have agreed to furnish this Bank Guarantee (hereinafter called the "Guarantee") by way of Performance security. NOW, THEREFORE, the Bank hereby, unconditionally and irrevocably, guarantees and affirms as follows:¹

Point No. 1

The Bank hereby unconditionally and irrevocably guarantees the due and faithful performance of the Contractor's obligations during the {Construction Period/ Defects Liability Period and Maintenance Period} under and in accordance with the Contract, 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 Contractor, such sum or sums up to 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

Point No. 2

A letter from the Authority, under the hand of an officer not below the rank of Dy General Manager (P), NHIDCL, Mizoram, that the Contractor has committed default in the due and faithful performance of all or any of its obligations under and in accordance with the Contract 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 Contractor is in default in due and faithful performance of its obligations during and under the Contract and its decision that the Contractor is in default shall be final and binding on the Bank, notwithstanding any differences between the Authority and the Contractor, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or body, or by the discharge of the Contractor for any reason whatsoever.

Point No. 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 Contractor 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.

Point No. 4

It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.

Point No. 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 Contract or to extend the time or period for the compliance with, fulfillment and/ or performance of all or any of the obligations of the Contractor contained in the Contract or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Authority against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Contract 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 Contractor 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.

Point No. 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 Contract or for the fulfillment, compliance and/or performance of all or any of the obligations of the Contractor under the Contract.

Point No. 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 all rights of the Authority under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.

Point No. 8

The Guarantee shall cease to be in force and effect on **\$. Unless a demand or claim under this Guarantee is made in writing before expiry of the Guarantee, the Bank shall be discharged from its liabilities hereunder.

Point No. 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 and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.

Point No. 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 authorized 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.

Point No. 11

This Guarantee shall come into force with immediate effect and shall remain in force and effect for up to the date specified in paragraph 8 above or until it is released earlier by the Authority pursuant to the provisions of the Contract.

Point No. 12

This Guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.

Signed and sealed this day of, 20..... at

SIGNED, SEALED AND DELIVERED

For and on behalf of the Bank by:

(Signature)

(Name)

(Designation)

(Code Number)

(Address)

NOTES:

- (i) The bank guarantee should contain the name, designation and code number of the officer(s) signing the guarantee.
- (ii) The address, telephone number and other details of the head office of the Bank as well as of issuing branch should be mentioned on the covering letter of issuing branch.

^{1 15} **Guarantee Amount** for Performance Security and Additional Performance Security shall be calculated as per Contract.

³ \$Insert date atleast 2(two) years from the date of issuance of this Guarantee (in accordance with Clause 2.21 of the RFP). The Contractors can submit the BG of two years at one time and keep on renewing the same till the DLP is over if they have problems in getting the BG in one go for the entire DLP.

(Schedule - G)
(See Clause 19.2)

Form for Guarantee for Advance Payment

EXECUTIVE DIRECTOR (P) NHIDCL, RO -AIZAWL, MIZORAM-796001

WHEREAS:

- (A) [name and address of contractor] (hereinafter called the “**Contractor**”) has executed an agreement (hereinafter called the “**Agreement**”) with the [name and address of the authority], (hereinafter called the “**Authority**”) for One-Time Improvement Between Dulte -Champhai Road (Nh-06) From Old Existing Chainage Km 70+000 To Km 92+165 & Km 106+000 To Km 146+450 (Single Lane) In The State Of Mizoram on Engineering, Procurement and Construction (the “**EPC**”) basis, subject to and in accordance with the provisions of the Agreement
- (B) In accordance with Clause 19.2 of the Agreement, the Authority shall make to the Contractor an interest bearing @Bank Rate + 3% advance payment (herein after called “**Advance Payment**”) equal to 10% (ten per cent) of the Contract Price; and that the Advance Payment shall be made in two installments subject to the Contractor furnishing an irrevocable and unconditional guarantee by a scheduled bank for an amount equivalent to 110% (one hundred and ten percent) of such installment to remain effective till the complete and full repayment of the installment of the Advance Payment as security for compliance with its obligations in accordance with the Agreement. The amount of {first/second} installment of the Advance Payment is Rs. ----- cr. (Rupees ----- crore) and the amount of this Guarantee is Rs. ----- cr. (Rupees ----- crore) (the “**Guarantee Amount**”)§.
- (C) We, through our branch at (the “**Bank**”) have agreed to furnish this bank guarantee (*hereinafter called the “**Guarantee**”*) for the Guarantee Amount.

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 repayment on time of the aforesaid instalment of the Advance Payment 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,

§ The Guarantee Amount should be equivalent to 110% of the value of the applicable instalment.

contest or protest, and without any reference to the Contractor, such sum or sums up to 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.

A letter from the Authority, under the hand of an officer not below the rank of Dey General Manager (P), NHIDCL, RO -Aizawl, Mizoram, that the Contractor has committed default in the due and faithful performance of all or any of its obligations for the repayment of the installment of the Advance Payment 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 Contractor is in default in due and faithful performance of its obligations during and under the Agreement and its decision that the Contractor is in default shall be final and binding on the Bank, notwithstanding any differences between the Authority and the Contractor, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or body, or by the discharge of the Contractor for any reason whatsoever.

2. 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 Contractor 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.

3. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.

4. 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 Advance Payment or to extend the time or period of its repayment or to postpone for any time, and from time to time, any of the Lefts and powers exercisable by the Authority against the Contractor, 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 Contractor 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 Lefts under any such law.

5. 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 Advance Payment.

6. 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 all Lefts of the Authority under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.

7. The Guarantee shall cease to be in force and effect on ****. Unless a demand or claim under this Guarantee is made in writing on or before the aforesaid date, the Bank shall be discharged from its liabilities hereunder.

8. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writing, and declares and warrants that it

has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.

9. 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.

10. This Guarantee shall come into force with immediate effect and shall remain in force and effect up to the date specified in paragraph 8 above or until it is released earlier by the Authority pursuant to the provisions of the Agreement.

Signed and sealed this day of, 20..... at

SIGNED, SEALED AND DELIVERED

For and on behalf of the Bank by:

(Signature)

(Name)

(Designation)

(Code Number)

(Address)

NOTES:

- (i) The bank guarantee should contain the name, designation and code number of the officer(s) signing the guarantee.
- (ii) The address, telephone number and other details of the head office of the Bank as well as of issuing branch should be mentioned on the covering letter of issuing branch.

§Insert a date being 90 (ninety) days after the end of one year from the date of payment of the Advance payment to the Contractor (in accordance with Clause 19.2 of the Agreement).

SCHEDULE - H
(See Clauses 10.1 (iv) and 19.3)

Contract Price Weightages

1.1 The Contract Price for this Agreement is Rs. *****

1.2 Proportions of the Contract Price for different stages of Construction of the Project Highway shall be as specified below:

Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
1	2	3	4
Road works including culverts, widening and repair of culverts	95.23	B.1- Reconstruction/ New realignment/ bypass (Flexible pavement)	
		(1) Sub Base Course (Granular Sub-base)	0.00
		(2) Non-Bituminous Base Course (Scarifying the existing Granular surface + Wet Mix Macadam)	17.11
		(3) Bituminous Base Course (Prime coat + Tack coat)	
		(4) Wearing Coat (Tack coat + Bituminous Concrete)	79.94
		(5) Earthen shoulder	2.81
	0.00	B.2- Reconstruction/ New realignment/ bypass (Rigid pavement)	
		(1) Sub Base Course (Dismantling of Cement Concrete Pavement + Granular Sub-Base)	0.00
		(2) Dry Lean Concrete (DLC) Course	0.00
		(3) Pavement Quality Concrete (PQC) Course	0.00
		(4) Earthen shoulder	0.00
	1.43	D - Re-Construction and New Culverts on existing road, realignment, bypasses: Culvert (length, 6 m)	
		Repair of collapsed culvert at km 139+860	100.00

Other works	3.34	(1) Side Drain & landslide clearance	67.92
		(2) Jungle clearance	9.19
		(3) Road Marking	0.00
		(4) Road Delineator	0.00
		(5) Construction of Gabion wall	22.89
		(6) Construction of Retaining wall	0.00

1.3 Procedure of estimating the value of work done.

1.3.1 Road works.

Procedure for estimating the value of road work done shall be as follows:

Table 1.3.1

Stage of Payment	Percentage - weightage	Payment Procedure
B.1- Reconstruction/ New realignment/ bypass (Flexible pavement)		Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 500 m length, whichever is less.
(1) Sub Base Course (Granular Sub-base)	0.00	
(2) Non-Bituminous Base Course (Scarifying the existing Granular surface + Wet Mix Macadam)	17.11	
(3) Bituminous Base Course (Prime coat + Tack coat + Dense Graded Bituminous Macadam)	0.00	
(4) Wearing Coat (Tack coat + Bituminous Concrete)	79.94	
(5) Earthen shoulder	2.81	
B.2- Reconstruction/ New realignment/ bypass (Rigid pavement)		Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 500 m length, whichever is less.
(1) Sub Base Course (Dismantling of Cement Concrete Pavement + Granular Sub-Base)	0.00	
(2) Dry Lean Concrete (DLC) Course	0.00	
(3) Pavement Quality Concrete (PQC) Course	0.00	
(4) Earthen shoulder	0.00	

Stage of Payment	Percentage - weightage	Payment Procedure
D - Re-Construction and New Culverts on existing road, realignment, bypasses: Culvert		Cost of each culvert shall be determined on pro rata basis with respect to the total number of culverts. Payment shall be made on the completion of at least one culvert. 75% of the cost will be payable on completion of box/ abutments and slab/ pipe and head wall. Remaining 25% will become payable on completion of protection works including return/ wing walls and any other work associated with culverts.
Repair of collapsed Hume pipe culvert at km 139+860	100.00	

@. For example, if the total length of bituminous work to be done is 100 km, the cost per km of bituminous work shall be determined as follows:

Cost per km = P x weightage for road work x weightage for bituminous work x (1/L)

Where P= Contract Price

L = Total length in km

Similarly, the rates per km for other stages shall be worked out accordingly.

Note: The length affected due to law-and-order problems or litigation during execution due to which the contractor is unable to execute the work, may be deducted from the total project length for payment proposes. The length calculated here is only for payment purposes and will not affect and referred in other clauses of the Contract Agreement.

1.3.4 Other works.

Procedure for estimating the value of other works done shall be as stated in table 1.3.4.

Stage of Payment	Weightage	Payment Procedure
(1) Side Drain & Landslide clearance	67.92	Unit of measurement is linear length in metre. Payments shall be made on pro rata basis on completion of a stage in a length of not less than 100m on one side. Unit of measurement is linear length in km. Payments shall be made on pro rata basis on completion of a stage in a length of not less than one km on both sides.
(2) Jungle clearance	9.19	
(3) Road Marking	0.00	
(4) Road Delineator	0.00	

(5) Gabion wall	22.89	Unit of measurement is linear length. Payment shall be made on pro rata basis on completion of a stage in a length of not less than 10% of the total length and 100m whichever is less
(6) Masonry Retaining wall	0.00	

2. Procedure for payment for Maintenance

2.1 The cost for maintenance shall be as stated in Clause 14.1.1

2.2 Payment for Maintenance shall be made in quarterly instalments in accordance with the provisions of Article 14 and Article 19.

SCHEDULE - I
(See Clause 10.2.4)

DRAWINGS

1. Drawings

In compliance of the obligations set forth in Clause 10.2 of this Agreement, the Contractor shall furnish to the Authority's Engineer, free of cost, all Drawings listed in Annex-I of this Schedule-I.

iii. Additional Drawing

If the Authority's Engineer 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 Contractor to prepare and furnish such drawings forthwith. Upon receiving a requisition to this effect, the Contractor shall promptly prepare and furnish such drawings to the Authority's Engineer, as if such drawings formed part of Annex-I of this Schedule-I.

Annex - I
(Schedule - I)

List of Drawings

[**Note:** The Authority shall describe in this Annex-I, all the Drawings that the Contractor is required to furnish under Clause 10.2 of this agreement.]

All the construction drawings are to be submitted by the Contractor.

Schedule-J

(See Clause 10.3 (ii))

Project Completion Schedule

1. Project Completion Schedule

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

2. Project Milestone-I

- (i) Project Milestone-I shall occur on the date falling on the **35% of the Scheduled Construction Period i.e. 90th day** from the Appointed Date (the “Project Milestone-I”).
- (ii) Prior to the occurrence of Project Milestone-I, the Contractor shall have commenced construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 15% (ten per cent) of the Contract Price.

3. Project Milestone-II

- (i) Project Milestone-II shall occur on the date falling on the **70% of the Scheduled Construction Period i.e. 180th day** from the Appointed Date (the “Project Milestone-II”).
- (ii) Prior to the occurrence of Project Milestone-II, the Contractor shall have continued with construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 50% (Fifty percent) of the Contract Price and **should have started construction of all Bridges**

4. Project Milestone-III

- (i) Project Milestone-III shall occur on the date falling on the **90% of the Scheduled Construction Period i.e. 270th day** from the Appointed Date (the “Project Milestone-III”).
- (ii) Prior to the occurrence of Project Milestone-III, the Contractor shall have continued with construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 75% (seventy five per cent) of the Contract Price and **should have started construction of all project facilities.**

5. Scheduled Completion Date

- (i) The Scheduled Completion Date shall occur on the **365th day** from the Appointed Date.
- (ii) On or before the Scheduled Completion Date, the Contractor shall have completed construction in accordance with this Agreement.

6. Extension of time

Upon extension of any or all of the aforesaid Project Milestones or the Scheduled 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.

Schedule - K
(See Clause 12.1 (ii))
Tests on Completion

1. Schedule for Tests

- (i) The Contractor shall, no later than 30 (thirty) days prior to the likely completion of construction, notify the Authority's Engineer and the Authority of its intent to subject the Project Highway to Tests, and no later than 10(ten) days prior to the actual date of Tests, furnish to the Authority's Engineer and the Authority detailed inventory and particulars of all works and equipment forming part of Works.
- (ii) The Contractor shall notify the Authority's Engineer of its readiness to subject the Project Highway to Tests at any time after 10 (ten) days from the date of such notice, and upon receipt of such notice, the Authority's Engineer shall, in consultation with the Contractor, 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 Authority's Engineer shall thereupon conduct the Tests itself or cause any of the Tests to be conducted in accordance with Article 12 and this Schedule-K.

2. Tests

- (i) Visual and physical test: The Authority's Engineer shall conduct a visual and physical check of construction to determine that all works and equipment forming part thereof conform to the provisions of this Agreement. The physical tests shall include [***].
- (ii) Riding quality test: Riding quality of each lane of the carriageway shall be checked with the help of a Network Survey Vehicle (NSV) fitted with latest equipment and the maximum permissible roughness for purposes of this Test shall be [2,000 (two thousand)] mm for each kilometer. Ministry vide letter dated 13.11.2019 issued detail guidelines to use of Network Survey vehicle (NSV) for all the projects involving of 2/4/6/8 lane expressway, Strengthening. Para-5(a) of said Guideline stipulates that survey shall be conducted using NSV in the following sequences.
 - (1) Before the Start of the work.
 - (2) Before issue of provisional/Final completion certificate
 - (3) Every 6 months after completion of work.
- (iii) Tests for bridges: All major and minor bridges 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 Nondestructive Testing Techniques, at two spots in every span, to be chosen at random by the Authority's Engineer. Bridges with a span of 15 (fifteen) metres or more shall also be subjected to load testing.
- (iv) Other tests: The Authority's Engineer may require the Contractor 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, except tests as specified in clause 5, but shall include measuring the reflectivity of road markings and road signs; and

measuring the illumination level (lux) of lighting using requisite testing equipment.

- v) Environmental audit: The Authority's Engineer shall carry out a check to determine conformity of the Project Highway with the environmental requirements set forth in Applicable Laws and Applicable Permits.
- (vi) Safety Audit: The Authority's Engineer shall carry out, or cause to be carried out, a safety audit to determine conformity of the Project Highway with the safety requirements and Good Industry Practice.

3. Agency for conducting Tests

All Tests set forth in this Schedule-K shall be conducted by the Authority's Engineer or such other agency or person as it may specify in consultation with the Authority.

4. Completion Certificate

Upon successful completion of Tests, the Authority's Engineer shall issue the Completion Certificate in accordance with the provisions of Article 12.

- 5. The Authority Engineer will carry out tests with the following equipment at his own cost in the presence of Contractor's representative.

Sr. No.	Key metrics of Asset	Equipment to be used	Frequency of condition survey
1	Surface defects of pavement	Network Survey Vehicle (NSV)	a. Before the Start of work. b. Before issue of provisional/Final completion certificate c. Every 6 months after completion of work.
2	Roughness of pavement	Network Survey Vehicle (NSV)	
3	Strength of pavement	Falling Weight Deflectometer (FWD)	At least once a year
4	Bridges	Mobile Bridge Inspection Unit (MBU)	NA
5	Road signs	Retro-reflectometer	NA

Schedule-L
(See Clause 12.2)
Completion Certificate

- 1 I, (Name of the Authority's Engineer), acting as the Authority's Engineer, under and in accordance with the Agreement dated (the "Agreement"), for One-Time Improvement Between Dulte - Champhai Road (Nh-06) From Old Existing Chainage Km 70+000 To Km 92+165 & Km 106+000 To Km 146+450 (Single Lane) In The State Of Mizoram (the "Project Highway") on Engineering, Procurement and Construction, (EPC) basis through (Name of Contractor), hereby certify that the Tests in accordance with Article 12 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 service of the Users thereof.

- 2 It is certified that, in terms of the aforesaid Agreement, all works forming part of Project Highway have been completed, and the Project Highway is hereby declared fit for entry into operation on this the day of 20...., Scheduled Completed Date for which was the day of 20....

SIGNED, SEALED AND DELIVERED

For and on behalf of the Authority's Engineer by:

(Signature)

(Name)

(Designation) (Address)

Schedule - M

(See Clauses 14.6, 15.2 and 19.7)

Payment Reduction for Non-Compliance

1. Payment reduction for non-compliance with the Maintenance Requirements
 - (i) Monthly lump sum payments for maintenance shall be reduced in the case of non-compliance with the Maintenance Requirements set forth in Schedule-E.
 - (ii) Any deduction made on account of non-compliance with the Maintenance Requirements shall not be paid even after compliance subsequently. The deductions shall continue to be made every month until compliance is done.
 - (iii) The Authority's Engineer shall calculate the amount of payment reduction on the basis of weightage in percentage assigned to non-conforming items as given in Paragraph 2.
2. **Percentage reductions in lump sum payments on monthly basis**
 - (i) The following percentages shall govern the payment reduction:

S. No.	Item/Defect/Deficiency	Percentage
(a)	Carriageway/Pavement	
(i)	Potholes, cracks, other surface defects	15%
(ii)	Repairs of Edges, Rutting	5%
(b)	Road, Embankment, Cuttings, Shoulders	
(i)	Edge drop, inadequate cross fall, undulations, settlement, potholes, ponding, obstructions	10%
(ii)	Deficient slopes, raincuts, disturbed pitching, vegetation growth, pruning of trees	5%
(c)	Bridges and Culverts	
(i)	Desilting, cleaning, vegetation growth, damaged pitching, flooring, parapets, wearing course, footpaths, any damage to foundations	20%
(ii)	Any Defects in superstructures, bearings and sub-structures	10%

S. No.	Item/Defect/Deficiency	Percentage
(iii)	Painting, repairs/replacement kerbs, railings, parapets, guideposts/crash barriers	5%
(d)	Roadside Drains	
(i)	Cleaning and repair of drains	5%
(e)	Road Furniture	
(i)	Cleaning, painting, replacement of road signs, delineators, road markings, 200 m/km/5 th km stones	5%
(f)	Miscellaneous Items	
(i)	Removal of dead animals, broken down/accident vehicles, fallen trees, road blockades or malfunctioning of mobile crane	10%
(ii)	Any other Defects in accordance with paragraph 1.	5%
(g)	Defects in Other Project Facilities	5%

- (ii) The amount to be deducted from monthly lump-sum payment for non-compliance of particular item shall be calculated as under:

$$R = \frac{P}{100} \times (M1 \text{ or } M2) \times \frac{L1}{L}$$

Where,

P= Percentage of particular item/Defect/deficiency for deduction

M1= Monthly lump-sum payment in accordance para 1.2 above of this Schedule

M2= Monthly lump-sum payment in accordance para 1.2 above of this Schedule

L1= non-complying length L = Total length of the road,

R= Reduction (the amount to be deducted for non-compliance for a particular item/Defect/deficiency

The total amount of reduction shall be arrived at by summation of reductions for such items/Defects/deficiency or non-compliance.

For any Defect in a part of one kilometer, the non-conforming length shall be taken as one kilometer.

Schedule - N

(See Clause 18.1 (i))

Selection of Authority's Engineer

1. Selection of Authority's Engineer

- (i) The provisions of the Model Request for Proposal for Selection of Technical Consultants, issued by the Ministry of Finance in May 2009, or any substitute thereof shall apply for the selection of an experienced firm to discharge the functions and duties of an Authority's Engineer.
- (ii) In the event of termination of the Technical Consultants appointed in accordance with the provisions of Paragraph 1.1, the Authority shall appoint another firm of Technical Consultants forthwith and may engage a government-owned entity in accordance with the provisions of Paragraph 3 of this Schedule-N.

2. Terms of Reference

The Terms of Reference for the Authority's Engineer (the "TOR") shall substantially conform with Annex 1 to this Schedule N.

3. Appointment of Government entity as Authority's Engineer

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

Annex - I
(Schedule - N)
Terms of Reference for Authority's Engineer

1. Scope

- (i) These Terms of Reference (the "TOR") for the Authority's Engineer are being specified pursuant to the EPC Agreement dated..... (The "Agreement"), which has been entered into between the [name and address of the Authority] (the "Authority") and..... (the "Contractor")[#] for One-Time Improvement Between Dulte -Champhai Road (Nh-06) From Old Existing Chainage Km 70+000 To Km 92+165 & Km 106+000 To Km 146+450 (Single Lane) In The State Of Mizoram on Engineering, Procurement, Construction (EPC) basis, and a copy of which is annexed hereto and marked as Annex-A to form part of this TOR.

- In case the bid of Authority's Engineer is invited simultaneously with the bid of EPC project, then the status of bidding of EPC project only to be indicated

- (ii) The TOR shall apply to construction and maintenance of the Project Highway.

2. Definitions and interpretation

- (i) The words and expressions beginning with or in capital letters 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.
- (ii) 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.
- (iii) The rules of interpretation stated in Article 1 of the Agreement shall apply, mutatis mutandis, to this TOR.

3. General

- (i) The Authority's Engineer shall discharge its duties in a fair, impartial and efficient manner, consistent with the highest standards of professional integrity and Good Industry Practice.
- (ii) The Authority's Engineer shall perform the duties and exercise the authority in accordance with the provisions of this Agreement, but subject to obtaining prior written approval of the Authority before determining:
- i. any Time Extension;
 - ii. any additional cost to be paid by the Authority to the Contractor;
 - iii. the Termination Payment; or
 - iv. issuance of Completion Certificate or
 - v. any other matter which is not specified in (a), (b), (c) or (d) above and which creates a financial liability on either Party.
- (iii) The Authority's Engineer shall submit regular periodic reports, at least once every

month, to the Authority in respect of its duties and functions under this Agreement. Such reports shall be submitted by the Authority's Engineer within 10 (ten) days of the beginning of every month.

- (iv) The Authority's Engineer shall inform the Contractor of any delegation of its duties and responsibilities to its suitably qualified and experienced personnel; provided, however, that it shall not delegate the authority to refer any matter for the Authority's prior approval in accordance with the provisions of Clause 18.2.
- (v) The Authority's Engineer shall aid and advise the Authority on any proposal for Change of Scope under Article 13.
- (vi) 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 Authority's Engineer shall specify such meaning, scope and nature by issuing a reasoned written statement relying on good industry practice and authentic literature.

4. Construction Period

- (i) During the Construction Period, the Authority's Engineer shall review and approve the Drawings furnished by the Contractor along with supporting data, including the geo-technical and hydrological investigations, characteristics of materials from borrow areas and quarry sites, topographical surveys, and the recommendations of the Safety Consultant in accordance with the provisions of Clause 10.1 (vi). The Authority's Engineer shall complete such review and approval and send its observations to the Authority and the Contractor within 15 (fifteen) days of receipt of such Drawings; provided, however that in case of a Major Bridge or Structure, the aforesaid period of 15 (fifteen) days may be extended upto 30 (thirty) days. In particular, such comments shall specify the conformity or otherwise of such Drawings with the Scope of the Project and Specifications and Standards.
- (ii) The Authority's Engineer shall review and approve any revised Drawings sent to it by the Contractor and furnish its comments within 10 (ten) days of receiving such Drawings.
- (iii) The Authority's Engineer shall review and approve the Quality Assurance Plan submitted by the Contractor and shall convey its comments to the Contractor within a period of 21 (twenty one) days stating the modifications, if any, required thereto.
- (iv) The Authority's Engineer shall complete the review and approve of the methodology proposed to be adopted by the Contractor for executing the Works, and convey its comments to the Contractor within a period of 10 (ten) days from the date of receipt of the proposed methodology from the Contractor.
- (v) The Authority's Engineer shall grant written approval to the Contractor, where necessary, for interruption and diversion of the flow of traffic in the existing lane(s) of the Project Highway for purposes of maintenance during the Construction Period in accordance with the provisions of Clause 10.4.
- (vi) The Authority's Engineer shall review the monthly progress report furnished by the Contractor and send its comments thereon to the Authority and the Contractor within 7 (seven) days of receipt of such report.

- (vii) The Authority's Engineer shall inspect the Construction Works and the Project Highway and shall submit a monthly Inspection Report bringing out the results of inspections and the remedial action taken by the Contractor in respect of Defects or deficiencies. In particular, the Authority's Engineer shall include in its Inspection Report, the compliance of the recommendations made by the Safety Consultant.
- (viii) The Authority's Engineer shall conduct the pre-construction review of manufacturer's test reports and standard samples of manufactured Materials, and such other Materials as the Authority's Engineer may require.
- (ix) For determining that the Works conform to Specifications and Standards, the Authority's Engineer shall require the Contractor to carry out, or cause to be carried out, tests at such time and frequency and in such manner as specified in the Agreement and in accordance with Good Industry Practice for quality management. For purpose of this paragraph 4 (ix), the tests specified in the MORTH Specifications for Road and Bridge Works and respective Indian Roads Congress Standards/Guidelines/Manuals, together with any other Indian/International Standards mentioned therein including any modifications/substitutions thereof shall be deemed to be tests confirming to Good Industry Practice for quality management.
- (x) The Authority's Engineer shall witness all the quality control tests carried out by Contractor at its laboratory/main the site laboratory/field/plants. These include tests for all materials, mixes, products, etc. Authority's Engineer shall also witness all tests of finished products like bearing in the manufacturers' laboratory as mandated in respective standards. Authority's Engineer will also conduct review of quality control documents in respect manufactured of materials/finished products etc. as per IRC:SP:112.
- (xi) The timing of tests referred to in Paragraph 4 (ix), and the criteria for acceptance/rejection of their results shall be determined by the Authority's Engineer in accordance with the MORTH specifications for Road & Bridge works and respective Indian Roads Congress Standards/Guidelines/Manuals together with any other Indian/International Standards referred thereto. 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 Contractor for its own quality assurance in accordance with Good Industry Practice.
- (xii) In the event that results of any tests conducted under Clause 11.10 establish any Defects or deficiencies in the Works, the Authority's Engineer shall require the Contractor to carry out remedial measures.
- (xiii) The Authority's Engineer may instruct the Contractor to execute any work which is urgently required for the safety of the Project Highway, whether because of an accident, unforeseeable event or otherwise; provided that in case of any work required on account of a Force Majeure Event, the provisions of Clause 21.6 shall apply.
- (xiv) In the event that the Contractor fails to achieve any of the Project Milestones, the Authority's Engineer shall undertake a review of the progress of construction and identify potential delays, if any. If the Authority's Engineer shall determine that completion of the Project Highway is not feasible within the time specified in the Agreement, it shall require the Contractor 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 Contractor, the Authority's Engineer shall review the same and send its comments to the Authority and the Contractor forthwith.

- (xv) The Authority's Engineer shall obtain from the Contractor a copy of all the Contractor's quality control records and documents before the Completion Certificate is issued pursuant to Clause 12.2.
- (xvi) Authority's Engineer may recommend to the Authority suspension of the whole or part of the Works if the work threatens the safety of the Users and pedestrians. After the Contractor has carried out remedial measure, the Authority's Engineer shall inspect such remedial measures forthwith and make a report to the Authority recommending whether or not the suspension hereunder may be revoked.
- (xvii) In the event that the Contractor carries out any remedial measures to secure the safety of suspended works and Users, and requires the Authority's Engineer to inspect such works, the Authority's Engineer shall inspect the suspended works within 3 (three) days of receiving such notice, and make a report to the Authority forthwith, recommending whether or not such suspension may be revoked by the Authority.
- (xviii) The Authority's Engineer shall carry out, or cause to be carried out, all the Tests specified in Schedule-K and issue a Completion Certificate, as the case may be. For carrying out its functions under this Paragraph 4 (xviii) and all matters incidental thereto, the Authority's Engineer shall act under and in accordance with the provisions of Article 12 and Schedule-K.

5. Maintenance Period

- (i) The Authority's Engineer shall aid and advise the Contractor in the preparation of its monthly Maintenance Programme and for this purpose carry out a joint monthly inspection with the Contractor.
- (ii) The Authority's Engineer shall undertake regular inspections, at least once every month, to evaluate compliance with the Maintenance Requirements and submit a Maintenance Inspection Report to the Authority and the Contractor.
- (iii) The Authority's Engineer shall specify the tests, if any, that the Contractor 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 Contractor in this behalf.
- (iv) In respect of any defect or deficiency referred to in Paragraph 3 of Schedule- E, the Authority's Engineer 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.
- (v) The Authority's Engineer shall examine the request of the Contractor for closure of any lane(s) of the Project Highway for undertaking maintenance/repair thereof, and shall grant permission with such modifications, as it may deem necessary, within 5 (five) days of receiving a request from the Contractor. Upon expiry of the

permitted period of closure, the Authority's Engineer shall monitor the reopening of such lane(s), and in case of delay, determine the Damages payable by the Contractor to the Authority under Clause 14.5.

6. Determination of costs and time

- (i) The Authority's Engineer shall determine the costs, and/or their reasonableness, that are required to be determined by it under the Agreement.
- (ii) The Authority's Engineer shall determine the period of Time Extension that is required to be determined by it under the Agreement.
- (iii) The Authority's Engineer shall consult each Party in every case of determination in accordance with the provisions of Clause 18.5.

7. Payments

- (i) The Authority's Engineer shall withhold payments for the affected works for which the Contractor fails to revise and resubmit the Drawings to the Authority's Engineer in accordance with the provisions of Clause 10.2 (iv) (d).
- (ii) Authority's Engineer shall -
 - (a) within 10 (ten) days of receipt of the Stage Payment Statement from the Contractor pursuant to Clause 19.4, determine the amount due to the Contractor and recommend the release of 90 (ninety) percent of the amount so determined as part payment, pending issue of the Interim Payment Certificate; and
 - (b) within 15 (fifteen) days of the receipt of the Stage Payment Statement referred to in Clause 19.4, deliver to the Authority and the Contractor an Interim Payment Certificate certifying the amount due and payable to the Contractor, after adjustments in accordance with the provisions of Clause 19.10.
- (iii) The Authority's Engineer shall, within 15 (fifteen) days of receipt of the Monthly Maintenance Statement from the Contractor pursuant to Clause 19.6, verify the Contractor's monthly statement and certify the amount to be paid to the Contractor in accordance with the provisions of the Agreement.
- (iv) The Authority's Engineer shall certify final payment within 30 (thirty) days of the receipt of the final payment statement of Maintenance in accordance with the provisions of Clause 19.16.

8. Other duties and functions

The Authority's Engineer shall perform all other duties and functions as specified in the Agreement.

9. Miscellaneous

- (i) A copy of all communications, comments, instructions, Drawings or Documents sent

by the Authority's Engineer to the Contractor pursuant to this TOR, and a copy of all the test results with comments of the Authority's Engineer thereon, shall be furnished by the Authority's Engineer to the Authority forthwith.

- (ii) The Authority's Engineer 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.
- (iii) Within 90 (ninety) days of the Project Completion Date, the Authority's Engineer shall obtain a complete set of as-built Drawings, in 2 (two) hard copies and in micro film form or in such other medium as may be acceptable to the Authority, reflecting the Project Highway as actually designed, engineered and constructed, including an as-built survey illustrating the layout of the Project Highway and setback lines, if any, of the buildings and structures forming part of Project Facilities; and shall hand them over to the Authority against receipt thereof.
- (iv) The Authority's Engineer, if called upon by the Authority or the Contractor or both, shall mediate and assist the Parties in arriving at an amicable settlement of any Dispute between the Parties.
- (v) The Authority's Engineer shall inform the Authority and the Contractor of any event of Contractor's Default within one week of its occurrence.

Schedule - O

(See Clauses 19.4 (i), 19.6 (i), and 19.8 (i))

Forms of Payment Statements

1. Stage Payment Statement for Works

The Stage Payment Statement for Works shall state:

- a. the estimated amount for the Works executed in accordance with Clause 19.3 (i) subsequent to the last claim;
- b. amounts reflecting adjustments in price for the aforesaid claim;
- c. the estimated amount of each Change of Scope Order executed subsequent to the last claim;
- d. amounts reflecting adjustment in price, if any, for (c) above in accordance with the provisions of Clause 13.2 (iii) (a);
- e. total of (a), (b), (c) and (d) above;
- f. Deductions:
 - i. Any amount to be deducted in accordance with the provisions of the Agreement except taxes;
 - ii. Any amount towards deduction of taxes; and
 - iii. Total of (i) and (ii) above.
- g. Net claim: (e) - (f) (iii);
- h. The amounts received by the Contractor upto the last claim:
 - i. For the Works executed (excluding Change of Scope orders);
 - ii. For Change of Scope Orders, and
 - iii. Taxes deducted

2. Monthly Maintenance Payment Statement

The monthly Statement for Maintenance Payment shall state:

- (a) the monthly payment admissible in accordance with the provisions of the Agreement;
- (b) the deductions for maintenance work not done;
- (c) net payment for maintenance due, (a) minus (b);
- (d) amounts reflecting adjustments in price under Clause 19.12; and
- (e) amount towards deduction of taxes

3. Contractor's claim for Damages

Note: The Contractor shall submit its claims in a form acceptable to the Authority.

Schedule - P
(See Clause 20.1)
Insurance

1. Insurance during Construction Period

- (i) The Contractor shall effect and maintain at its own cost, from the Appointed Date till the date of issue of the Completion Certificate, the following insurances for any loss or damage occurring on account of Non Political Event of Force Majeure, malicious act, accidental damage, explosion, fire and terrorism:
 - (a) insurance of Works, Plant and Materials and an additional sum of [15 (fifteen)] per cent of such replacement cost to cover any additional costs of and incidental to the rectification of loss or damage including professional fees and the cost of demolishing and removing any part of the Works and of removing debris of whatsoever nature; and
 - (b) insurance for the Contractor's equipment and Documents brought onto the Site by the Contractor, for a sum sufficient to provide for their replacement at the Site.
- (ii) The insurance under sub para (a) and (b) of paragraph 1(i) above shall cover the Authority and the Contractor against all loss or damage from any cause arising under paragraph 1.1 other than risks which are not insurable at commercial terms.

2. Insurance for Contractor's Defects Liability

The Contractor shall effect and maintain insurance cover of not less than 15% of the Contract Price for the Works from the date of issue of the Completion Certificate until the end of the Defects Liability Period for any loss or damage for which the Contractor is liable and which arises from a cause occurring prior to the issue of the Completion Certificate. The Contractor shall also maintain other insurances for maximum sums as may be required under the Applicable Laws and in accordance with Good Industry Practice.

3. Insurance against injury to persons and damage to property

- (i) The Contractor shall insure against its liability for any loss, damage, death or bodily injury, or damage to any property (except things insured under Paragraphs 1 and 2 of this Schedule or to any person (except persons insured under Clause 20.9), which may arise out of the Contractor's performance of this Agreement. This insurance shall be for a limit per occurrence of not less than the amount stated below with no limit on the number of occurrences.

The insurance cover shall be not less than: Rs. [*****]

- (ii) The insurance shall be extended to cover liability for all loss and damage to the Authority's property arising out of the Contractor's performance of this Agreement excluding:
 - (a) the Authority's right to have the construction works executed on, over, under, in or through any land, and to occupy this land for the Works; and
 - (b) damage which is an unavoidable result of the Contractor's obligations

to execute the Works.

4. Insurance to be in joint names

The insurance under paragraphs 1 to 3 above shall be in the joint names of the Contractor and the Authority.

Schedule-Q

(See Clause 14.10)

Tests on Completion of Maintenance Period

1. Riding Quality test:

Riding quality test: Riding quality of each lane of the carriageway shall be checked with the help of a calibrated bump integrator/NSV and the maximum permissible roughness for purposes of this Test shall be [2,200 (two thousand and two hundred only)] mm for each kilometre.

2. Visual and physical test:

The Authority's Engineer shall conduct a visual and physical check of construction to determine that all works and equipment forming part thereof conform to the provisions of this Agreement. The physical tests shall include measurement of cracking, rutting, stripping and potholes and shall be as per the requirement of maintenance mentioned in Schedule-E.

Schedule-R

(See Clause 14.10)

Taking Over Certificate

I,(Name and designation of the Authority's Representative) under and in accordance with the Agreement dated(the "Agreement"), for ONE-TIME IMPROVEMENT BETWEEN DULTE -CHAMPHAI ROAD (NH-06) FROM OLD EXISTING CHAINAGE KM 70+000 TO KM 92+165 & KM 106+000 TO KM 146+450 (SINGLE LANE) IN THE STATE OF MIZORAM on Engineering, Procurement and Construction (EPC) basis through.....(Name of Contractor), hereby certify that the Tests on completion of Maintenance Period in accordance with Article 14 of the Agreement have been successfully undertaken to determine compliance of the Project Highway with the provisions of the Agreement and I hereby certify that the Authority has taken over the Project highway from the Contractor on this day.....

SIGNED, SEALED AND DELIVERED

(Signature)

(Name and designation of Authority's

Representative) (Address)

SCHEDULE (S)
(See Clause 26.1 (iii))

Procedure for Dispute Resolution Board

The parties to the Contract Agreement mutually agree as follows:

- (1) The Board shall comprise of three Members having experience in the field of construction or have been involved in the Works related to construction and with the interpretation of contractual documents. One Member shall be selected by each of the Employer and the Contractor from the list maintained by NHAI hosted on its website (www.nhai.gov.in). In the event the parties fail to select the member within 28 days of the date of the signing of Contract Agreement, in that eventuality, upon the request of either or both parties such Member shall be selected by SAROD within 14 days. The third Member shall be selected by the other two members from the same list. If the two Members selected by or on behalf of the parties fail to select the third Member within 14 days after the later of their selections, then upon the request of either or both parties such third Member shall be selected by SAROD within 14 days. The third Member shall serve as Chairman of the Board.
- (2) The Board shall be constituted when each of the three Board Members has signed a Board Members declaration of Acceptance as required by the DRB's rules and procedures (which, along with the declaration of acceptance form, are attached as Annexure herewith).
- (3) In the event of death, disability, or resignation of any Member, such Members shall be replaced in the same manner as the Member being replaced was selected. If for any other reason, a Member fails or is unable to serve, the Chairman (or failing the action of the Chairman then either of the other members) shall inform the Parties and such non-serving Member shall be replaced in the same manner as the Member being replaced was selected. Any replacement made by the parties shall be completed within 28 days after the event giving rise to the vacancy of the Board, failing which the replacement shall be made by SAROD in the same manner as described above. Replacement shall be considered complete when the new Member signs the Board Member's Declaration of Acceptance. Throughout any replacement process, the Members not being replaced shall continue to serve and the Board shall continue to function and its activities shall have the same force and effect as if the vacancy had not occurred, provided, however, that the Board shall not conduct a hearing nor issue a decision until the replacement is completed.
- (4) If either the Employer or the Contractor is dissatisfied with any decision of the Board, and/or if the Board fails to issue its decision within 56 days after receipt of all the pleadings (along with the supporting documents) of the parties by the Chairman of the Board or any extension mutually agreed upon by the Employer and the Contractor, in such a case, either the Employer or the Contractor may, within 28 days after his receipt of

the decision, or within 28 days after the expiry of the said period, as the case may be, give notice to the other party, with a copy for information to the Authority engineer, of his intention to refer the matter to the Conciliation Committee of Independent Experts (CCIE) of the Authority for Conciliation/amicable settlement.

- (5) It is mandatory to refer all the disputes to DRB before issuance of completion certificate and satisfactory completion of punch list items. No dispute shall be entertained after completion of aforementioned date.
- (6) If the Board has issued a decision to the employer and the Contractor within the said 56 days or any extension mutually agreed upon by the Employer and the Contractor and no notice of intention to commence Conciliation by the Conciliation Committee of Independent Experts (CCIE) of the Authority for Conciliation/amicable settlement as to such dispute has been given by either the Employer or the Contractor within 28 days after the parties received such decision from the Boards, the decision shall become final and binding upon the employer and Contractor.
- (7) Whether or not it has become final and binding upon the Employer and the Contractor, a decision shall be admissible as evidence in any subsequent dispute resolution procedure, including any arbitration or litigation having any relation to the dispute to which the decision relates.
- (8) All decision of DRB which have become final and binding or till they have been reversed in subsequent conciliation/Arbitration process shall be implemented by the parties forthwith. Such implementation shall also include any relevant action of the Authority engineer.
- (9) If during the Contract period, the Employer and the Contractor are of the opinion that the Disputes Resolution Board is not performing its functions properly, the Employer and the Contractor may together disband the Disputes Resolution Board and reconstitute it. In that case, a new board shall be selected in accordance with the provisions applying to the selection of the original Board as specified above, except that words “within 28 days after the signing of this Contract Agreements” shall be replaced by the words “within 28 days after the date on which the notice disbanding the original Board become effective”.
- (10) The Employer and the Contractor shall jointly sign a notice specifying that the Board shall stand disbanded with effect from the date specified in the notice. The notice shall be posted by email to each Member of the Board. A Member shall be deemed to have received the email even if he refuses to have received the same.
- (11) All other terms and conditions of the original Contract Agreement shall remain unaltered/unaffected and the parties shall remain bound by terms and conditions as contained therein.

Disputes Resolution Board's Rules and Procedures

1. Except for providing the services required hereunder, the Board Members shall not give any advice to either party or to the Authority engineer concerning conduct of the Works. The Board Members:
 - (a) Shall have no financial interest in any party to the Contract, or the Authority engineer, or a financial interest in the contract except for payment for services on the Board.
 - (b) Shall have had no previous employment by, or financial ties to, any party to the Contract Agreement, or the Authority engineer, except for fee based consulting services/advisers on other projects, and/or be Retired Government Officers (not connected in whole or part with the project), all of which must be disclosed in writing to both parties prior to appointment to the Board.
 - (c) Shall have disclosed in writing to both parties prior to appointment to the Board any and all recent or close professional or personal relationships with any director, officer, or employee of any party to the Contract, or the Authority engineer, and any and all prior involvement in the project to which the Contract relates;
 - (d) Shall not, while Board member, be employed whether as a consultant or adviser or otherwise by either party to the Contract, or the Authority engineer, except as a board member, without the prior consent of the parties and the other Board Members;
 - (e) Shall not, while a Board Member, engage in discussion or make any agreement with any party to the Contract, or with the Authority engineer, regarding employment whether as a consultant or otherwise whether after the Contract is completed or after service as a Board Member is completed.
 - (f) Shall remain and be impartial and independent of the parties and shall disclose in writing to the Employer, the Contractor and one another any fact or circumstance which might be such as to cause either the Employer or the Contractor to question the continued existence of the impartiality and independence required of Board Members; and
 - (g) Shall be fluent in the language of the Contract.
2. Except for its participation in the Board's activities as provided in the Contract Agreement and in this Agreement none of the Employer, the Contractor, and or the Authority engineer shall solicit advice or consultation from the Board or the Board Members on matters dealing with the conduct of the Works.
3. The Contractor shall:
 - (a) Furnish to each Board member one copy of all documents which the Board may request including Contract Agreement, progress reports and other documents pertinent to the performance of the Contract Agreement.
 - (b) In cooperation with the Employer, coordinate the site visits of the Board, including Conference facilities, and secretarial and copying service.
4. The Board shall begin its activities following the signing of a Board Member's Declaration of Acceptance by all three Board Members, and it shall terminate these activities as set forth below:
 - (a) The Board shall terminate its regular activities when either (I) issuance of completion certificate and completion of punch list items or (II) the parties have terminated the contract and when, in either case, the Board has communicated to the parties and the Authority engineer its decision on all disputes previously referred to it.
 - (b) Once the Board has terminated its regular activities as provided by the previous paragraph, the Board shall remain available to process any dispute referred to it by either party. In case of such a referral, Board Members shall receive payments as provided in paragraphs 7 (a) (ii), (iii) and (iv).

5. Board Members shall not assign or subcontract any of their works under these Rules and Procedures.
6. The Board Members are Independent and not employees or agents of either the Employer or the Contractor.
7. Payments to the Board Members for their services shall be governed by the following provisions
 - (a) Each Board Member will receive payments as follows:
 - i. A retainer fee per calendar month as specified in the schedule of fee made part of this Schedule and its revision from time to time. This retainer fee shall be considered as payment in full for:
 - (A) Being available, on 7 days' notice, for all hearings, Sites, and other meetings of the Board.
 - (B) Being available, on 7 days' notice, for all hearing, and maintaining relevant files.
 - (C) All officer and overhead expenses such as secretarial services, photocopying and office supplies (but not include telephone calls, faxes and telexes) INCURRED IN CONNECTION WITH THE DUTIES AS A Board Member.
 - ii. A daily fee as specified in the schedule of fee in respect of fee for site visit & meeting, fee for meeting/hearing not at site and extra charges for days (max. of 02 days for travel on each occasion) other than hearing/meeting days.
 - iii. Expenses, in addition to the above, all reasonable and necessary travel expenses (including economy class air fare, subsistence, and other direct travel expenses). Receipts for all expenses in excess of Rs. 2000/- (Rupees Two Thousand only) shall be provided.
 - iv. Reimbursement of any taxes that may be levied on payments made to the Board Member pursuant to this paragraph 7.
 - (b) The retainer fee and other fees shall remain fixed for the period of each Board Member's term until revised by NHAI.
 - (c) Phasing out of monthly retainer fee, Beginning with the next month after the completion certificate (or, if there are more than one, the one issued last) has been issued, the Board members shall receive only one-third of the monthly retainer fee till next one year. Beginning with the next month after the Board has terminated its regular activities pursuant to paragraph 4 (a) above, the Board members shall no longer receive any monthly retainer fee.
 - (d) Payments to the Board Members shall be shared equally by the Employer and the Contractor. The concerned Project Implementation Unit (PIU) of Employer shall pay members' invoices within 30 calendar days after receipt of such invoices and shall invoice the Contractor for one-half of the amounts of such invoices. The Contractor shall pay such invoices within 30 days' time period after receipt of such invoices.
8. Board site visits:
 - (a) The Board shall visit the Site and meet the representatives of the Employer and the Contractor hand the Authority engineer at regular intervals, at times of critical construction events, at the written request of either party, and in any case not less than 6 times in any period of 12 months. The timing of Site visits shall be as agreed among the Employer, the Contractor and the Board, but failing agreement shall be fixed by the Board.
 - (b) Site visits shall include an informal discussion of the status of the construction of the Works. Site visits shall be attended by personnel from the Employer, the Contractor and the Authority engineer.
 - (c) At the conclusion of such Site visit, the Board shall prepare a report covering its activities during the visit and shall send copies to the parties and to the Authority engineer.
9. Procedure for Dispute Referral to the Board:
 - (a) If either party objects to any action or inaction of the other party or the Authority engineer, the objecting party may file a written Notice of Dispute to the other party with a copy to the Authority engineer stating that it is given pursuant to the Agreement and state clearly and in details the basis of the dispute
 - (b) The party receiving the Notice of Dispute will consider it and respond to it in writing within 14 days after receipt.
 - (c) This response shall be final and conclusive on the subject, unless a written appeal to the

response is filed with the responding party within 10 days after receiving the response and call upon Authority engineer to mediate and assist the parties in arriving an amicable settlement thereof. Both parties are encouraged to pursue the matter further to attempt to settle the dispute.

- (d) If the Authority engineer receiving the Notice of Dispute fails to provide a written response within 14 days after receipt of such Notice or failing mediation by Authority engineer, either party may require such dispute to be referred to the Board, either party may refer the dispute to the Board by written Request to the Board. The Request for decision shall state clearly and in full detail the specific issues of the dispute (s) to be considered by Board and shall be addressed to the Chairman of the Board, with copies to the other Board Members, the other party, and the Authority engineer and it shall state that it is made pursuant to this Agreement.
- (e) When a dispute is referred to the Board, and the Board is satisfied that the dispute requires the Board's assistance, the Board decides when to conduct a hearing on the dispute. The Board may request that written documentation and arguments from both parties be submitted to each Board Member before the hearing begins. The parties shall submit insofar as possible agreed statements of the relevant facts.
- (f) During the hearing, the Contractor, the Employer, and the Authority engineer shall each have ample opportunity to be heard and to offer evidence. The Board's decision for resolution of the dispute will be given in writing to the Employer, the Contractor and the Authority engineer as soon as possible, and in any event not more than 56 days or any mutually extended period between the Employer and the Contractor. The time period of 55 days of issuance of DRB decision will reckon/start from the day of first hearing that begins after submission of complete pleadings (including supporting documents, if any) by the parties.

10. Conduct of Hearings:

- (a) Normally hearings will be conducted at the Site, but any location that would be more convenient and still provide all required facilities and access to necessary documentation may be utilized by the Board. Private session of the Board may be held at any cost effective location convenient to the Board.

Video recordings of all hearings shall invariably be made

- (b) The Employer, the Authority engineer and the Contractor shall be given opportunity to have representatives at all hearings. Parties should refrain to bring any Advocate/Law Firm during DRB hearings.
 - (c) During the hearings, no Board Member shall express any opinion concerning the merit of the respective agreements of the parties.
 - (d) After the hearings are concluded, the Board shall meet privately to formulate its decision. The private meeting (s) of the Board shall not exceed 3 sittings. All Board deliberations shall be conducted in private, with all Members' individual views kept strictly confidential. The Board's decisions, together with an explanation of its reasoning shall be submitted in writing to both parties and to the Authority engineer. The decision shall be based on the pertinent contract provisions, applicable laws and regulations and the facts and circumstances involved in the dispute.
 - (e) The Board shall make every effort to reach a unanimous decision. If this proves impossible the majority shall decide and the dissenting Member may prepare a written minority report together with an explanation of its reasoning for submission to both parties and to the Authority engineer.
11. In all procedural matters, including the furnishing of written documents and arguments relating to disputes, site visits and conduct of hearings, the Board shall have full and the final authority. If a unanimous decision on any such matter proves impossible, the majority shall prevail.
12. After having been selected and where necessary approved each Board Member shall sign two copies of the following declaration and make one copy available each to the Employer and to the Contractor.

"BOARD MEMBER'S DECLARATION OF ACCEPTANCE"

WHEREAS

- (a) A Contract agreement (the Contract) for the_____project [fill in the name of project] has been signed on_____(fill in date] between_____[name of Employer) and_____(name of Contractor] (the Contractor). ;
- (b) The provisions of Agreement and Dispute Resolution Board's rules and procedure provided for establishment and operation of Dispute Resolution Board (DRB).
- (c) The undersigned has been selected to serve as a Board Member on said Board; NOW

THEREFORE, the undersigned Board Member hereby declares as follows:

- 1. I accept the selection as a Board Member and agree to serve on the Board and to be bound by the provisions of Contract agreement and rules and procedure provided for establishment and operation of Dispute Resolution Board (ORB).
- 2. With respect to paragraph1 of Dispute Resolution Board's Rules and Procedure. saidAnnex A, I declare
 - (a) that I have no financial interest of the kind referred to in subparagraph (a):
 - (b) that I have had no previous employment nor financial tics of the kind referred to in subparagraph (b); and
 - (c) that I have made to both parties any disclosures that may be required by sub-paragraphs (b) and (c).
- 3. I declare that I have -no. of Arbitrations (list enclosed) and____no. of DRBS (list Enclosed) in progress and that I will give sufficient time for the current assignment.

BOARD MEMBER

_____(insert name of Board Member) Date:

Schedule of expenses and fees payable to the Member (s) of Dispute Resolution Board (DRB)

The fee and other expenses payable to the Members of DRB shall be as under:-

S. No	PARTICULAR	AMOUNT PAYBLE
1	Retainer-ship fee, secretarial assistance and incidental charges (telephone, fax, postage etc.)	Rs. 50,000/- per month for one package and maximum of Rs. 75,000/- per month for 2 or more packages
2(i)	Fee for site visit or meetings at site	Rs. 25,000/- per day
(ii)	Fee for meetings/hearings not at site	Rs. 10,000/- per day
3	Traveling expenses	Economy class by air, AC first class by train and AC taxi by road
4	Lodging & Boarding	Rs.15,000/- per day (Metro Cities); or Rs. 10,000/- per day (in other cities); or Rs. 5,000/- per day (own arrangement)
5	Extra charges for days other than hearing/meeting days (travel days maximum of 2 days on each Occasion)	Rs.5,000/-
6	Local conveyance	Rs.2,000/-

Notes:

- (i) Lodging, boarding and travelling expenses will be allowed only for those members who are residing 100 kms away from the place of meeting.
- (ii) Delhi, Mumbai, Chennai, Kolkata, Bangalore and Hyderabad shall be considered as Metro Cities
- (iii) The above schedule of fee and expenses shall be applicable on or after the date of issue of this circular.
- (iv) The expenses are to be shared equally by the parties i.e. Employer and Contractor.

Appendix-I1:
Arbitration Rules of the Society for Affordable Redressal of Disputes
(SAROD)(SAROD'ARBITRATION RULES)
Under Clause 44.3.1

Rule	INDEX	ARBITRATION RULES OF SAROD
1.	Scope of Application	
2.	Definitions	
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4.	Commencement of Arbitration	
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6.	Filing of Case Statements	
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PREAMBLE

In order to seek speedy, affordable, just and reasonable Redressal of Dispute/Differences between BRO/MoRTH and Concessionaire/Contractor arising out of and during the course of execution of various contracts, a Society for Affordable Redressal of Disputes (SAROD) has been formed as a Society under Societies Registration Act, 1860 With registration No S/RS SW/044/2013 it has been formed by National Highways Authority of India (NHAI) and National Highways Builders federation (NHBF) with founding members as mentioned in the Memorandum of Association of SAROD.

SAROD ARBITRATION RULES

Rule 1- Scope of Application

- 1.1 Where any agreement, submission or reference provides for arbitration at the Society for Affordable Redressal of Disputes ("SAROD"), or under the Arbitration Rules of the SAROD and where the case is a domestic arbitration shall be conducted in accordance With the following Rules, or such Rules as amended by the SAROD where the amendments take effect before the commencement of the Arbitration. Parties may adopt following clause for inclusion in the contract:-

"Any dispute or difference whatsoever arising between the parties and of or relating to the Construction, interpretation, application, meaning, scope, operation or effect of this contract or the validity or the breach thereof, shall be settled by arbitration in accordance with the rules of arbitration of the "SAROD" and the award made in pursuance thereof shall be final and binding on the parties subject to Provisions of The Arbitration and Conciliation Act, 1996.

- 1.2 These rules shall come into effect from the day of approval by Governing Body of SAROD.

Rule 2 - Definitions

- 2.1 These Rules shall be referred to as the SAROD Arbitration Rules".

- 2.2 In these Rules:

"Act" means the 'Arbitration and Conciliation Act 1996' of India and any statutory Modifications or re-enactments thereof.

"SAROD" means the Society for Affordable Redressal of Disputes.

"SAROD Arbitrator Panel" means the list of persons admitted to serve as arbitrators under these Rules.

"NHAI" means National Highways Authority of India.

"NHBF" means the National Highways Builders Federation.

"GOVERNING BODY" means Governing Body of SAROD as defined in Article 9 of Memorandum of Association.

"PRESIDENT" means President of Government Body of SAROD as defined in Rules & Regulation of SAROD

"SECRETARY" means Secretary of SAROD as defined in Rules & Regulation of SAROD.

TRIBUNAL" means either a Sole Arbitrator or all arbitrators when more than one is appointed

PARTY" means a party to an arbitration agreement.

Arbitration" means submission of pleadings, defence statement etc. by E mail and holding of proceedings via video conferencing.

Rule 3- Notice, Calculation of periods of Time

- 3.1 For the purposes of these Rules, any notice, including a notification, communication or proposal, is deemed to have been received if it is physically delivered to the addressee or if it is delivered at his habitual residence, place of business or mailing address, or, if none of these can be found after making reasonable inquiry, then at the addressee's last-known residence or place of business. Notice shall be deemed to have been received on the day it is so delivered,.
- 3.2 For the purposes of calculating a period of time under these Rules, such period shall begin to run on the day following the day when a notice, notification, communication or proposal is received. If the last day of such period is an official holiday or a non- business day at the residence or place of business of the addressee, the period is extended until the first business day which follows. Gazetted public holidays or non- business days occurring during the running of the period of time are included in calculating the period.
- 3.3 Without prejudice to the effectiveness of any other form of written communication, written communication may be made by fax. E-mail or any other means of electronic transmission effected to a number, address or site of a party.
- 3.4 The transmission is deemed to have been received on the day of transmission.

Rule 4 - Commencement of Arbitration

- 4.1 Any party wishing to commence arbitration under these Rules ("The Claimant") shall be with the Secretary and serve on the other party ("the Respondent"), a written Notice of Arbitration ("the Notice of Arbitration") which shall include the following:
 - a. a request that the dispute be referred to arbitration:

- b. the names, addresses, telephone numbers, fax numbers and email addresses of the parties to the dispute.
 - c. a reference to the arbitration clause or any separate arbitration agreement that is invoked and provide a copy of the arbitration clause or arbitration agreement :
 - d. a reference to the contract out of which the dispute arises and provide a copy of the contract where possible:
 - e. a brief statement describing the nature and circumstances of the dispute:
 - f. the relief or remedy sought: including the amount of claim if quantifiable at the time the Notice of Arbitration is filed;
 - g. a proposal as to the number of arbitrators (i.e. one or three), if the parties have not previously agreed on the number; and
 - h. the name of the Claimant's nominated arbitrator.
- 4.2 A filing fee of Rs. 10,000/- (Ten thousand or any amount decided by Governing Body from time to time is payable at the time of filing the Notice of arbitration.
- 4.3 The date of filing of the Notice of Arbitration with the Secretary is the date of commencement of the arbitration for the purpose of these Rules.

Rule 5 - Response by Respondent

- 5.1 Within 14 days of receipt of the Notice of Arbitration, the Respondent shall file with the Secretary and serve upon the Claimant, a Response including
- a. A confirmation or denial of all or part of the claims;
 - b. Brief statement of the nature and circumstances of any envisaged counterclaims;
 - c. A comment in response to any proposals contained in the Notice of Arbitration; and
 - d. The name of the respondent's nominated arbitrator.
- 5.2 A filing fee of Rs. 10,000/- or any amount decided by Governing Body from time to time is payable at the time of filing the Response.
- 5.3 In case parties have objection to the jurisdiction of Arbitral Tribunal, such objection shall be raised not less than 15 days of the commencement of Arbitration proceedings failing which it will be deemed that parties have waived their right to objection.

Rule 6 Filing of Case Statements

- 6.1 Within 30 days after the filing of the Notice of Arbitration, the claimant must file with the Secretary and serve on the Respondent, a Statement of Claimant's Case along with all documents to be relied upon by the Claimant

- 6.2 Within 30 days after the service of the statement of Claimant's Case, the Respondent must file with the Secretary and serve on the Claimant, a statement of respondent's defence and counterclaim (if any) along with all documents to be relied upon by the Respondent.
- 6.3 Within 30 days after the service of the statement of Respondent's defence, if the Claimant intends to challenge anything in the statement of Respondent's defence and/or counterclaim, the Claimant must then file with the Secretary and serve on the Respondent, a statement of claimant's reply and if necessary, defence to counterclaim.
- 6.4 No further case statement may be filed without the leave of the Tribunal or if a Tribunal has not been appointed, the Secretary.
- 6.5 The Tribunal or if a Tribunal has not been appointed, the Secretary, may upon the written application of a party, extend the time limits provided under this Rule.
- 6.6 The party required to file a case statement must at the same time deposit with the Secretary for eventual transmission to the Tribunal an additional copy or additional copies of the case statement, according to the number of arbitrators constituting or who will constitute the Tribunal

Rule 7- Contents of Case Statements

- 7.1 The case statements contain the detailed particulars of the party's claim, defence or counterclaim and must thus contain a comprehensive statement of the facts and contentions of law supporting the party's position
- 7.2 It must
 - a. Set out all items of relief or other remedies sought together with the amount of all quantifiable claims and detailed calculations.
 - b. State fully its reasons for denying any allegation or statement of the other party.
 - c. State fully its own version of events if a party intends to put forward a version of events different from that given by the other party.
- 7.3 A case statement must be signed by or on behalf of the party making it.

Rule 8 - Default in Filing and Serving Case Statements

- 8.1 If the Claimant fails within the time specified under these Rules or as may be fixed by the Tribunal or by the Secretary, to submit its Statement of Case, the Tribunal or if a Tribunal has not been appointed, the Governing Body may issue an order for the termination of the arbitral proceedings or make such other directions as may be appropriate in the circumstances.
- 8.2 If the Respondent fails to submit a Statement of Respondent's Defence, the Tribunal may nevertheless proceed with the arbitration and make the award.

Rule 9 - Further Written Statements

- 9.1 The Tribunal will decide which further written statements, in addition to the case statement(s) already filed, are required from the parties and shall fix the periods of time for giving. Filing and serving such statements
- 9.2 All such further statements must be given to the Tribunal, filed with the Secretary and served on the Claimant or Respondent, whichever is applicable.

Rule 10 - SARO to Provide Assistance

- 10.1 At the request of the Tribunal or either party, the Secretary will render such assistance as is required for the conduct of the arbitration, including arranging for facilities, suitable accommodation for sittings of the Tribunal, secretarial assistance or interpretation of these rules.
- 10.2 Any additional expenses incurred or to be incurred for any such arrangements shall be borne by the parties.

Rule 11 - Appointment of Tribunal

- 11.1 The disputes shall be decided by a Sole Arbitrator when the total claim of dispute is Rs. 3 Crores or less.
- 11.2 In all cases of disputes claimed for more than Rs. 3 Crores, the tribunal shall consist of odd number of arbitrator to be nominated by the parties. The Presiding Arbitrator shall be appointed by the Arbitrator nominated by the parties from amongst the panel maintained by SAROD for deciding the Presiding Arbitrator a draw of lots can be carried out from amongst the names suggested by the Arbitrators nominated by the Parties. The eligibility criteria for empanelment of Arbitrators will be decided by the Governing Body.

- 11.3 If a sole Arbitrator is to be appointed the Governing Body will appoint the Arbitrator within 21 days from the date the Respondent's Statement of Defence and Counterclaim (if any) is filed or falls due, whichever is earlier. The Governing Body will appoint the Arbitrator from the panel of Arbitrators by draw of lots,
- 11.4 Arbitrator Presiding Arbitrator to be appointed under these Rules shall be a person on the SAROD Arbitration panel as at the date of the appointment,
- 11.5 In the event of any party failing to appoint Arbitrator within 30 days of receipt of the notice of Arbitration, the Governing Body shall appoint the Arbitrator or Presiding Arbitrator as the case may be by a draw of lots.

Rule 12- Multiparty appointment of the Tribunal

- 12.1 If there are more than 2 parties in the arbitration, the parties shall agree on the procedure for appointing the Tribunal within 21 days of the receipt of the Notice of Arbitration
- 12.2 If the parties are unable to do so, upon the lapse of the 21 days time period mentioned herein, the Tribunal shall be appointed by the Governing Body as soon as practicable.

Rule 13 - Appointment of Substitute Arbitrator

In the event of the death or resignation of any of the arbitrators, a substitute arbitrator must be appointed by the same procedure as in Rule 11 by which the arbitrator concerned was appointed, failing which, the Governing Body will make the appointment.

Rule 14 - Independence and Impartiality of the Tribunal

- 14.1 The Tribunal conducting arbitration under these Rules shall be and remain at all times independent and impartial, and shall not act as advocate for any party.
- 14.2 A prospective arbitrator shall disclose to those who approach him in connection with his possible appointment, any circumstances likely to give rise to justifiable doubts as to his impartiality or independence.
- 14.3 An arbitrator, once nominated or appointed, shall disclose any such circumstance referred to in Rule 14.2 to the Secretary and or to all parties.

Rule 15 - Code of Ethics for Arbitrators

An Arbitrator is a fountain of justice and emblem of equity, fairness and good conscience therefore he/she is expected to exhibit a noble conduct. The code of conduct prescribed by the Governing Body has to be adopted.

Appointment

- 15 .1 A prospective arbitrator shall accept an appointment only if he is fully satisfied that he is able to discharge his duties without bias, he has an adequate knowledge of the language of the arbitration, and he is able to give to the arbitration the time and attention which the parties are reasonably entitled to expect,
- 15.2 In this code, the masenhnemeludes the feminine.

Disclosure

- 15.3 A prospective arbitrator shall disclose, all facts or circumstances that may give rise to justifiable doubts as to Ms impartially or independence. Such duty to continue thorough out the arbitral proceedings with regard to new facts and circumstances.
- 15.4 A prospective arbitrator shall disclose to the Secretary and any party who approaches him for a possible appointment.
- (a) Any past or present close personal relationship or business relationship, whether direct or indirect, with any party to the dispute, or any representative of a party, or any person known to be a potentially important witness in the arbitration:
- (b) The extent of any prior knowledge he may have of the dispute.

Bias

- 15.5 The criteria for assessing questions relating to bias are impartiality and independence. Partiality arises when an arbitrator favours one of the parties or where he is prejudiced in relation to the subject matter of the dispute. Dependence arises from relationships between an arbitrator and one of the parties, or with someone closely connected with one of the parties.
- 15.6 Any close personal relationship or current direct or indirect business relationship between an arbitrator and a party, or any representative of a party, or with a person who is known to be a potentially

important witness, will normally give rise to justifiable doubts as to a prospective arbitrator's impartiality or independence. Past business relationships will only give rise to justifiable doubts if they are of such magnitude or nature as to be likely to affect a prospective arbitrator's judgment. He should decline to accept an appointment in such circumstances unless the parties agree in writing that he may proceed.

Communications

- 15.7 Before accepting an appointment, an arbitrator may only enquire as to the general nature of the dispute, the names of the parties and the expected time period required for the arbitration.
- 15.8 No arbitrator shall confer with any of the parties or their Counsel until after the Secretary gives notice of the formation of the Tribunal to the parties.
- 15.9 Throughout his arbitral proceedings, an arbitrator shall avoid any unilateral communications regarding the case with any party, or its representatives.

Fees

- 15.10 In accepting an appointment, an arbitrator agrees to the remuneration as prescribed in the rules of SAROD, and he shall make no unilateral arrangements with any of the parties or their Counsel for any additional fees or expenses without the agreement of all the parties and the consent of the Secretary of SAROD.

Conduct

- 15.11 Once the arbitration proceedings commence, the arbitrator shall acquaint himself with all the facts and arguments presented and all discussions relative to the proceedings so that he may properly understand the dispute.

Confidentiality

- 15.12 The arbitration proceedings shall remain confidential. An arbitrator is in a relationship of trust to the parties and should not, at any time, use confidential information acquired during the course of the proceedings to gain personal advantage or advantage for others, or to affect adversely the interest of another.
- 15.13 This Code is not intended to provide grounds for the setting aside of any award.

Rule 16 - Challenge of Arbitrators

- 16.1 An arbitrator may be challenged if there are circumstances that give rise to justifiable doubts as to his impartiality or independence and also if he or she has committed any misconduct.
- 16.2 An arbitrator may also be challenged if he does not possess the qualifications required by the agreement of the parties.
- 16.3 A party may challenge an arbitrator appointed on its nomination or with its agreement only for reasons of which it becomes aware after the appointment has been made.
- 16.4 A party who intends to challenge an arbitrator shall file with the Secretary and serve on the other party or all other parties, whichever is applicable, a Notice of Challenge.
- 16.5 The Notice of challenge must be filed and served within 14 days from the appointment of the arbitrator or within 14 days after the circumstances mentioned in Rule 15.1 became known to that party.
- 16.6 The Notice of Challenge must state the reasons for the challenge.
- 16.7 The arbitration shall be suspended until the challenge is resolved or decided upon.
- 16.8 When an arbitrator has been challenged by one party, the other party may agree to the challenge. The arbitrator may also, after the challenge, withdraw from his office. However, it is not implied in either case that there has been an acceptance of the validity of the grounds for the challenge. In both cases, the procedure provided in Rule 11 read with Rule 13, shall be used for the appointment of a substitute arbitrator.

Rule 17 - Decision on Challenge

- 17.1 If the other party does not agree to the challenge and the arbitrator does not withdraw, the decision on the challenge will be made by the Governing Body.
- 17.2 If the Governing Body sustains the challenge, a substitute arbitrator shall be appointed or chosen pursuant to the procedure applicable to the appointment of an arbitrator as provided in Rule 11 read with Rule 13. If the Governing Body dismisses the challenge, the arbitrator shall continue with the arbitration.

Rule 18- Removal of the Tribunal

- 18.1 The Governing Body may on the application of a party remove an arbitrator.
 - a. Who is physically or mentally incapable of conducting the

- proceedings or where there are justifiable doubts as to his ability to do so; or
 - b. Who has refused or failed to use all reasonable dispatch in conducting the arbitration or making an award
 - c. Who has continuously absented from attending the proceedings for more than 3 sitting without prior permission of Presiding Arbitrator Governing Body of SAROD.
- 18.2 The arbiter(s) conceded is entitled to appear and be heard at the hearing of the application to remove him.
- 18.3 Upon the removal of the arbitrator, a substitute arbitration shall be appointed in accordance with Rule 11 read with Rule 13.
- 18.4 The Governing Body's decision on the application is final and is not subject to appeal or review.

Rule 19 - Re-hearing in the Event of Replacement of the Tribunal

If the sole o presiding Arbitrator is replaced, there shall be a re-hearing. If any other arbitrator is replaced, such re-hearing may take place at the discretion of the Tribunal.

Rule 20 - Jurisdiction of the Tribunal

- 20.1 The Tribunal shall have the power to rule on its own jurisdiction, including any objection with respect to the existence, termination or validity of the arbitration agreement. For that purpose, an arbitration agreement which forms part of a contract shall be treated as an agreement independent of the other terms of the contract. A decision by the Tribunal that the contract is null and void shall not entail ipso jure the invalidity of the arbitration agreement.
- 20.2 The plea that the Tribunal Joes not have jurisdiction shall be raised not later then in the Statement of Defense. A place that the Tribunal is exceeding the scope of its authority shall be raised promptly after the Tribunal has indicated its intention to decide on the matter alleged to be beyond the scope of its authority. In either case the Tribunal may nevertheless admit a late plea under this Rule if it considers the delay justified. A party is not precluded from raising such a plea by the fact that he has nominated, or participated in the appointment of an arbitrator.
- 20.3 The Tribunal must rule on an objection that it lacks jurisdiction as a preliminary question upon the objection being raised. It may rule on an objection that it exceeds the scope of its authority either as a preliminary question or in an award on the merits, as it deems just and convenient

- 20.4 In addition to the jurisdiction to exercise the powers defined elsewhere in these Rules. The Tribunal shall have jurisdiction to determine any question of law arising in the arbitration: proceed with the arbitration not with sanding the failure or refusal of any party to comply with these Rules or with the Tribunal's orders or directions, or to attend any meeting or hearing, but only after giving that party written notice that it intends to do so; and to receive and take into account such written or oral evidence as it shall determine to be relevant, whether or not strictly admissible in law.

Rule 21: Fees of SAROD and Arbitral Tribunal

Fee Schedule

Registration Fee (Non - Re fundable): Rs 10,000 or any amount fixed by Governing Body from time to time. The Schedule of Fees and allied expenditure shall be decided by Governing Body.

Rule 22- Transmission of File to the Tribunal

- 22.1 The Secretary shall, as soon as practicable transmit to the Tribunal, a file containing the Notice of Arbitration, the Response and all case statements.
- 22.2 The Tribunal shall as soon as practicable, after consultation with the parties, issue such orders and or directions as are necessary for the conduct of the arbitration to conclusion, including a timetable for steps to be taken in the arbitration and for the hearing of the arbitration.

Rule 23 - Judicial Seat of Arbitration

- 23.1 Unless otherwise agreed by the parties, the judicial seat of arbitration shall be New Delhi.
- 23.2 Notwithstanding Rule 22.1 and 22.2. the Tribunal may, unless otherwise agreed by the parties, hold hearings and meetings anywhere convenient, subject to the provisions of Rule 28.2.

Rule 24 - Language of Arbitration

The language of arbitrators shall be English. In case of material existing are in any other language, other than English the same has to be translated to English language.

Rule 25 - Conduct of the Proceedings

The Tribunal shall have the widest discretion allowed by the Act to ensure the just, expeditious, economical and final determination of the dispute. The proceedings shall be conducted from 10.AM to 5.PM with a recess of one hour.

Rule 26 - Communication between Parties and the Tribunal

- 26.1 Where the Tribunal sends any written communication to one party, it shall send a copy to the other party or parties as the case may be.
- 26.2 Where a party sends any written communication (including Statements, expert reports or evidentiary documents) to the Tribunal, the same shall be copied to the other party or all other parties, whichever is applicable, and show to the Tribunal that the same has been so copied.
- 26.3 The address of the parties for the purpose of all communications during the proceedings shall be those set out in the Notice of Arbitration, or as either party may at any time notify the Tribunal and the other party or parties, whichever is applicable.
- 26.4 A copy of correspondence between the parties and the Tribunal shall be sent to the Secretary.

Rule 27-Party Representatives

Any party may be represented by legal practitioners or any other representatives, subject to such proof of authority as the Tribunal may require. The names and addresses of such representatives must be notified to the other party or parties. In case one party is represented by a non-legal person, another party will also be represented by a non-legal person so as to maintain natural justice.

Rule 28- Hearings

- 28.1 Unless the parties have agreed to documents-only arbitration, the tribunal shall hold a hearing for the presentation of evidence by witnesses, including expert witnesses, or for oral submissions.
- 28.2 The Tribunal shall fix the date, time and place of any meetings and hearings in the arbitrations on the first hearing, and complete time table pertaining to all the activities of the Arbitration, e.g., submission of statement of claim, reply therein, admission and denial of documents, visit/inspection of site if any. The tribunal shall stick to the time table without any deviations unless there are unavoidable circumstances warranting such deviation which will be with the prior permission of the tribunal.

- 28.3 Prior to the hearing, the Tribunal may provide the Parties with matters Or questions to which it wishes them to give special consideration.
- 28.4 In the event that a party to the proceedings without sufficient: cause, fails to appear at a hearing of which the notice has been given, the Tribunal may proceed with the arbitration and may make the Award after the party present has submitted evidence to prove its case.
- 28.5 All meetings and hearing shall be in private unless the parties agree otherwise.

Rule 29 - Documents Only Arbitration

- 29.1 The Disputes may be decided without an oral hearing if it is so agreed by the parties.
- 29.2.1 Where the parties agree to dispense with oral hearing, the Tribunal must be promptly informed by either of the parties. as soon as is practicable. The Tribunal must also be promptly informed it, at a later stage, the parties or either of them intends to apply for an oral hearing.
- 29.2.2 Parties may seek discovery of documents if they are not satisfied with existence of documents annexed with statement of claim, reply and counter claim by giving self-contained request to the Tribunal justifying the necessity for such documents. Decision of tribunal shall be final and binding upon the parties.

Rule 30- Witnesses

- 30.1 The Tribunal may require each party to give notice of the names and designations of the witnesses it intends to call and reasons for legal necessity of such witness.
- 30.2 No party shall call any expert witness without the leave of the Tribunal.
- 30.3 Any witness who gives evidence may be questioned by each party or its representative subject to any rulings made by the Tribunal.
- 30.4 A Witness may be required by the Tribunal to testify under oath or affirmation.
- 30.5 Subject to such order or direction which the Tribunal may make, the testimony of witness may be presented in written form, either as signed statements or by duly sworn or affirmed affidavits,
- 30.6 Any party may require a witness to attend an oral examination at a

hearing. If the witness fails to attend the Tribunal may place such weight on the written testimony as it thinks fit, (05 may exclude it together).

30.7 The Tribunal shall determine the admissibility, relevance, materiality and weight of the evidence given by any witnesses.

Rule 31 - Experts Appointed by the Tribunal

- 31.1 Unless otherwise agreed by the parties, the Tribunal may:
- a. appoint one or more experts to report the Tribunal on specific issues;
 - b. Require a party to give any such expert any relevant information or to produce, or to provide access to, any relevant documents, goods or property for inspection by the expert.
- 31.2 Unless otherwise agreed by the parties, if a party so requests or if the Tribunal deem it fit, the expert shall, after delivery of his written or oral report, participate in an oral hearing, at which the parties may question him and present expert witnesses in order to testify on the points at issue.
- 31.3 Rule 30.2 shall not apply to an assessor appointed by agreement of the parties, or to an expert appointed by the Tribunal to advise solely in relation to procedural matters.

Rule 32 - Rules applicable to substance of dispute- (1) where the place of arbitration is situated in India,

- 32.1 In an arbitration, the arbitral tribunal shall decide the dispute submitted to arbitration in accordance with the substantive law for the time being in force in India;

Rule 33- Closure of Hearing

- 33.1 The Tribunal may inquire of the parties if they have any further proof to offer or Witnesses to be heard or submission to make and. if there are none, declare the hearing closed.
- 33.2 The Tribunal may also. in view of exceptional circumstance, reopen the hearings at any time before the award is made.

Rule 34 - Additional Powers of the Tribunal

- 34.1 In addition to the powers conferred by the Act, the Tribunal shall also have the power to:-
- a. Allow any party, upon such terms (as to costs and otherwise) as it shall determine, to amend claims or counterclaims;

- b. Extend or abbreviate any time limits provided by these Rules:
 - c. Conduct such enquires as may appear to the Tribunal to be necessary or expedient;
 - d. Order the parties to make any property or thing available for inspection
 - e. order any parties to produce to the Tribunal, and to the other parties for inspection, and to supply copies of any documents or classes of documents in their possession, custody or power which the Tribunal determines to be relevant.
 - f. Make orders or give directions to any party for interrogations;
 - g. Make orders or give directions to any party for an interim injunction or any other interim measure:
 - h. Make such orders or give such directions as it deems fit in so far as they are not inconsistent with the Act or any statutory re-enactment thereof or such law which is applicable of these Rules.
- 34.2 If the parties so agree, the Tribunal shall also have the power to add other parties (with their consent to be joined in the arbitration and make a single Final Award determining all disputes between them.

Rule 35 - Deposits to Costs and Expenses

- 35.1 The Tribunal's fees and SAROD administration fees shall be ascertained in accordance with the Schedule of Fees in Force at the time of commencement of the arbitration.
- 35.2 The Claimant shall deposit with the SAROD half of the fees payable at the time of filing of the Statement of Case. The Respondent shall deposit with the SAROD one-half of the fees payable at the time of filing the Statement of Respondent's Defence and Counterclaim (if any). The balance of fees payable shall be paid 60 days before the date of the final hearing or on such other date that the Secretary may direct.
- 35.3 Where the amount of the claim or the counterclaim is not quantifiable at the time payment is due, the Secretary will make a provisional estimate. The fees will be adjusted in light of such information as may subsequently become available if the arbitration is settled or disposed of without a hearing, the amount of the Tribunal's fees and SAROD administration fees shall be finally determined by the Secretary who will have regard to all the circumstances of the case, including the stage of proceedings at which the arbitration is settled or otherwise disposed of.

- 35.4 The Secretary may from time to time direct parties make one or more deposit(s) towards any further expenses incurred or to be incurred on behalf of or for the benefit of the parties.
- 35.5 All deposit(s) shall be made to and held by the SAROD, Any interest which may accrue on such deposits) shall be retained by the SAROD.
- 35.6 If a party fails to make the payments or deposits required or directed. the Tribunal may refuse to hear the claims or counterclaims, whichever is applicable. by the non- complying party, although it may proceed to determine claims or counterclaims by any party who has complied with orders.
- 35.7 The parties shall remain jointly and severally liable to the SAROD for payment of all such fees and expenses until they have been paid in full even if the arbitration is abandoned, suspended or concluded. by agreement or otherwise, before the final Award is made.

Rule 36 - Decision Making by the Tribunal

- 36.1 Where a Tribunal has been appointed, any direction, order, decision or award of the Tribunal must be made by the whole Tribunal or a majority. If an arbitrator refuses or fails to sign the Award, the signatures of the majority shall be sufficient, provided that the reason for the omitted signature is stated.
- 36.2 If there is no unanimity, the same shall be made by the majority arbitrators' as well as by the dissenting Arbitrator alone as if acting as a sole arbitrator.
- 36.3 However in the case of a three member tribunal the presiding arbitrator may, after consulting the other arbitrators, make procedural ratings alone.

Rule 37 - The Award

- 37.1 It will be mandatory for the parties to submit written synopsis of their arguments respectively which will form part of the arbitral proceedings.
- 37.2 The Tribunal shall assemble at the assigned place in SAROD and shall exercise utmost secrecy and confidentiality in writing the award.
- 37.3 Unless the Secretary extends the time or the parties agree otherwise, the Tribunal shall make is Award in writing within 30 days from the date on which the hearings are closed and shall state the reasons upon which its award is based. The award shall contain the date and

shall be signed by the arbitrator or arbitrators.

- 37.4 The Tribunal may make interim awards or separate awards on different issues at different times.
- 37.5 All Awards must be submitted by the Tribunal to the Secretary and they shall be issued through the Secretary
- 37.6 The Tribunal must deliver to the Secretary number of originals of the award sufficient for the parties and for filing with the Secretary.
- 37.7 The Secretary shall release the award to the parties only upon receipt of sufficient deposits to cover the fees and expenses due to the Tribunal and to the SAROD.
- 37.8 By agreeing to have arbitration under these Rules, the parties undertake to carry out the award without delay.
- 37.9 Stamp duty on award shall be payable by the party in whose favor the award has been pronounced.

Rule 38 - Additional Award

- 38.1 Within 30 days after the receipt of the award, either party, with notice to the Secretary or the other party may request the Tribunal to make an additional award as to claims presented in the arbitral proceedings but omitted from the award.
- 38.2 If the Tribunal considers the request for an additional award to be justified and considers that the omission can be rectified without any further hearings or evidence, it shall notify all the parties within 7 days of the receipt of the request, that it will make an additional award, and complete the additional award within 30 days after the receipt of the request.

Rule 39 - Correction of Awards

- 39.1 Within 30 days of receiving an Award, unless another period of time has been agreed upon by the parties, a party may by notice to the Secretary and the other party request the Tribunal to correct in the Award, any errors in computation, any clerical or typographical errors or any errors of similar nature.
- 39.2 If the Tribunal considers the request to be justified, it shall make the corrections) within 30 days of receiving the request. Any correction shall be notified in writing to the parties and shall become part of the Award.
- 39.3 The Tribunal may correct any error of the type referred to in Rule

37,1 on its own initiative within 30 days of the date of the Award.

Rule 40- Settlement

- 40.1 If the parties arrived at amiable settlement of the disputes during the currency proceedings, the parties shall file memo of settlement before the tribunal who shall either issue an order for the termination of the arbitral proceedings or, if requested by both parties or accepted by the Tribunal, record the settlement of an arbitral award on agreed terms. The Tribunal is not, obliged to give reasons for such an award.
- 40.2 The Parties shall:
- a. Notify the Tribunal and the Secretary immediately if the arbitration is settled or otherwise terminated
 - b. Make provision in any settlement for payment of all the costs of the arbitration and fees and expenses due to the SAROD and the Tribunal.
- 40.3 If the continuation of the arbitral proceedings becomes unnecessary or impossible for any reason not mentioned in Rule 38.1. before the award is made, the Tribunal shall inform the parties of its intention to issue an order for the termination of the proceedings. The Tribunal shall have the power to issue such an order unless party raises justifiable grounds for objection.
- 40.4 Copies of the order for termination of the arbitral proceedings or of the arbitral award on, agreed terms, signed by the Tribunal, shall be communicated by the Tribunal to the parties through the Secretary.

Rule 41 - Interest

The Tribunal may award interest on any sum awarded at such rate as applicable in fixed deposits of State Bank of India in respect of such periods ending not later than the date of the award as the Tribunal considers just.

Rule 42 - Costs

- 42.1 The Tribunal shall specify in the final award, the costs of the arbitrations and decide which party shall bear them and in what proportion they shall be borne.
- 42.2 In this Rule, "costs of the arbitration" shall include:
- a. The fees and expenses of the Tribunal and the administration fees of the SAROD as determined by the Secretary in accordance with the Schedule of Fees:

- b. The costs of tribunal appointed experts or of other assistance rendered: and
 - c. All expenses which are reasonably incurred by the SAROD in connection with the arbitration.
- 42.3 The Tribunal has power to order in its Award, that all or part of the legal or other costs (such as legal fees and expenses. costs incurred in respect of party appointed experts etc.) of one party shall be paid by the other party.

Rule 43- Waiver

A party which is aware of non-compliance with these Rules and yet proceeds with the arbitration without promptly stating its objection in writing to such non-compliance shall be deemed to have waived its right to object.

Rule 44- Exclusion Liability

- 44.1 The Tribunal, the President, the SAROD and any of its officers, employees or agents shall not be liable to any party for any act or omission in connection with any arbitration conducted under these Rules.
- 44.2 After the Award as been made and the possibilities of corrections and additional Awards have lapsed or been exhausted, neither the Tribunal nor the President shall be under any obligation to make any statement to any person about any matter concerning the arbitration, and no party shall seek to make any arbitrator or the President or the SAROD and any of its officers a witness in any legal proceedings arising out of the arbitration.

Rule 45 - General Provisions

- 45.1 In all matters not expressly provided for in these Rules, the President, the Secretary and the Tribunal shall act in the spirit of these Rules and shall make every reasonable effort to ensure the just, expeditious and economical conclusion of the arbitration.
- 45.2 The Secretary may from time to time issue Practice Notes on the implementation of these Rules.

Rule 46 - Amendment to Rules

These Rules may from time to time be amended by the Governing Body of SAROD.

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