

Schedules

SCHEDULE - A

(See Clauses 2.1 and 8.1)

SITE OF THE PROJECT

1. [

2. The Site

- 21 Single/Intermediate lane shall include the land, buildings, structures and road works as described in Annex-I of this Schedule-A.
- 22 The dates of handing over Right of Way to the Contractor are specified in the Annex-II of this Schedule A.
- 23 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 8.2.1 of this Agreement.
- 24 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.
- 25 The status of the environment clearances obtained or awaited is given in Annex - IV.

Annexure - I

(Schedule-A)

Site

Note: Through suitable drawings and description in words, the land, buildings, structures and road works comprising the Site shall be specified briefly but precisely in this Annex-I. All the chainages/location referred to in Annex-I to Schedule A shall be existing chainages.

1. Site

The Site of the single/intermediate lane Project Highway comprises the 4 locations of National Highway – 4 after Jirkatang at Km 59.2 to Middle Strait Creek at Km 107.00 in the Union Territory of Andaman & Nicobar Islands. The land, carriageway and structures comprising the Site are described below.

2. Land

The Site of the Project Highway comprises the land (sum total of land already in possession and land to be possessed) as described below:

Land Details

S.No.	Chainage(km)	Existing ROW (in M)			Remarks
		Left Side	Right Side	Total ROW	
1	71.06	15	15	30	
2	71.18	15	15	30	
3	97.24	15	15	30	
4	106.54	15	15	30	

3. Carriageway

The present carriageway of the Project Highway is of Single Lane/Intermediate lane carriageway flexible pavement having carriageway varying from 3.0m to 5.5m.

4. Major Bridges

The Site includes the following Major Bridges:

S. No.	Existing 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):

The Site includes the following ROB (road over railway line)/RUB (road under railway line):

Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000 And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC Mode

S.No	Existing Chainage (km)	Type of Structure		No. of Spans with span length (m)	Width (m)	ROB/ RUB
		Foundation	Super Structure			
NIL						

6. Grade separators

The Site includes the following grade separators:

S. No	Existing Chainage (km)	Type of Structure		No. of Spans with span length (m)	Width (m)
		Foundation	Superstructure		
NIL					

7. Minor Bridges

The Site includes the following minor bridges

S. No.	Existing Chainage (km)	Type of Structure			No. of Spans with span length (c/c of exp gap)	Total Width (m)
		Foundation	Sub-Structure	Super-Structure		
NIL						

8. Railway level crossings

The Site includes the following level crossing:

S. No.	Existing Chainage (km)	Remarks
NIL		

9. Underpasses (Vehicular, Non Vehicular)

The Site includes the following underpasses:

S. No.	Existing Chainage (Km)	Type of Structure	No. of Spans with span length (m)	Width (m)
NIL				

10. Culverts

The Site has the following culverts:

S. No	Existing Chainage (Km)	Type of culvert	Span/ Opening with Span length (m)
Nil			

11. Bus bays/Bus Shelters

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

S.No.	Existing Chainage	Side
NIL		

12. Truck Lay byes

The details of truck lay byes are as follows:

S. No.	Existing Chainage (Km)	Length (m)	Left Hand Side	Right Hand Side
NIL				

13. Road side drains

14. Major junctions

The details of major junctions are as follows:

S.No	Existing Chainage (km)	At Grade	Grade Separated	Category of Cross Road+			
				NH	SH	MDR	Others
NIL							

+ NH= National Highway, SH= State Highway, MDR= Major District Road.

15. Minor junctions

The details of the minor junctions are as follows:

S. No	Existing Chainage (km)	Village Name	Side	Type of Junction
NIL				

16. Bypasses

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

S. No	Name of bypass (Town)	Existing Chainage (Km)		Length (Km)
		From	To	
NIL				

17. Other Structures : Following are the details of existing causeways:

S. No	Existing Chainage (km)	Structure Type	Openings / Spans X Length	Width (m)
NIL				

Annex - II
(Schedule-A)

Dates for providing Right of Way

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

S. No.	Design Chainage (Km)		Design Length (Km)	Width (In Meter)	Dates of Providing ROW
	From	To			
1	2	3	4	5	6
	Part Right of Way				
	Width of Land as per Clause 2 of Annexure-I of Schedule A				On Appointed Date

Annex-III
(Schedule-A)

Alignment Plans

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 IRC: SP: 99 & IRC: 67

**Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000
And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-
223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC Mode**

Annex - IV

(Schedule-A)

Environment Clearances

Not Applicable for this section.

SCHEDULE - B

(See Clause 2.1)

Development of the Project Highway

1. Development of the Project Highway

As described in this Schedule-B and in Schedule-C.

2. Rehabilitation and Upgradation

As described in Annex-I of this Schedule-B and in Schedule-C.

3. Specifications and Standards

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

Annex - I

(Schedule-B)

Description of Two-Laning

Project Description:-

1. Rehabilitation and Upgradation of NH-4 (Old NH-223) popularly known as Andaman Trunk Road (ATR) has been entrusted to NHIDCL for the entire stretch of 330.7 Km distributed in South Andaman and North & Middle Andaman. In south Andaman the stretch from Km 59.20 to Km 107.00 is being Strengthen by overlaying. Four locations mentioned herein under sustained breach of formation width in the year of 2018 which resulted into damage of the valley slope requiring to rebuilt to regain the formation width and valley slopes. The proposed project locations of the roads pass through Jarwa area. The Rehabilitation and Rebuilding of slope at these 4 locations shall also include development of drainage and cross drainage works including preventive measures such as construction of culverts Breast wall, retaining wall, erosion control and River training works. The work is to be executed on the existing alignment only. There is no realignment.

1.1 Location statement of rebuilding sites:-

- (i) Km 71.180
- (ii) Km 71.060
- (iii) Km 97.240
- (iv) Km 106.540

2. The Development plant is as under :-

- (i) The proposal envisages restoration/reconstruction of valley side slopes with the cellular confinement cells or similar technology including development of sub surface drainage network, cellular confinement or similar technology is recommended due to non availability of stone aggregates in the region.
- (ii) Development of the drainage and cross drainage network including guided 2m impervious/lined water chute from the culvert inlet/outlet to the stable strata to check future erosion is also part of the development/restoration plan.
- (iii) In addition, all the locations need to be provided with 2m span box culverts and hill side retaining breast wall and lined drains.
- (iv) In addition, Toe erosion control measures along water bodies needs to be implemented at Km 71.060 & Km 97.240 i.e site mentioned in para 1.1.
- (v) All the above restoration carried out by cellular confinement cells should also be covered with bio engineering.

3. Road safety and road marking between Km 59.40 to Km 107.00 and Km 138.3 to Km 155.00 as specified herein under is also part of scope of work.

1. WIDENING OF THE EXISTING HIGHWAY

Restoration of minimum formation width of 7.5m

1.1 WIDTH OF CARRIAGEWAY

3.6m carriageway has been constructed by M/s Jandu Construction Company. However the necessary repair to be carried out by the contractor.

2. GEOMETRIC DESIGN AND GENERAL FEATURES

2.1 General

Geometric design and general features of the Project Highway shall be in accordance with section 2 of the manual.

2.2 Design Speed- Nil

2.3 Improvement of the existing road geometry- Nil

Deficient Curves:- NIL

Bypasses- Nil

2.4 Right of Way

The Site of the Project Highway comprises the land as described in Annexure-I of Schedule-A.

2.5 Type of Shoulders

1 m hard shoulder with 200 mm GSB has been constructed by M/s jandu Construction Company, however the necessary repair to be carried out by the contractor.

2.6 Lateral and vertical clearances at underpasses - Nil

2.7 Lateral and vertical clearances at overpasses- Nil

2.8 Service roads - Nil

2.9 Grade separated structures – Nil

2.10 Cattle and pedestrian under pass / over pass - Nil

2.11 Typical cross-sections of the Project Highway

Indicative typical cross sections along with different types of cross-sections required to be developed in different segments of the project highway are indicated in Appendix B-I. Cross Section schedule for the project highway is as follows:

S.No	Design Chainage		Proposal	Length (m)	Works Proposed
	From	To			
1	71.180	71.242	Retaining wall, Breast Wall, lined drain,	42	TCS-I

**Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000
And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-
223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC Mode**

			culvert		
2	71.060	71.115	Toe Wall, Retaining wall, Breast Wall, lined drain, culvert	55	TCS-II
3	97.240	97.305	Toe Wall, Retaining wall, Breast Wall, Erosion Control, River training work, lined drain, culvert	65	TCS-III
4	106.540	106.662	Retaining wall, Breast Wall, lined drain, culvert.	82	TCS-IV

[TCS are appended separately]

2.12 Edge line marking shall be executed as per IRC Standards

3. INTERSECTIONS AND GRADE SEPARATORS - Nil

4. ROAD EMBANKMENT AND CUT SECTION - Nil

5. DESIGN

5.1 Design shall be carried out in accordance with MoRTH Specification and IRC SP-48 (Hill road manual) as well as IRC-SP56

5.2 Type of pavement

5.3 Design Requirements

NIL

5.3.1 Design Period and strategy

NIL

5.3.2 Design Traffic

NIL

5.4 Reconstruction of stretches

NIL

5.5 Maintenance before Construction:-

Temporary provisions shall be installed before executing the main work for protection of slopes at the desired location which are prone to sliding.

6. DRAINAGE

Lined drains alongwith entire length of Breast wall.

7. DESIGN OF STRUCTURES

7.1 General

7.1.1 All bridges, culverts and structures shall be designed and constructed in accordance with section 7 of the manual and shall conform to the cross-sectional features and other details specified therein.

7.1.2 Width of the carriageway of new structures of more than 60m length shall be as follows, if the carriageway width is different from 7.5m in the table below.

S.No	Design Chainage (Km)	Width of Carriageway (m) and cross sectional features
NIL		

7.1.3 The following structures shall be provided with footpaths:

S. No.	Design Chainage (Km)	Remarks
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Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000 And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC Mode

NIL

7.1.4 All bridges shall be high-level bridges. **No**

7.2 Culverts

7.2.1 The Culverts overall width shall be equal to 7.5m.

7.2.2 *Reconstruction of existing culverts:* Nil

7.2.3 Widening of Existing Culverts:- Nil

7.2.4 Additional new culverts (given in table below) shall be constructed in the width of 7.5m which is equal to the roadway width of the Project Highway & as per typical cross-section given in the manual:

The culvert opening along the slope shall be protected with M-15 concrete to stop the erosion beneath the culvert opening.

S. No.	Design Chainage (Km)	Proposed type	No. of Spans X span length (m)
1	71.78	Box	1X2
2	71.06	Box	1X2
3	97.24	Box	1X2
4	106.54	Box	1X2

7.3 Bridges

7.3.1 Existing bridges to be re-constructed/widened: Nil

7.3.2 *Additional new bridges :- Nil*

7.4 Rail-road bridges: - Nil

7.5 Grade separated structures: - Nil

7.6 Repairs and strengthening of bridges and structures :- Nil

7.7 List of Major Bridges and Structures :- Nil

8. TRAFFIC CONTROL DEVICES AND ROAD SAFETY WORK.

8.1 Traffic control devices and road safety works shall be provided in accordance with Section 9 of the IRC:SP:73-2015 on the locations identified by the Authority.

Specified Retro- reflectorised Traffic signs

(i) 90 Cm equilateral triangle- 248 Nos

(ii) 60cm x 45 cm rectangle – 12 Nos

(iii) 60 cm circular – 64 Nos.

8.2 Road Marking on both the edges of the road as per the IRS Specification along the entire length between Km 59.40 to Km 107.00 and Km 138.3 to Km 155.00 including painting of parapets of culverts with suitable exterior paints as per IRC.

9. ROAD SIDE FURNITURE: - Nil

9.1 Overhead traffic signs: location and size- Nil

10. COMPULSORY AFFORESTATION

Not Required.

11. HAZARDOUS LOCATIONS- Nil

12. REQUIREMENTS OF SLOPE RESTORATION/RECONSTRUCTION/REBUILDING

In accordance with the section 13 of the manual (IRC: SP 73:2015 & IRC: SP 48:1998) and recommended practices for the treatment of embankment and road side slopes erosion control (First Revision), IRC: 56-2011 and relevant IRC.

12.1 Slope Protection

(i) Retaining walls have been proposed to restore the formation width and valley slopes.

(ii) Breast Wall have been proposed along the roadway edge on the hilly side of the section of project road as preventive measure and also for effective drainage to protect drains.

Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000 And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC Mode

(iii) All retaining structures should comprise of sub surface drainage network. The cellular confinement cells i.e. preformed polymer Geocells or webs (Clause 5.10 of IRC 56: 2011) has been adopted due to non availability of stones in the Island. However, Contractor can adopt any construction technique as per codal provisions. As per directives of Union Territory Administration the aggregate can be imported therefore arrangement of stones/aggregates to be ensured beforehand only.

(iv) Location and minimum size of Breast Wall

S.No	Design Chainage		Side	Minimum Length (m)	Minimum Height (m)
	From	To			
1	71.180	71.242	Left	42	2
2	71.060	71.115	Left	55	2
3	97.240	97.305	Left	65	2
4	106.540	106.662	Left	82	2
Total length (m)				244	

(v) Location and minimum size of Retaining Wall

S.No	Design Chainage		Side	Minimum Length (m)	Minimum Height (m)
	From	To			
1	71.180	71.242	Right	42	4
2	71.060	71.115	Right	55	5
3	97.240	97.305	Right	65	5
4	106.540	106.662	Right	82	6
Total length (m)				244	

(vi) Location and minimum size of Toe Wall

S.No	Design Chainage		Side	Minimum Length (m)	Minimum Height (m)
	From	To			
1	71.180	71.242	Not Required	0	
2	71.060	71.115	Right	165	2
3	97.240	97.305	Right	65	2
4	106.540	106.662	Not Required	0	
Total length (m)				230	

(i) Erosion Control:-

Erosion control shall be done at following location with specified details as under :-
NHIDCL

**Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000
And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-
223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC Mode**

S.No	Design Chainage		Side	Minimum Length (m)	Minimum Breadth (m)	Minimum Area (sqm)
	From	To				
2	71.060	71.115	Right	55	34.28	1885.4

12.2 ROAD LAND BOUNDARY (Clause 12.2 IRC SP: 73: 2015)- Not required

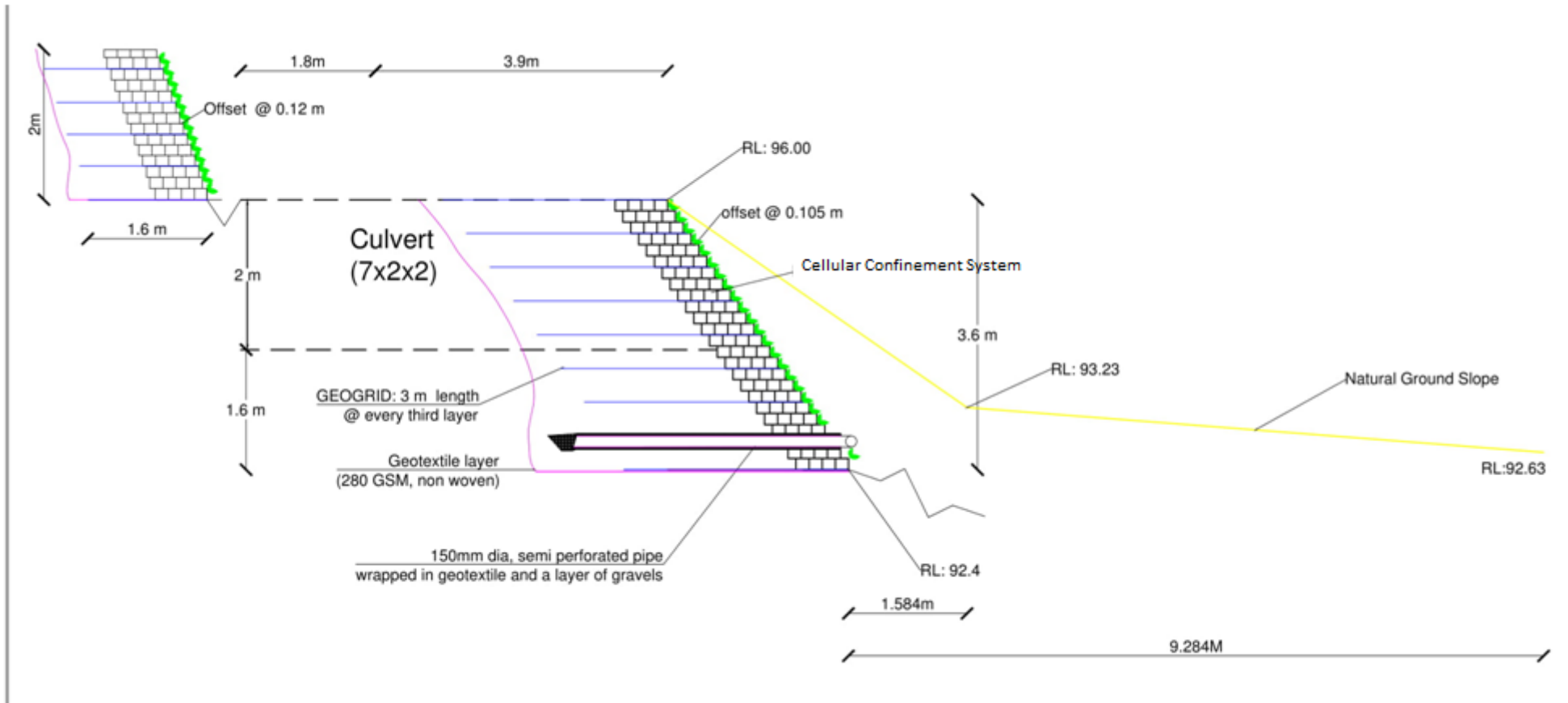
12.3 Disposal of Debris – As per Manual

13. CHANGE OF SCOPE

The length and height of the retaining Structures specified hereinabove shall be treated as an approximate assessment. The Contractor in accordance with the Specifications and Standards shall determine the actual lengths as required on the basis of detailed investigations. 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.

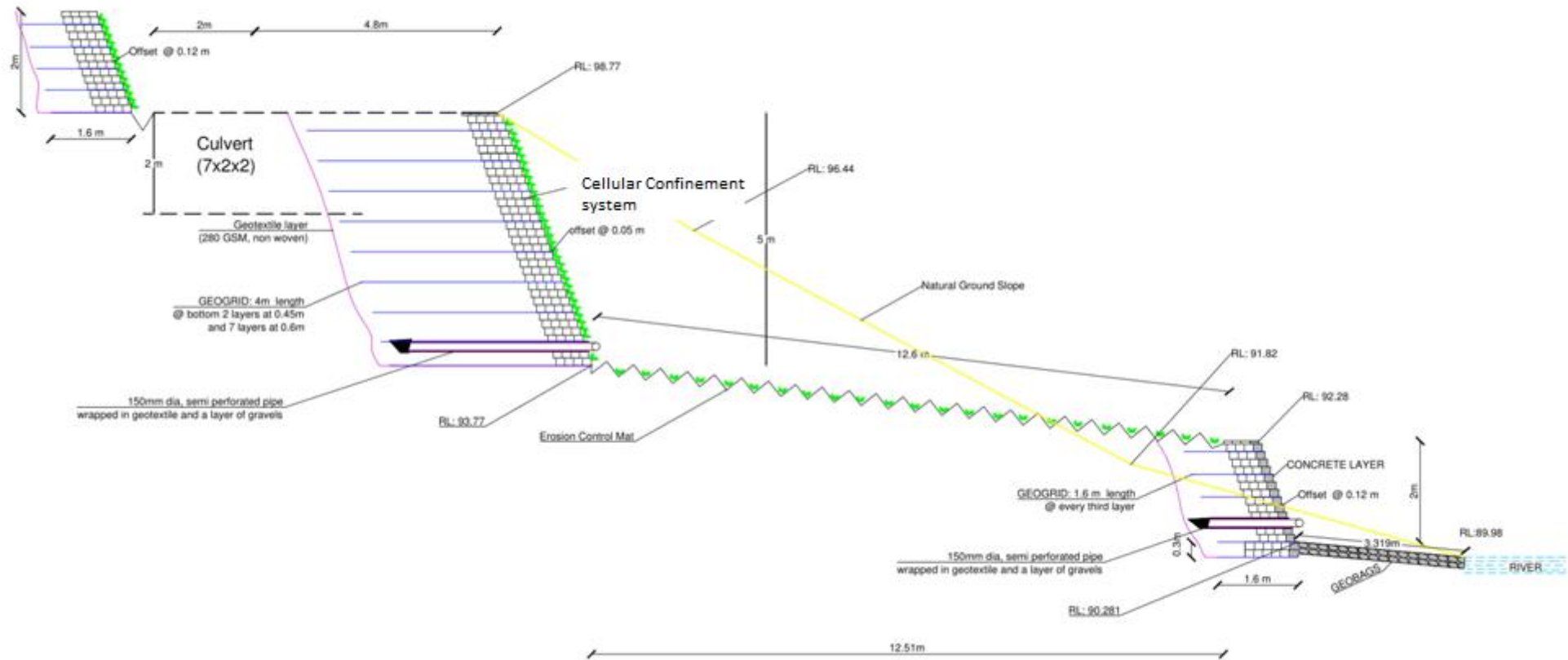
Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000 And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC Mode

Appendix-B-I



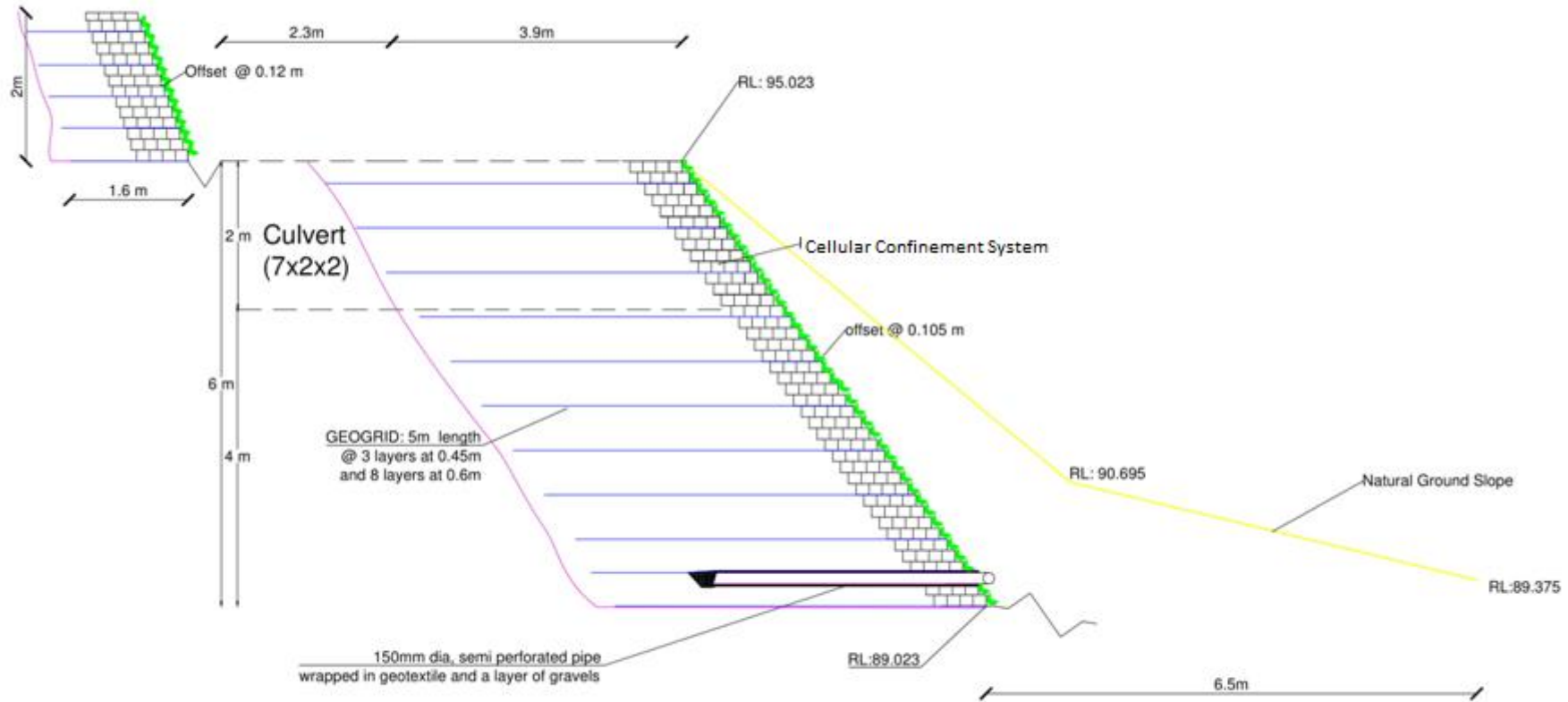
TCS-I

Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000 And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC Mode



TCS-III

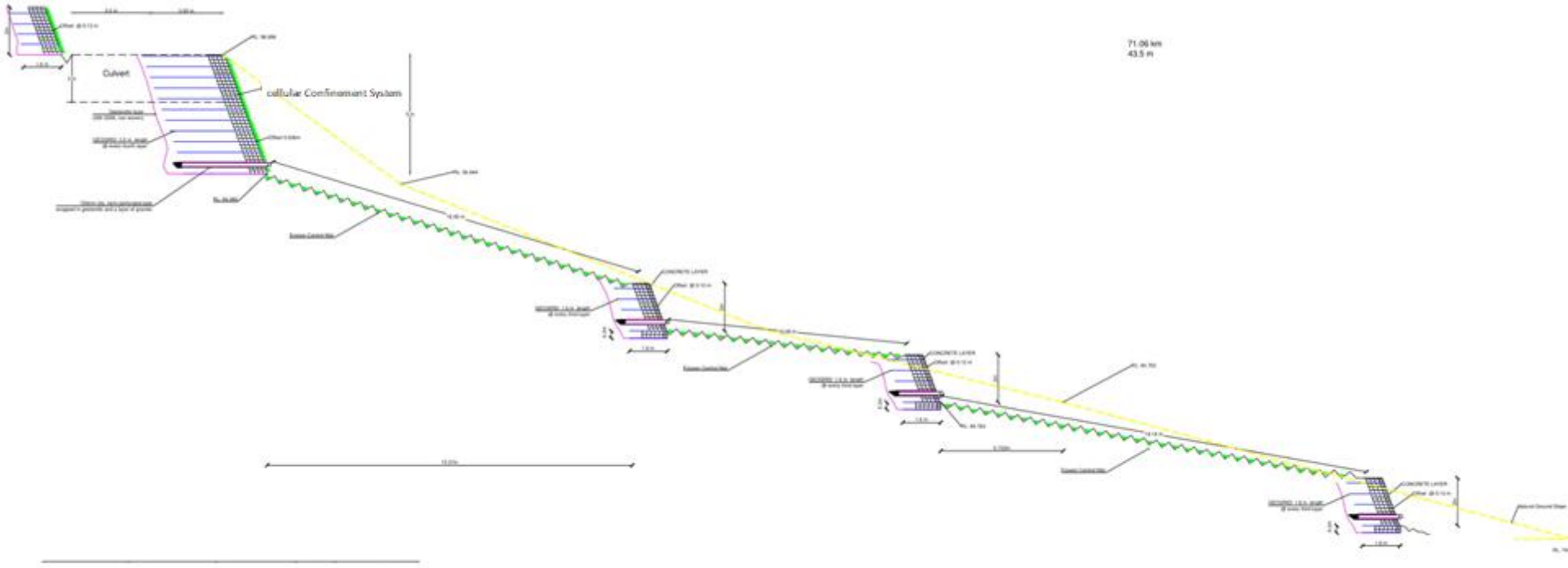
Appendix-B-I



TCS-IV

Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000 And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC Mode

Appendix-B-I



TCS-II

Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000 And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC Mode

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:

Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000 And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC Mode

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 Execution for slope protection work along the National Highway.

2. Design Standards

The Project Highway including Project Facilities shall conform to design requirements set out in the following documents:

Manual of Specifications and Standards for Hill road (IRC:SP: 48- 1998) and IRC 56 : 2011 referred to herein as the Manual.

Annex - I

(Schedule-D)

Specifications and Standards for Construction

1. Specification and Standards

All Materials, works and construction operations shall conform to the Manual of Specifications and Standards for Hill roads (IRC:SP: 48-1998), referred to as the Manual, and MORTH Specifications for Road and Bridge Works and IRC SP-56:2011. Where the specification for a work is not given, Good Industry Practice shall be adopted to the satisfaction of the Engineer in charge.

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) [Notwithstanding anything to the contrary contained in Paragraph 1 above, the following Specifications and Standards shall apply to the Project Highway, and for purposes of this Agreement, the aforesaid Specifications and Standards shall be deemed to be amended to the extent set forth below:

[Note 1: Deviations from the aforesaid Specifications and Standards shall be listed out here. Such deviations shall be specified only if they are considered essential in view of project-specific requirements.]

SCHEDULE – E

(See Clause 2.1 and 14.2)

MAINTENANCE REQUIREMENTS

1. Maintenance Requirements

- (i) The Contractor shall, at all-time 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-fulfillment 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 payment as 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 to the MORTH Specifications for Road and Bridge Works, and the 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: SP:35. 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 [30th September] and the inspection report together with details of any damages 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 wilful 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.

Nature of Defect or deficiency		Time limit for repair/ rectification
ROADS		
(a)	Carriageway and paved shoulders	
(i)	Breach or blockade	Temporary restoration of traffic within 24 hours; permanent restoration within 15 (fifteen) days
(ii)	Any significant change in roughness value from original value [more than 5%] in a stretch of 1 km (as measured by a Calibrated bump integrator)	120 (one hundred and twenty) days
(iii)	Pot holes	24 hours
(iv)	Any cracks in road surface	15 (fifteen) days
(v)	Any depressions, rutting exceeding 10 mm in road surface	30 (Thirty) days
(vi)	Skidding	7 (seven) days
(vii)	Any other defect/distress on the road	15 (fifteen) days
(viii)	Damage to pavement edges	15 (fifteen) days
(ix)	Removal of debris, dead animals	6 hours
(x)	Any other defects/deficiency not covered above but pointed out by Engineer	3 (Three) days
(b)	Granular earth shoulders, side slopes, drains and culverts	

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(i)	Edge drop at shoulders exceeding 40 mm	7 (Seven) days
(ii)	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
(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)	Desilting of drains in urban/semi-urban areas	24 hours
(vii)	Railing, parapets, crash barriers	7 (Seven) days (Restore immediately if causing safety hazard)
(viii)	Any other defects/deficiency not covered above but pointed out by Engineer	3 (Three) days
(c)	Road side furniture including road sign and pavement marking	
(i)	Damage to shape or position, poor visibility or loss of retro-reflectivity	48 hours
(ii)	Painting of KM stone, railing, parapets, crash barriers	As and when required/Once every year
(iii)	Damaged/missing road signs required replacement	7 (Seven) days
(iv)	Damage to road mark ups	7 (Seven) days
(v)	Any other defects/deficiency not covered above but pointed out by Engineer	3 (Three) days
(d)	Road lighting	
(i)	Any major failure of the system	24 hours
(ii)	Faults and minor failures	8 hours
(iii)	Any other defects/deficiency not covered above but pointed out by Engineer	3 (Three) days
(e)	Trees and plantation	
(i)	Obstruction in a minimum head-room of 5 m	24 hours

Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000 And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC Mode

	above carriageway or obstruction in visibility of road signs	
(ii)	Removal of fallen trees from carriageway	4 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 sight line and road structures	15 (fifteen) days
(vi)	Any other defects/deficiency not covered above but pointed out by Engineer	3 (Three) days
(f)	Other Project Facilities, Rest Area and Approach roads	
(i)	Damage in pedestrian facilities, truck lay-buys, bus-bays, bus-shelters, cattle, crossings, [Traffic Aid Posts, Medical Aid Posts] and service roads	15 (fifteen) days
(ii)	Cleaning of toilets	Every 4 hours
(iii)	Defects in electrical, water and sanitary installations	24 hours
(iv)	Any other defects/deficiency not covered above but pointed out by Engineer	3 (Three) days
(v)	Rescue operations and attendance at accidents	Round the clock patrolling Inform police and other agencies immediately Removal of vehicles or debris. Assistance for first-aid and transport of accident victim to hospital Arrangement for safe movement of traffic
(vi)	Any other defects/deficiency not covered above but pointed out by Engineer	3 (Three) days
(vii)	Damaged vehicles or debris on the road	4 (Four) hours
(viii)	Malfunctioning of the mobile cranes	4 (four) hours

Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000 And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC Mode

Bridges		
(a)	Superstructure	
(i)	Any damage, cracks, spalling/scaling Temporary measures Permanent measures	Within 48 hours Within 15 (fifteen) days or as specified by the Authority's Engineer
(b)	Bearings (metallic) of bridges	
(i)	Deformation	15 (fifteen) days Greasing of metallic bearings once in a year
(c)	Joints	
(i)	malfunctioning of joints	15 (fifteen) days
(ii)	Any other defects/deficiency not covered above (a) , (b) &(c) but pointed out by Engineer	3 (Three) days
(d)	Foundations	
(i)	Scouring and/or cavitation	15 (fifteen) days
(e)	Piers, abutments, return walls and wing walls	
(i)	Cracks and damages including settlement and tilting, Spalling, scaling	30 (thirty) days
(ii)	Any other defects/deficiency not covered above (d) & (e) but pointed out by Engineer	3 (Three) 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

Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000 And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC Mode

		(immediately within 24 hours if posing danger of 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
(viii)	Any other defects/deficiency not covered above but pointed out by Engineer	3 (Three) days

The failure to address above measures for any of the defects/deficiency may attract reduction in payment as per schedule M

Schedule-F

(See Clause 3.1.5(a))

APPLICABLE PERMITS

1. Applicable Permits

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 the State Government for drawing water from river/reservoir;
- (c) Permission of Village Panchayats and State Government for borrow earth; and
- (d) Any other permits, clearances or approvals required under Applicable Laws.

1.2 Applicable permits, as required, relating to environmental protection and conservation shall have been produced by the Authority in accordance with the provisions of this Agreement

Schedule-G

(See Clause 7.1.1, 7.5.3 and 19.2)

FORM OF BANK GUARANTEE

Annex-I

(See Clause 7.1.1)

PERFORMANCE SECURITY

**The Managing Director,
NHIDCL,
3rd Floor, PTI Building, Sansad Marg,
New Delhi**

WHEREAS:

- (A) _____ [name and address of contractor] (hereinafter called “the Contractor”) and [NHIDCL], (“**the Authority**”) have entered into an agreement (the “**Agreement**”) for “Slope Protection at 4 locations in Jarwa Area of NH-223 (New NH-4) from Km 59.400 to Km 107.000 in the Union territory of Andaman and Nicobar Islands through Engineering, Procurement & Construction (EPC) Basis Contract”, subject to and in accordance with the provisions of the Agreement.
- (B) The Agreement requires the Contractor to furnish a Performance Security for due and faithful performance of its obligations, under and in accordance with the Agreement, during the Construction Period and Defects Liability Period and maintenance period (as defined in the Agreement) in a sum of Rs. Crore (Rupees Crore) (the “Guarantee Amount”).
- (C) 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. The Bank hereby unconditionally and irrevocably guarantees the due and faithful performance of the Contractor's obligations during and under and in accordance with the Agreement, and agrees and undertakes to pay to the Authority, upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the 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.
2. A letter from the Authority, under the hand of an officer not below the rank of [Executive Director, NHIDCL], 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 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 difference 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.
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.
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.
5. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Agreement or to extend the time or period for the compliance with, fulfillment and/or performance of all or any of the obligations of the Contractor contained in the Agreement or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Authority against the 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 rights under any such law.

6. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by the Authority in respect of or relating to the Agreement or for the fulfillment, compliance and/or performance of all or any of the obligations of the Contractor under the Agreement.
7. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guarantee amount and this Guarantee will remain in force for the period specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee all rights of the Authority under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.
8. The Performance Security shall cease to be in force and effect upto 90 (ninety) days after the end of the Defects Liability Period as set forth in Clause 17.1 of EPC agreement.
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.
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.
[[[
11. This Guarantee shall come into force with immediate effect and shall remain in force and effect for up to the date specified in para 8 above or until it is released earlier by the Authority pursuant to the provisions of the Agreement.
12. This guarantee shall also be operatable at our Branch at New Delhi, from whom, confirmation regarding the issue of this guarantee or extension/ renewal thereof shall be made available on demand. In the contingency of this guarantee being invoked and payment thereunder claimed, the said branch shall accept such invocation letter and make payment of amounts so demanded under the said invocation

Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000 And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC

13. Intimation regarding issuance of this Bank Guarantee shall be sent to Authority's Bank through SFMS gateway as per the details below:

S.No.	Particulars	Details
1	Name of Beneficiary	National Highways & Infrastructure Development Corporation Limited
2	Beneficiary Bank Account No.	90621010002659
3	Beneficiary Bank Branch	IFSC SYNB0009062
4	Beneficiary Bank Branch Name	Transport Bhawan, New Delhi
5	Beneficiary Bank Address	Syndicate Bank transport Bhawan, 1st Parliament Street, New Delhi-110001

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:

Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000 And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC

- (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.

Annex-II

(Schedule-G)

(See Clause 19.2)

Form for Guarantee for Advance Payment

**The Managing Director,
NHIDCL,
3rd Floor, PTI Building, Sansad Marg,
New Delhi**

WHEREAS:

- (A) [name and address of contractor] (hereinafter called “**the Contractor**”) has executed an agreement (hereinafter called the “**Agreement**”) with the [NHIDCL], (hereinafter called “**the Authority**”) for the “Slope Protection at 4 locations in Jarwa Area of NH-223 (New NH-4) from Km 59.400 to Km 107.000 in the Union territory of Andaman and Nicobar Islands through Engineering, Procurement & Construction (EPC) Basis Contract”, 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:

Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000 And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC

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, 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 [General Manager in the National Highways Authority of India], that the Contractor has committed default in the due and faithful performance of all or any of its obligations for the repayment of the instalment 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 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 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

Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000 And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC

obligation under this Guarantee and the Bank hereby waives all of its rights 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 rights 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 90 (ninety) days after the end of the one year from the date of payment of the installment of the Advance Payment, as set forth in Clause 19.2 of the Agreement.
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 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.
10. This Guarantee shall come into force with immediate effect and shall remain in force and effect for up to the date specified in para 8 above or until it is released earlier by the Authority pursuant to the provisions of the Agreement.
11. This guarantee shall also be operatable at our Branch at New Delhi, from whom, confirmation regarding the issue of this guarantee or extension/ renewal thereof shall be made available on demand. In the contingency of this guarantee being invoked and payment thereunder claimed, the said branch shall accept such invocation letter and make payment of amounts so demanded under the said invocation
12. Intimation regarding issuance of this Bank Guarantee shall be sent to Authority's Bank through SFMS gateway as per the details below:

S.No.	Particulars	Details
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Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000 And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC

1	Name of Beneficiary	National Highways & Infrastructure Development Corporation Limited
2	Beneficiary Bank Account No.	90621010002659
3	Beneficiary Bank Branch	IFSC SYNB0009062
4	Beneficiary Bank Branch Name	Transport Bhawan, New Delhi
5	Beneficiary Bank Address	Syndicate Bank transport Bhawan, 1st Parliament Street, New Delhi-110001

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)

Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000 And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC Mode

Schedule-H

(See Clauses 10.1.4 and 19.3)

Contract Price Weightages

1. (i) The Contract Price for this Agreement is **Rs. Crore.**

1. (ii) 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	13.85%	B.1- Reconstruction/ New intermediate lane//bypass (Flexible pavement)	Part of retaining structures
		(1) Site Clearance & Dismantling	
		2. Earthwork	
		D-Re-Construction and New culverts on existing road, realignments, bypasses:	
		Culverts (lengths < 6m)	100%
Other works	86.15%	(i) Protection Work	
		(a) Retaining Earth Breast Wall	12.69%
		(b) Retaining Earth Toe Wall	13.76%
		(b) Retaining Wall	35.15%
		(ii) Erosion Control	6.67%
		(iii) River Training Works	0.86%
		(iv) Traffic Signs	4.95%
		(v) Road Marking	25.92%

Procedure of estimating the value of work done.

(i) Road works.

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

Table 1.3.1

Stage for Payment	Percentage weightage	Payment Procedure

Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000 And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC Mode

B.1- Reconstruction/ New 4-lane realignment/bypass (Flexible pavement)		
(1) Site Clearance & Dismantling	0.00%	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 10 (ten) percent of the total length.
(2)Earth Work	0.00%	
D-Re-construction and New culverts on existing road, realignments, bypasses:		
(1) Culverts (length < 6m)	100%	Cost of each completed culverts 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 culverts

@ 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:

$$\text{Cost per km} = P \times \text{weightage for road work} \times \text{weightage for bituminous work} \times (1/L)$$

Where P = Contract Price

$$L = \text{Total length in km}$$

Similarly, the rates per km for 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 purposes. The total length calculated here is only for payment purposes and will not affect and referred in other clauses of the Contract Agreement.

1.1.1 Other works.

Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000 And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC Mode

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

Table 1.3.4

Stage for Payment	Percentage weightage	Payment Procedure
(i) Protection Work		Unit of measurement is linear length in m. Payment shall be made on pro-rata basis on completion of a stage in a length of not less than 25% (ten per cent) of the total length & height at each site.
(a) Retaining Earth Breast Wall	12.69%	
(b) Retaining Earth Toe Wall	13.76%	
(C) Retaining Wall	35.15%	
(ii) Erosion Control	6.67%	
(iii) River Training Works	0.86%	Payments shall be made on completion of all guide bunds/river training works etc. complete in all respects as specified.
(iv) Traffic Signs	4.95%	Payment shall be made on the pro rata basis on completion of a stage in the length not less than 10 Km of the total length of the project.
(v) Road Marking	25.92%	

2. Procedure for payment for Maintenance

- (a) The cost for maintenance shall be as stated in Clause 14.1.1.
- (b) Payment for Maintenance shall be made in Monthly basis in accordance with the provisions of Clause 19.6 & 19.7 of the Contract Agreement.

Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000 And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC Mode

SCHEDULE-I

(See Clause 10.2)

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.

2. Additional Drawings

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.

Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000 And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC Mode

Annex-I

(Schedule-I)

List of Drawings

Plan and Elevation details enclosed.

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

SCHEDULE-J

(See Clause 10.3.2)

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 necessary particulars thereof.

2. Project Milestone-I

(i) Project Milestone-I shall occur on the date falling on the 30th (Thirty) 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 completion schedule in reference to Schedule-H Items, Stages and Sub-stages payment statements for an amount not less than 10% (ten per cent) of the Contract Price.

3. Project Milestone-II

(i) Project Milestone-II shall occur on the date falling on the 60th (Sixty) day from the Appointment Date (the “**Project Milestone-II**”).

(ii) Prior to the occurrence of Project Milestone-II, the Contractor shall have commenced construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements completion schedule in reference to Schedule-H Items, Stages and Sub-stages payment statements for an amount not less than 35% (thirty five per cent) 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 135th (one hundred and thirty five) 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 payment Statements for an amount not less than 60% (sixty per cent) of the Contract Price and should have started the construction of all project facilities.

5 Schedule Completion Date

(i) The Schedule Completion Date shall occur on the 180th (one hundred and eighty) 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 12.1.2)

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: all the tests specified in IRC code, manual and MORTH specifications for the road and Bridge works, 5th revision, 2013.

Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000 And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC Mode

- (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 equipments and the maximum permissible roughness for purposes of this Test shall be [2,000 (two thousand)] mm for each kilometre.
- (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) meters 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 following equipment at his own cost in the presence of contractor's representative.

Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000 And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC Mode

The first testing with the help of NSV shall be conducted at the time of issue of Completion Certificate.

SCHEDULE-L

(See Clause 12.2 and 12.4)

COMPLETION CERTIFICATE

1. I, (Name of the Authority's Engineer), acting as Authority's Engineer, under and in accordance with the Agreement dated (the "**Agreement**"), for construction of the "Slope Protection at 4 locations in Jarwa Area of NH-223 (New NH-4) from Km 59.400 to Km 107.000 in the Union territory of Andaman and Nicobar Islandsthrough Engineering, Procurement & Construction (EPC) Basis Contract 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 safety 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 theday of 20

SIGNED, SEALED AND DELIVERED

For and on behalf of
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 deduction 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

(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 crossfall, 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%

Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000 And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC Mode

(ii)	Any Defects in superstructures, bearings and sub-structures	10%
(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/5th km stones	5%
(f)	Miscellaneous Items	
(i)	Removal of dead animals, broken down/accidented 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,

L = Total length of the road,

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

Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000 And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC Mode

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

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

SCHEDULE-N

(See Clause 18.1.1)

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 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 Ministry of Road Transport and Highways (the “**Authority**”) and (the “**Contractor**”) for “Slope Protection at 4 locations in Jarwa Area of NH-223 (New NH-4) from Km 59.400 to Km 107.000 in the Union territory of Andaman and Nicobar Islands through Engineering, Procurement & Construction (EPC) Contract, and a copy of which is annexed hereto and marked as Annex-A to form part of this TOR.

(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 Clauses 1.2, 1.3 and 1.4 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:
- (a) Any Time extension;
 - (b) Any additional cost to be paid by the Authority to the Contractor;
 - (c) The Termination Payment; or
 - (d) issuance of Completion Certificate or
 - (e) Any other matter which is not specified in (a), (b) or (c) above and which creates an obligation or liability on either Party for a sum exceeding Rs. 5,000,000 (Rs. fifty lakh).
- (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 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 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 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 assurance. For purposes of this Paragraph 4.9, the tests specified in the IRC Special Publication-11 (Handbook of Quality Control for Construction of Roads and Runways) and the Specifications for Road and Bridge Works issued by MORTH (the "Quality Control Manuals") or any modification/substitution thereof shall be deemed to be tests conforming to Good Industry Practice for quality assurance.

(x) The Authority's Engineer shall test check at least 50 (fifty) percent of the quantity or number of tests prescribed for each category or type of test for quality control by the Contractor.

(xi) The timing of tests referred to in Paragraph 4.9, and the criteria for acceptance/rejection of their results shall be determined by the Authority's Engineer in accordance with the Quality Control Manuals. The tests shall be undertaken on a random sample basis and shall be in addition to, and independent of, the tests that

may be carried out by the 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 12.4.

(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 or Provisional Certificate, as the case may be. For carrying out its functions under this Paragraph 4.18 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 10.2.4 (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 19.4.1, 19.6.1, and 19.8.1)

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 19.3.1 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 13.2.3 (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 last 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 paragraph 1.1 (a) and (b) above shall cover the authority and the Contractor against all loss or damage from whatsoever 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 each Party's liability for any loss, damage, death or bodily injury which may occur to any physical property (except things insured under Paragraph 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 and occurring before the issue of the Performance Certificate. 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 as per the applicable laws of government and procedure in vogue.

(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 and 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 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 [construction of the ****section (km ** to km **) of

****] (the "**Project Highway**") 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)

Slope Protection/rebuilding, miscellaneous works at 4 locations, in Jarwa Area from Km 59.400 to Km 107.000 And road safety works & road marking between Km 59.400 to Km 107.00 and Km 138.3 to Km 155.00 of NH-223 (New NH-4) in the Union territory of Andaman and Nicobar Islands on EPC Mode
