

Schedules

Schedule A

(See Clause 2.1 and 8.1)

SITE OF THE PROJECT

1. The Site

- (i) Site of the Foot Track shall include the land, buildings, structures and road works as described in Annex-I of this Schedule-A.
- (ii) The dates of handing over the Right of Way to the Contractor are specified in Annex-II of this Schedule-A.
- (iii) An inventory of the Site including the land, buildings, structures, road works, trees and any other immovable property on, or attached to, the Site shall be prepared jointly by the Authority Representative and the Contractor, and such inventory shall form part of the memorandum referred to in Clause 8.2 (i) of this Agreement.
- (iv) The alignment plans of the Foot Track are specified in Annex-III. The Contractor, shall however, may improve the Foot Track Profile as indicated in Annex-III based on site/design requirement, yet the modified plan must pass within ROW acquired and through the obligatory points of NHIDCL, as per their strategical/ functional requirement.
- (v) The status of the environment and forest clearances obtained or awaited is given in Annex-IV.

Annex - I
(Schedule-A)

Site

1. SITE

The Site of the Foot Track comprises the section starting from Lamino and Terminating at Longchu .The Project track stretch is in the State of Arunachal Pradesh. The starting point at Lamino is having Longitude and Latitude (27°44'19.67"N, 92°57'16.32"E). The termination point at Longchu is having Longitude and Latitude (27°47'11.66"N, 92°52'42.01"E).The land, carriageway and structures comprising the Site are described below.

2. Land

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

S. No.	Chainage (km)		Already in possession	To be Acquired. ROW (m)	Remarks
	From	To			
1	0+000	60.514	NIL	5 meter for Track, 20 m x 20 m for staging area and 35 m x 35m for helipad	The foot track is to be constructed on new Greenfield alignment.

3. Carriageway

There is no existing carriageway.

4. Culverts and causeway:

The Site has the following exiting culverts:

Sl. No.	Existing Chainage	Type	Size	Remarks
NIL				

5. Track side drains

The details of the existing drains are as follows:

Sr. No.	Location		Type	
	From km	To km	Masonry/cc	Earthen
			(Pucca)	(Kutchra)
NIL				

6. Other structures

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:

Sl. No	Design Chainage		Length (Km)	Proposed ROW Width (m)	Date of Providing proposed ROW
	From	To			
i) 90% of ROW (full width)	0.000	60.514	54.514	5 meter for Track, 20 m x 20 m for staging area and 35 m x 35m for helipad	At Appointment Date
ii) Balance Right of way (width)	0.000	60.514	6.000		Within 150 days after the Appointed Date

Annex – III
(Schedule-A)
Alignment Plans

The alignment of the Foot Track is enclosed in the alignment plan. However, the Contractor may make minor changes / alter / modify the alignment plan as better engineering alternative by meeting codal provisions specified in document. In case of any modifications, the modified alignment must pass within ROW acquired and through the obligatory points in between points of NHIDCL but the start / end points cannot be modified / changed.

Annex – IV

(Schedule-A)

Environment Clearances

1. The environment and forest clearances obtained.

NIL (Being obtained)

2. Forest diversion is being obtained for required ROW/Land.

Schedule B

Development of the Project Highway

1 Development of the Foot Track

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

2 Specifications and Standards

The Foot Track 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 FOOT TRACK CONFIGURATION

1. New Foot Track

The Foot Track located in mountainous terrain shall follow the proposed alignment unless otherwise specified by the Authority and shown in the alignment plans specified in Annex III of Schedule-A. Geometric deficiencies, if any, in the existing horizontal and vertical profiles shall be corrected as per the prescribed standards for mountainous terrain to the extent land is available.

1.1 Width of Carriageway

S. No.	Design Chainage		Length	Width
	From	To	(km)	(m)
1	0.000	60.514	60.514	1.8

2. GEOMETRIC DESIGN AND GENERAL FEATURES

2.1 General

Geometric design and general features of the Foot Track shall be in accordance with IRC-52-2019 clause 6.13 & 6.14.

2.2 Right of Way

The Right of Way shall be 5 meter for the entire alignment.

2.3 Typical Cross-Sections of the Foot Track

As per TCS 1 to 5 enclosed.

2.4 Gradients

a) Ruling -10%

b) Limiting - 15%

c) Exceptional – 25% (maximum 50 m length)

3.0 TRACK EMBANKMENT AND CUT SECTION

3.1 The entire alignment shall be designed and constructed in such a manner that as far as possible it is in only cut sections, unless otherwise the terrain demands for an embankment construction, to be approved by AE.

4. PAVEMENT :- Pavement shall be provided as under:-

4.1 Pavement with paver block shall be constructed on this track. Notwithstanding anything contrary contained in this Agreement, the pavement shall be provided as given below.

Pavement Composition:-

Paver block (M25)	-	80 mm (minimum)
Sand/stone dust	-	50 mm (minimum)
GSB	-	150 mm (minimum)

Note: Well compacted subgrade, 200mm thick, shall be prepared to the satisfaction of AE.

4.2 Exceptional Gradients

The gradient has to be kept smooth and limited to a maximum of 15%. But under unavoidable circumstances, if the gradient has to be increased in limited stretches, in such cases, pavement with dressed stone in CM 1:4 shall be provided for such stretches, as per TCS 5 and as given below.

Pavement Composition:-

a) Dressed stone	-	200 mm (minimum)
b) GSB	-	100 mm (minimum)

Note: 1. Well compacted subgrade, 200mm thick, shall be prepared to the satisfaction of AE.

2. Dressed stone: Stones of adequate strength and minimum size 150 X 150 mm, properly dressed with adequate skid resistance in CM 1:4 to be provided over well compacted GSB.

5. TRACKSIDE DRAINAGE

Lined drain on the hill side and on both sides in box cut (if any) shall be provided along the complete length of the foot track as under:-

(a) Shape- Trapezoidal

(b) Top width- 30 cm

(c) Bottom width -20 cm

(d) Depth – 30 cm

6. DESIGN OF STRUCTURES

6.1 Culverts :

6.1.1 Overall width of all culverts shall be equal to the trackway width of the approaches.

6.1.2 New culverts shall be constructed at the required locations in such a manner that on an average, a minimum of four Slab/box culverts/Hume pipe must be available in each km length of the project.

The tentative number of the culverts to be provided are given in the table below:

S. No.	Type of Structure	Minimum Span	Numbers
i	RCC Box/Slab/Hume pipe	1.0 m	240

Note:- Hump pipe: Minimum NP-II Hume pipe to be provided.

6.1.3 Distance between any two culverts shall not be more than 300 m.

6.1.4 The span and location of culverts shall be as per profile/site requirement and shall be approved by AE.

6.2.1 New Foot Bridges

New foot bridges at the following locations on the Project track shall be constructed

Sl. No.	Design Chainage	Proposed Span (m)	Width (m)	Remarks
1.	5.250	30.0	2.4	As per Design No.2
2.	6.500	30.0	2.4	As per Design No.2
3.	13.141	90.0	2.4	As per Design No.3
4.	13.272	30.0	2.4	As per Design No.2
5.	13.430	30.0	2.4	As per Design No.2
6.	13.520	20.0	2.4	As per Design No.1
7.	16.150	20.0	2.4	As per Design No.1
8.	16.450	30.0	2.4	As per Design No.2
9.	16.515	90.0	2.4	As per Design No.3
10.	18.730	120.0	2.4	As per Design No.4
11.	18.520	30.0	2.4	As per Design No.2
12.	18.583	30.0	2.4	As per Design No.2

13.	18.770	30.0	2.4	As per Design No.2
14.	18.910	20.0	2.4	As per Design No.1
15.	21.035	30.0	2.4	As per Design No.2
16.	53.010	120.0	2.4	As per Design No.4
17.	55.101	120.0	2.4	As per Design No.4
Total =		870.0		

Note 1 :-The number, location i.e. chainage and proposed span mentioned above is approximate. The number of bridges, number of spans in each bridge and total length of each bridge shall be as per site requirement and provided as per approval of AE.

Note 2 :-Increase in the total length of all bridges provided beyond total length shown above shall not constitute a change of scope.

Note 3:- Any reduction in total length of all Bridges constructed at site shall constitute a negative change of scope.

Note 4:- The contractor may adopt any other type or design for construction of the foot bridges, subject to it being designed for load of 500 kg/ sq.m load and design being proof checked by proof consultant and reviewed by AE.

6.2.2 Drainage system for bridge decks

An effective drainage system for bridge decks shall be provided.

7. SIGNAGES AND TRACKING SIDE FURNITURE

- i. The provisions of the track furniture are given in the applicable TCS drawings. Typical details given in Annexure-II of Schedule-B.
- ii. Traffic Signs for Track Users would be provided as directed by AE, in accordance with good engineering practice. Minimum numbers to be provided are as under:-

Sr. No.	Type	Quantity	Remarks
I	Right hand curve	60	The quantities shown are minimum and contractor is required
Ii	Left hand curve	60	

Iii	Direction signs	20	to provide the requisite number of sign board as per site condition and as per approval of AE.
Iv	Rock slide Area	20	
V	Watch for wild life	4	
Vi	5 Km Stone	12	
Vii	Kilo meter Stone	48	
viii	Delineators	250	

8. Rain Shelters cum Staging camps

One staging camp shall be provided between Chainage 55.000 to 60.000 km as per Design attached as Annexure-II to Schedule- C. Each staging camp shall have 2 Nos. of Prefeb Shelters with Puf Panel Type-B3 having minimum outside size 7.5 m x 5.0 m with PUF Insulated Panel of 80 mm including Full length Verandah and without Toilets, as attached in Annexure-II to Schedule-C.

9. Helipad-1 Nos.

One Number of helipad to be constructed of size 25 X 25 m at location to be decided by AE in consultation with local ITBP personal and Air force Authority, having the following details :

- (i) Well compacted subgrade 300 mm thick to be prepared as per satisfaction of A.E.
- (ii) GSB of 150 mm thick in the whole area of 25 X 25 m.
- (iii) Concrete pavement of M25, 150 mm thick in 25X25 m area over the GSB.

10. PARAPET WALL

Complete length of the project shall have parapet wall in Gabion/Plum Concrete/ RRM in CM (1:4) on valley side of the following size.

- (i) Size -2m (length) X 0.6 m (high) X 0.5 m (width)
- (ii) Gap between walls – 1m.

Note: If the contractor chooses to construct the parapet walls of Gabion, then every 200m length of Parapet wall of Gabion, shall be followed by 50 m length of parapet wall of Plum Concrete/ RRM in CM (1:4)

11. PROTECTION WORK

I. The following minimum protection works shall be provided as tabulated below:

Sr. No.	Items	Unit
1	Breast wall in RRM/Gabion (2-3 m high)	5600 m
2	Retaining Wall in RRM / Gabion (height as per site requirement)	3400 m

Note 1- *The Contractor shall be responsible for accurate assessment of the actual requirement as per site situation & prepare designs for slope protection & stabilization and submit the same to the AE for review through the proof consultant and implement it accordingly thereafter.*

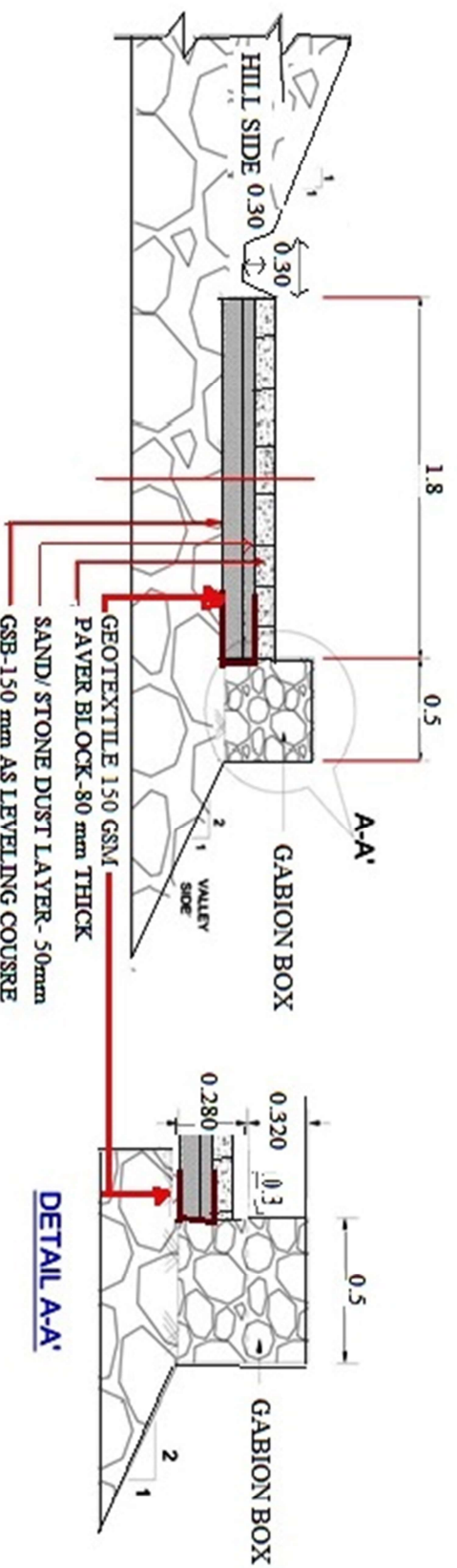
Note 2- *Any increase in quantity over and above the minimum qty. as mentioned in above table or change in specifications will not be considered as change of scope. Therefore, contractor shall make thorough investigation at site and assess the requirement of slope protection and slide prone zone and other safety features at his own before submission of bid.*

Note 3- *The length of Retaining wall shown above indicative and can be converted to Breast wall as per site requirement, with the approval of AE.*

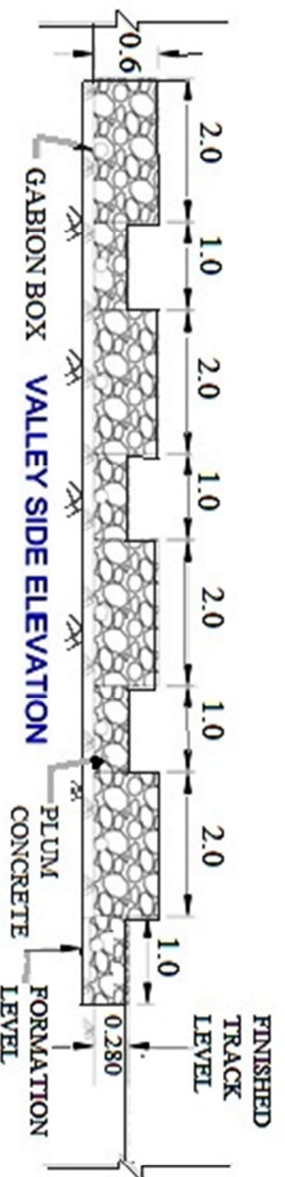
10. CHANGE OF SCOPE

The length of Structures and bridges specified herein above 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.

TCS-1

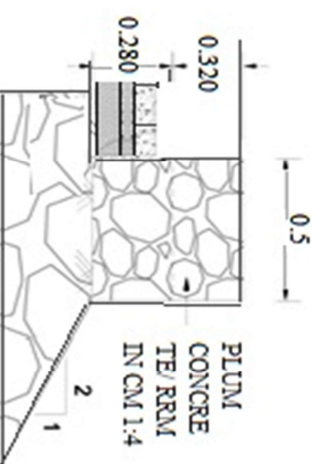
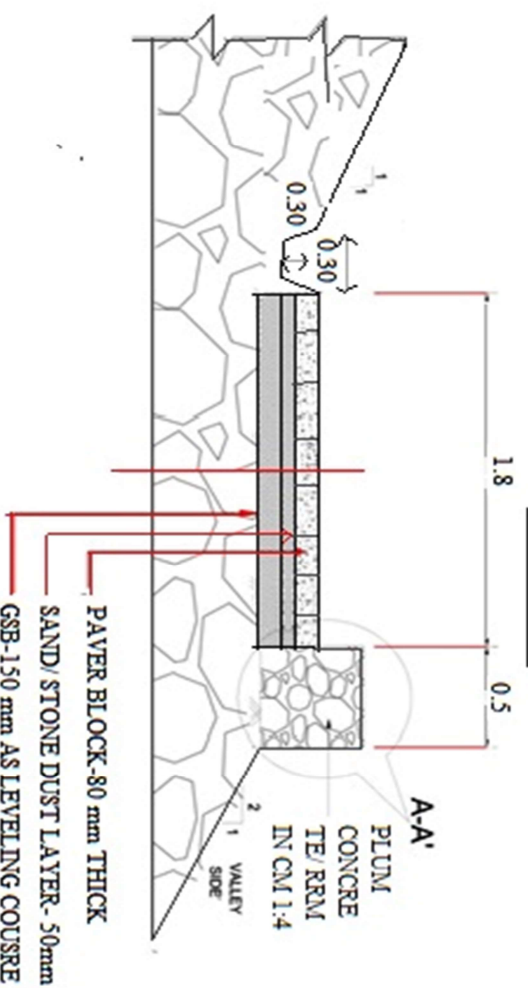


CROSS SECTION

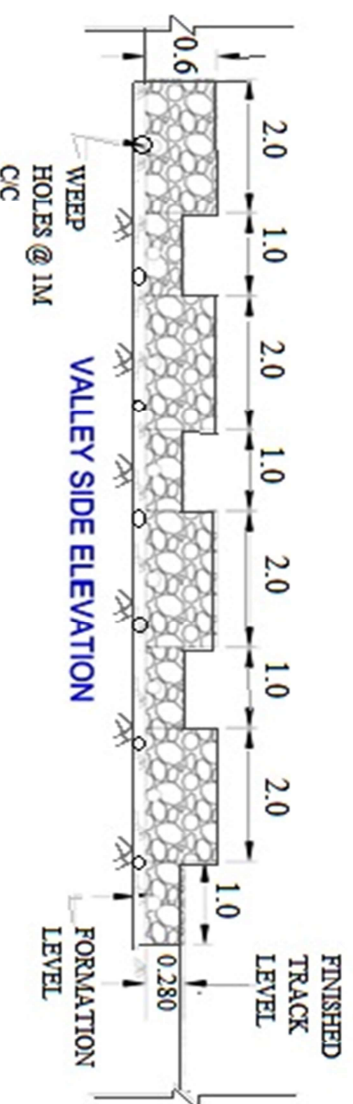


CLIENT	NAME OF THE WORK	TITLE
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED	CONSTRUCTION OF FOOT TRACK IN ARUNACHAL PRADESH	TYPICAL CROSS SECTION OF FOOT TRACK

TCS-2



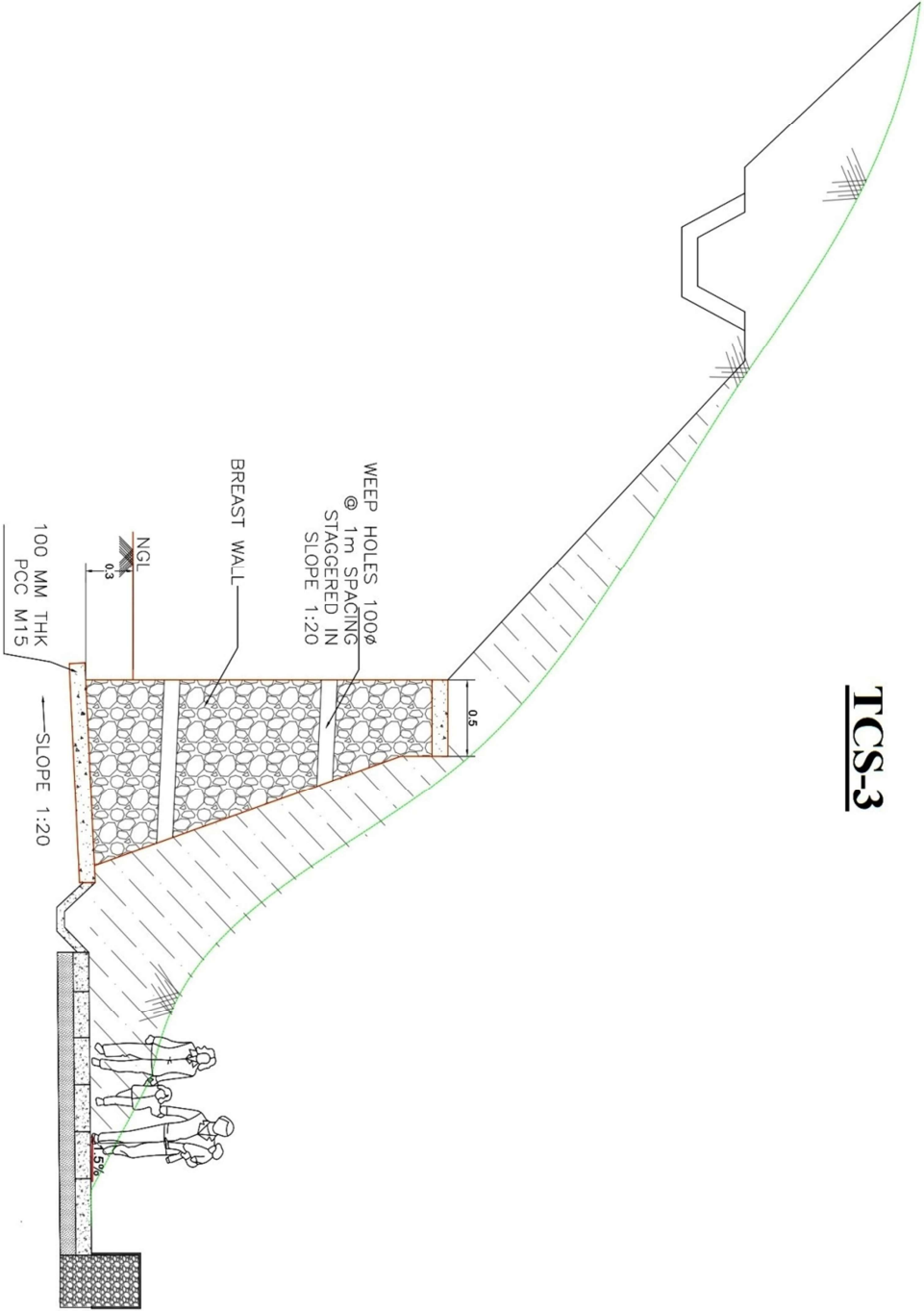
CROSS SECTION



DETAIL A-A'

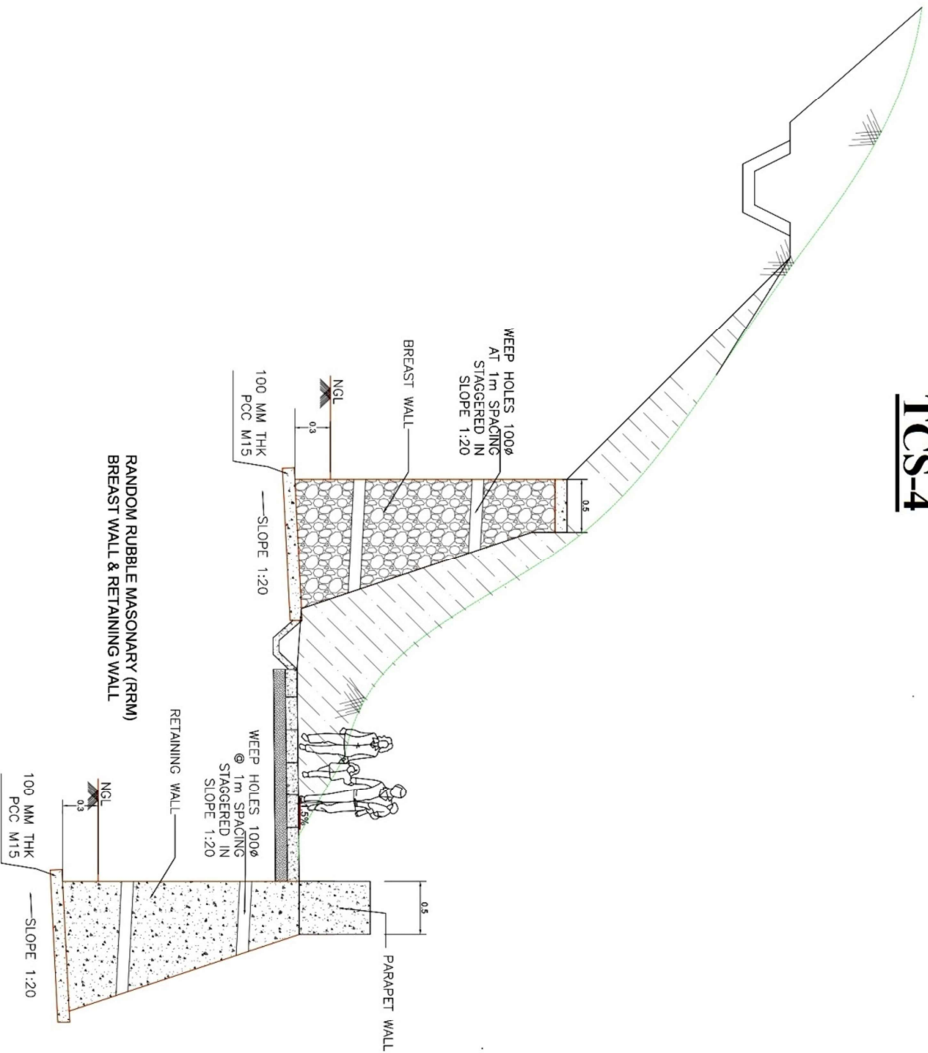
CLIENT	NAME OF THE WORK	TITLE
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED	CONSTRUCTION OF FOOT TRACK IN ARUNACHAL PRADESH	TYPICAL CROSS SECTION OF FOOT TRACK

TCS-3



CLIENT	NAME OF THE WORK	TITLE
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED	CONSTRUCTION OF FOOT TRACK IN ARUNACHAL PRADESH	TYPICAL CROSS SECTION OF FOOT TRACK

TCS-4

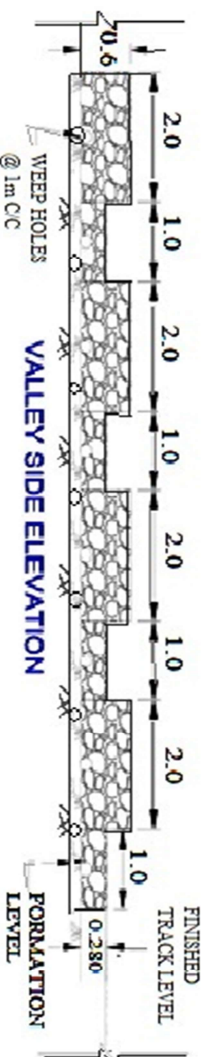
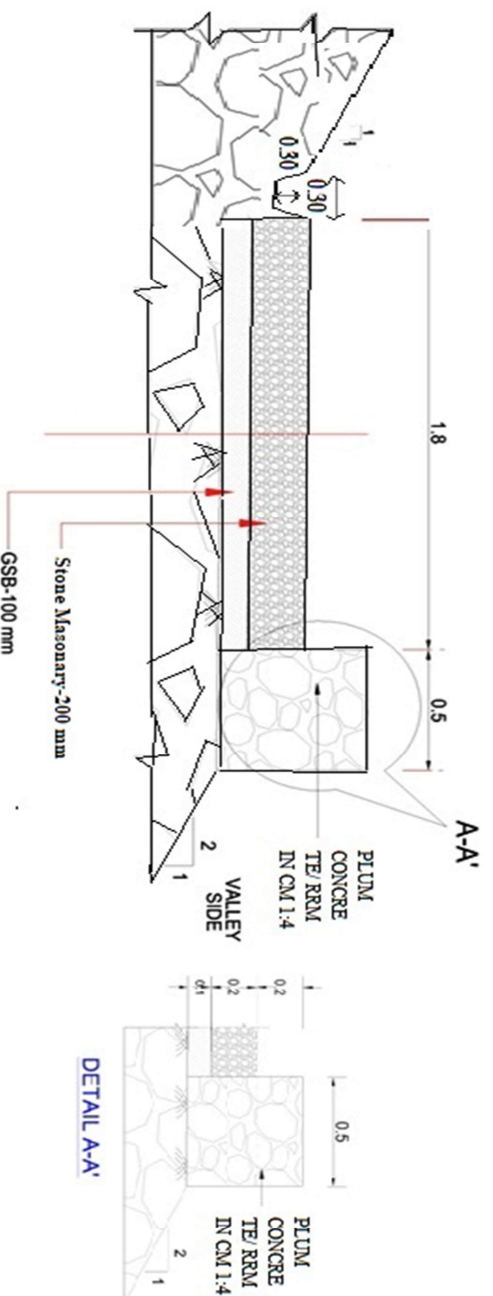


CLIENT
NATIONAL HIGHWAYS & INFRASTRUCTURE
DEVELOPMENT CORPORATION LIMITED

NAME OF THE WORK
CONSTRUCTION OF FOOT TRACK
IN ARUNACHAL PRADESH

TITLE
TYPICAL CROSS SECTION
OF FOOT TRACK

TCS-5



CLIENT	NAME OF THE WORK	TITLE
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED	CONSTRUCTION OF FOOT TRACK IN ARUNACHAL PRADESH	TYPICAL CROSS SECTION OF FOOT TRACK

Schedule C

(See Clause 2.1)

PROJECT FACILITIES

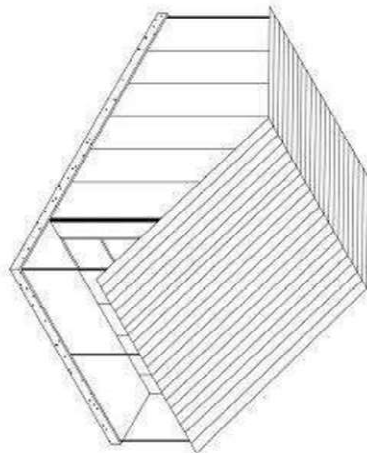
1 Project Facilities

Site office for Engineers and staff of Authority and Authority's Engineer

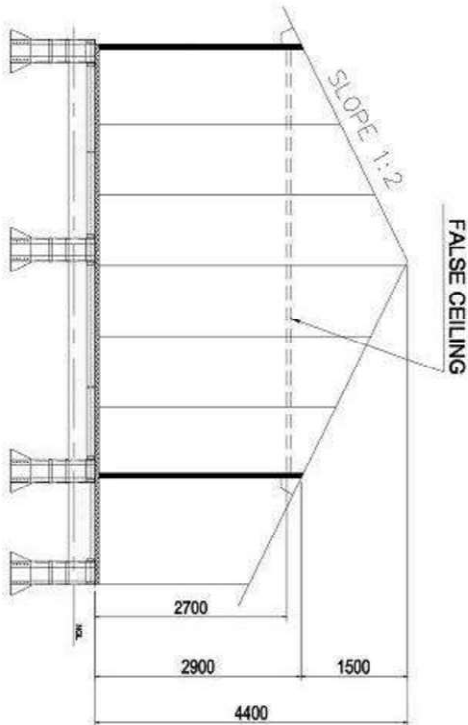
2 Description of Project Facilities

- a) The contractor shall provide 1No. site office cum living accommodation appropriate for weather condition of approximately 150 sqm area at location as specified by Authority/ Employer, including but not limited to following-
- b) The site office cum living accommodation shall be provided with all necessary furniture, light, heating, all office utilities, for working and living of four persons and provided with complete, water supply, sewerage and drainage etc. The contractor shall provide the office accommodation within 03 (Three) months from the date of commencement of work failing which the compensation @ Rs.50,000/- per month shall be recovered from the contractor.
- c) The contractor shall arrange to maintain the site offices which includes watch and ward, day to day up keeping of the building as per weather condition and surroundings, periodic white washing/ color washing of the building including utilities, payment of electrical/ water supply bills or arranging reliable power supply on 24 hrs basis etc.
- d) The cost of construction, cost of all furniture, fittings/ fixtures/ electrical fittings etc. and cost of maintenance and the related service charges of the building, payment of electricity bills/ water charges/ cost of arranging lighting/ heating etc. (till completion of project) is deemed to be included in the quoted rates of work and nothing extra shall be payable. After completion of work, the site office accommodation shall be the property of the contractor. This site office accommodation shall be maintained properly till completion of work and no claim whatsoever shall be entertained on the ground whether the delay in completion of work has been attributable to the Department or to the contractor.

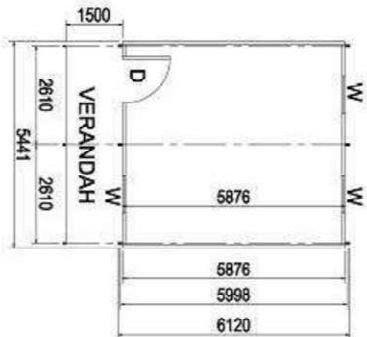
Annex II
(Schedule-C)



ISOMETRIC VIEW



SIDE VIEW



PLAN

SCHEDULE OF DOORS/ WINDOWS

S.NO.	MARKED	DESCRIPTION	SIZE	Nos.
1	D	DOOR	1.00X2.050M	01
2	W	WINDOW	0.86X0.85M	03
3	T	TRUSS	6.12M	03
4	P1	PURLIN MAIN	2566	24
5	P3	PURLIN EAVES	360	06
6	P4	PURLIN GABLE	300	16

TITLE TYPE B3, 80mm, PLAN

DEMO Gen DRG. No. PUF / 80mm / B3

DRAWN BY :

CHECKED BY :

APPROVED BY :

SCHEDULE - D

(See Clause 2.1)

SPECIFICATIONS AND STANDARDS

1. Construction

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

2. Design Standards

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

Manual of Specifications and Standards for Hill Roads (IRC: SP: 48-1998) where applicable and Guidelines for the alignment survey and geometric design of hill roads section 6.13 of IRC:52-2019, referred to herein as the Manual for project track and reference of other manuals given herein.

Any other manual or specification specified elsewhere in the bidding document and it also includes the references given therein.

Annex - I

(Schedule-D)

Specifications and Standards for Construction

Specifications and Standards for Construction

1 Specifications and Standards

All Materials, works and construction operations shall conform to the relevant IS Codes, the Manual of Specifications and Standards for Hill Roads (IRC:SP:48-1998) and IRC: 52 - 2019, and MORTH Specifications for Road and Bridge Works (5th Edition). Where the specification for a work is not given, Good Industry Practice shall be adopted to the satisfaction of the Authority's Engineer.

Schedule - E

(See Clauses 2.1 and 14.2)

Maintenance Requirements

1. Maintenance Requirements

- (i) The Contractor shall, at all times maintain the Foot Track 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 IS Code /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 Foot Track 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. Weekly inspection by the Contractor

The Contractor shall, through its engineer, undertake a weekly visual inspection of the Foot Track 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 May] every year in accordance with the guidelines contained in IRC: SP35. Report of this inspection together with details of proposed maintenance works as required on the basis of this inspection shall be sent to the Authority's Engineer before the [10th May] 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 October] 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 Foot Track 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)	Pavement	
(i)	Broken Paver blocks	7 (Seven) days
(ii)	Any cracks in Helipad Surface/ Stairs	15 (fifteen) days
(iii)	Any other defect/distress on track	15 (fifteen) days
(iv)	Removal of debris	7 (Seven) days
(b)	Side slopes, drains and culverts	
(i)	Rain cuts/gullies in slope	7 (seven) days
(ii)	Damage to or silting of culverts and side drains	7 (seven) days
(c)	Road side furniture including road sign and	
(i)	Repair/ Replacement	15 (fifteen) days

Nature of Defect or deficiency		Time limit for repair/rectification
(d)	Trees and Plantation	
(i)	Removal of fallen trees from track	4 (Four) days
(e)	Rest Area/ Staging Camp	
(i)	Defects in pre-fabricated shelters electrical, water and sanitary installations	7 (seven) days
Bridges		
(a)	Superstructure	
(i)	Any damage, cracks, spalling/ scaling	within 4 (Four) days
(ii)	Temporary measures	within 15 (fifteen) days or as specified by the Authority's Engineer
(iii)	Permanent measures	
(b)	Foundations	
(i)	Scouring and/or cavitation	15 (fifteen) days
(c)	Piers, abutments, return walls and wing walls	

Nature of Defect or deficiency		Time limit for repair/rectification
(i)	Cracks and damages including settlement and tilting, spalling, scaling	30 (thirty) days
(d)	Bearings (metallic) of bridges	
(i)	Deformation, damages, tilting or shifting of bearings	15 (fifteen) days Greasing of metallic bearings once in a year
(e)	Joints	
(i)	Malfunctioning of joints	15 (fifteen) days
(f)	Other items	
(i)	Deforming of pads in elastomeric bearings	15 (fifteen) days
(ii)	Gathering of dirt in bearings and joints; or clogging of spouts, weep holes and vent-holes	15 (fifteen) days
(iii)	Damage or deterioration in kerbs, parapets, handrails and crash barriers	7 (seven) days
(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 pitching, apron, toes, floor or guide bunds	30 (thirty) days
(vii)	Growth of vegetation affecting the structure or obstructing the waterway	15 (fifteen) days
	Protection work/ Miscellaneous	
(a)	Damage to retaining wall/breast wall/ Parapet Wall/ Railings	15 (fifteen) days
(b)	Landslides requiring clearance	7 (seven) days
(c)	Snow requiring clearance	7 (seven) days

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

Schedule - F

(See Clause 4.1 (vii)(a))

Applicable Permits

1. Applicable Permits

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

Schedule – G

(See Clauses 7.1 and 19.2)

Annex-I

(See Clause 7.1)

Form of Bank Guarantee

[Performance Security/Additional Performance Security]

[Managing Director,
NHIDCL, PTI Building, New Delhi]

WHEREAS:

- (A) _____ [name and address of contractor] (hereinafter called the “**Contractor**”) and [NHIDCL, PTI Building, New Delhi], (hereinafter called the “**Authority**”) have entered into an agreement (hereinafter called the “**Agreement**”) for **Construction of Foot Track from Lamino to Longchu from KM 0.000 to KM 60.514 in East Kameng District of the state of Arunachal Pradesh** on Engineering, Procurement and Construction (the “**EPC**”) basis, 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/ Defects Liability Period and Maintenance Period} (as defined in the Agreement) in a sum of 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**”*) 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 the {Construction Period/ Defects Liability Period and Maintenance Period} under and in accordance with the Agreement, and agrees and undertakes to pay to the Authority, upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the 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 [General Manager in the 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 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.

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 Guarantee shall cease to be in force and effect on ****\$. Unless a demand or claim under this Guarantee is made in writing before expiry of the Guarantee, the Bank shall be discharged from its liabilities hereunder.
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 authorised to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.
11. This Guarantee shall come into force with immediate effect and shall remain in force and effect for up to the date specified in paragraph 8 above or until it is released earlier by the Authority pursuant to the provisions of the Agreement.
12. This guarantee shall also be operable 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.
13. Bank Guarantee has been sent to authority's bank through SFMS gateway as per the details below: -

Sl. No	Particulars	Details
1	Name of the Beneficiary	National Highways and
		Infrastructure Development
		Corporation Limited
2	Beneficiary Bank Account No.	90621010002659
3	Beneficiary Bank Branch	IFSC CNRB0019062
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:

- (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

[Managing Director,
NHIDCL, PTI Building, New Delhi]

WHEREAS:

- (A) [name and address of contractor] (hereinafter called the “**Contractor**”) has executed an agreement (hereinafter called the “**Agreement**”) with the [NHIDCL, PTI Building, New Delhi], (hereinafter called the “**Authority**”) for the construction of the **Construction of Foot Track from Lamino to Longchu from KM 0.000 to KM 60.514 in East Kameng District of the state of Arunachal Pradesh** on Engineering, Procurement and Construction (the “**EPC**”) basis, subject to and in accordance with the provisions of the Agreement
- (B) In accordance with Clause 19.2 of the Agreement, the Authority shall make to the Contractor an interest bearing @*Bank Rate + 3%* advance payment (herein after called “**Advance Payment**”) equal to 10% (ten per cent) of the Contract Price; and that the Advance Payment shall be made in two installments subject to the Contractor furnishing an irrevocable and unconditional guarantee by a scheduled bank for an amount equivalent to 110% (one hundred and ten percent) of such installment to remain effective till the complete and full repayment of the installment of the Advance Payment as security for compliance with its obligations in accordance with the Agreement. The amount of {first/second} installment of the Advance Payment is Rs. ----- cr. (Rupees crore) and the amount of this Guarantee is Rs. ----- cr. (Rupees ----- crore) (the “**Guarantee Amount**”)^{\$}.
- (C) We, through our branch at (the “**Bank**”) have agreed to furnish this bank guarantee (*hereinafter called the “Guarantee”*) for the Guarantee Amount.

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

- 1 The Bank hereby unconditionally and irrevocably guarantees the due and faithful repayment on time of the aforesaid installment of the Advance Payment under and in accordance with the Agreement, and agrees and undertakes to pay to the

^{\$} The Guarantee Amount should be equivalent to 110% of the value of the applicable instalment.

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 installment of the Advance Payment under and in accordance with the Agreement shall be conclusive, final and binding on the Bank. The Bank further agrees that the Authority shall be the sole judge as to whether the Contractor is in default in due and faithful performance of its obligations during and under the Agreement and its decision that the Contractor is in default shall be final and binding on the Bank, notwithstanding any differences between the Authority and the Contractor, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or body, or by the discharge of the Contractor for any reason whatsoever.

- 2 In order to give effect to this Guarantee, the Authority shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Contractor and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.
- 3 It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.
- 4 The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Advance Payment or to extend the time or period of its repayment or to postpone for any time, and from time to time, any of the 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.
- 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 on ****. Unless a demand or claim under this Guarantee is made in writing on or before the aforesaid date, the Bank shall be discharged from its liabilities hereunder.
- 8 The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writing, and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.
- 9 Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred branch, which shall be deemed to have been duly authorised to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.
- 10 This Guarantee shall come into force with immediate effect and shall remain in force and effect up to the date specified in paragraph 8 above or until it is released earlier by the Authority pursuant to the provisions of the Agreement.
- 11 This guarantee shall also be operable 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 Bank Guarantee has been sent to authority's bank through SFMS gateway as per the details below: -

SI. No	Particulars	Details
1	Name of the Beneficiary	National Highways and Infrastructure Development Corporation Limited
2	Beneficiary Bank Account No.	90621010002659
3	Beneficiary Bank Branch	IFSC CNRB0019062
4	Beneficiary Bank Branch Name	Transport Bhawan, New Delhi
5	Beneficiary Bank Address	Syndicate Bank, Transport

		Bhawan, 1st Parliament street, New Delhi-110001
--	--	--

13.

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

SIGNED, SEALED AND DELIVERED

For and on behalf of the Bank by:

(Signature)

(Name)

(Designation)

(Code Number)

(Address)

NOTES:

- (i) The bank guarantee should contain the name, designation and code number of the officer(s) signing the guarantee.

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

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.

Schedule - H

SCHEDULE - H

(See Clauses 10.1. (iv) and 19.3)

Contract Price Weightages

1.1 The Contract price for this Agreement is Rs. cr

Proportions of the Contract Price for different stages of Construction of the Projects Highway shall be as specified below.

Item	Weightage in % of CP	Stage for Payment	Percentage weightage
1	2	3	4
Foot Track works including culverts.	58%	A. Construction of Foot track (Rigid Pavement)	
		(1) Earthwork up to bottom of the sub-grade	15.00%
		(2) Preparation of Subgrade	5.00%
		(3) Sub-Base Course	10.00%
		(4) Paver Blocks/ Dressed stones	60.00%
		B. New culverts	
		(1) Culverts (length <6m)	10.00%
Construction of Helipad	1%	C. Construction of Helipad	
		(1) Earthwork up to bottom of the sub-grade	15.00%
		(2) Preparation of Subgrade	5.00%
		3) Sub-Base Course	10.00%

		(4) Cement Concrete (CC M25)	70.00%
Bridges	20%	D. New foot bridges	
		(1) Foundation: On completion of the foundation work including foundations for wing and return walls, abutments, piers.	30.00%
		(2) Sub-structure: On completion of abutments, piers upto the abutment/ pier cap including wing/ return/ retaining wall upto top	30.00%
		(3) Super-structure: On completion of the super-structure in all respects including Girder, Deck slab, bearings	40.00%
Other works	21%		
		a) Retaining wall of RRM/Gabian	21.00%
		b) Breast wall of Gabian/RRM	40.00%
		c) Parapet wall	35.00%
		d) Stair case	0.00%
		e) Shelters cum Staging Camps	1.00%
		f) Track signs, marking, km stones, safety devices,	3.00%

Procedure of estimating the value of works done

(i) Track works.

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

Table 1.3.1

Stage of Payment	Percentage-Weightage	Payment Procedure
A. Construction of Foot track		Unit of measurement is linear length. Payment of each stage shall be made on pro-rata basis on completion of a stage in full length or 5(five) percent of length, whichever is less.
(1) Earthwork up to bottom of the sub-grade	15.00%	
(2) Preparation of Subgrade	5.00%	
(2) Sub-Base Course	10.00%	
(3) Paver Blocks/ Dressed stones	60.00%	
B. New culverts		Cost of each culverts shall be determined on pro rata basis with respect to the total number of culverts. Payments shall be made on the completion of 5 (Five) culverts.
(1) Culverts(length <6m)	10.00%	

Stage of Payment	Percentage-Weightage	Payment Procedure
B. Construction of Helipad		Unit of measurement is linear length. Payment of each stage shall be made on pro-rata basis on completion of a stage in full length or 5(five) percent of length, whichever is less.
(1) Earthwork up to bottom of the sub-grade	15%	
(2) Preparation of Subgrade	5%	
(2) Sub-Base Course	10%	
(3) Cement Concrete (CC M25)	70%	

Note: The length affected due to law and order problems or litigation during execution including the length not handed over to the Contractor under clause 8.3 of this Contract Agreement due to which the Contractor is unable to execute the work, may be deducted from the total project length for payment purposes and The total length calculated here is only for payment purposes and will not affect and referred in other clauses of the

Contract Agreement.

(ii) Minor Bridges and Underpasses/Overpasses.

Procedure for estimating the value of Minor bridge and Underpasses/Overpasses shall be as stated in table 1.3.2:

Table 1.3.2

Stage of Payment	Weightage	Payment Procedure
C. New Bridges		Foundation : Cost of each minor bridge shall be determined on pro-rata basis with respect to the total linear length (m) of the minor bridges.
(1) Foundation: On completion of the foundation work including foundations for wing and return walls, abutments, piers.	30.00%	Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 10% of the scope of foundation of each bridge. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2) Sub-structure: On completion of abutments, piers upto the abutment/ pier cap including wing/ return/ retaining wall upto top	30.00%	Sub-structure: Cost of each minor bridge shall be determined on pro- rata basis with respect to the total linear length (m) of the minor bridges. Payment against sub- structure shall be made on pro-rata basis on completion of sub-structure of a bridge.
(3) Super-structure: On completion of the super-structure in all respects including Girder, Deck slab, bearings 	40.00%	Super-structure: Payment shall be made on pro-rata basis on completion of super structure in all respects of a bridge. In case of structures where pre-cast girders have been proposed by the Contractor, 50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above

(iv) **Other works.**

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

Table 1.3.4

Stage of Payment	Weightage	Payment Procedure
a)Retaining wall (Refer Structure)	21.00%	Unit of measurement is linear length. Payment shall be made on pro rata basis on completion of a stage in a length of not less than 5% (Five per cent) of the total length.
b)Breast wall	40.00%	
c)Parapet wall	35.00%	
d)Stair case	0.00%	
e) Shelters cum Staging Camps	1.00%	Payment of measure will be on completion of one staging Camp.
f) Track signs, markings, km stones, safety devices,...	3.00%	Payment of measure will be on completion of complete work.

Schedule - I

(See Clause 10.2 (iv))

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.

Annex - I

(Schedule - I)

List of Drawings

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

1. A minimum list of the drawings of the various components/ elements of the project highway and project facility required to be submitted by the Contractor is given below:
 - (a) Drawing of plan, profile and cross sections.
 - (b) Drawings of cross drainage works.
 - (c) Drawing of typical cross sections
 - (d) Drawing of foot track furniture items including signage, safety barriers, etc.
 - (e) Drawings of foot track drainage measures
 - (f) Drawings of typical details slope protection measures.

Schedule - J

(See Clause 10.3 (ii))

Project Completion Schedule

1. Project Completion Schedule

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

2. Project Milestone-I

- (i) Project Milestone-I shall occur on the date falling on the 192th day from the Appointed Date (the “**Project Milestone-I**”).
- (ii) Prior to the occurrence of Project Milestone-I, the Contractor shall have commenced construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 10% (ten per cent) of the Contract Price.

3. Project Milestone-II

- (i) Project Milestone-II shall occur on the date falling on the 239th day from the Appointed Date (the “**Project Milestone-II**”).
- (ii) Prior to the occurrence of Project Milestone-II, the Contractor shall have continued with construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 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 467th day from the Appointed Date (the “**Project Milestone-III**”).
- (ii) Prior to the occurrence of Project Milestone-III, the Contractor shall have continued with construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 70% (seventy per cent) of the Contract Price and should have started construction of all project facilities.

5. Scheduled Completion Date

- (i) The Scheduled Completion Date shall occur on the 549th [Scheduled Construction Period] day from the Appointed Date.
- (ii) On or before the Scheduled Completion Date, the Contractor shall have completed construction in accordance with this Agreement.

6. Extension of time

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

Schedule - K

(See Clause 12.1 (ii))

Tests on Completion

1. Schedule for Tests

- (i) The Contractor shall, no later than 30 (thirty) days prior to the likely completion of construction, notify the Authority's Engineer and the Authority of its intent to subject the Foot Track 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 Foot Track to Tests at any time after 10 (ten) days from the date of such notice, and upon receipt of such notice, the Authority's Engineer shall, in consultation with the Contractor, determine the date and time for each Test and notify the same to the Authority who may designate its representative to witness the Tests. The Authority's Engineer shall thereupon conduct the Tests itself or cause any of the Tests to be conducted in accordance with Article 12 and this Schedule-K.

2. Tests

- (i) Visual and physical test: The Authority's Engineer shall conduct a visual and physical check of construction to determine that all works and equipment forming part thereof conform to the provisions of this Agreement. The physical tests shall include [***].
- (ii) Deleted.
- (iii) Tests for bridges: All major and minor bridges shall be subjected to the rebound hammer and ultrasonic pulse velocity tests, to be conducted in accordance with the procedure described in Special Report No. 17: 1996 of the IRC Highway Research Board on Nondestructive Testing Techniques, at two spots in every span, to be chosen at random by the Authority's Engineer. Bridges with a span of 15 (fifteen) metres or more shall also be subjected to load testing.
- (iv) Other tests: The Authority's Engineer may require the Contractor to carry out or cause to be carried additional tests, in accordance with Good Industry Practice, for determining the compliance of the Foot Track 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 Foot Track 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 Foot Track 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.

Sr. No.	Key metrics of Asset	Equipment to be used	Frequency of condition survey
1	Surface defects of pavement	Physical & Visual Inspection	At least twice a year
2	Bridges	Physical & Visual Inspection	At least twice a year
3	Road signs	Retro-reflectometer	At least twice a year

Schedule - L

(See Clause 12.2)

Completion Certificate

- 1 I, (Name of the Authority's Engineer), acting as the Authority's Engineer, under and in accordance with the Agreement dated..... (the "**Agreement**"), for [**"Construction of Foot Track from Lamino to Longchu from KM 0.000 to KM 60.514 in East Kameng District of the state of Arunachal Pradesh"**] on Engineering, Procurement and Construction (EPC) basis through (Name of Contractor), hereby certify that the Tests in accordance with Article 12 of the Agreement have been successfully undertaken to determine compliance of the Foot Track with the provisions of the Agreement, and I am satisfied that the Foot Track can be safely and reliably placed in service of the Users thereof.
- 2 It is certified that, in terms of the aforesaid Agreement, all works forming part of Foot Track have been completed, and the Foot Track is hereby declared fit for entry into operation on this the day of 20... , Scheduled Completed Date for which was the day of20....

SIGNED, SEALED AND DELIVERED

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

(Signature)

(Name)

(Designation) (Address)

Schedule - M

(See Clauses 14.6, 15.2 and 19.7)

Payment Reduction for Non-Compliance

1. Payment reduction for non-compliance with the Maintenance Requirements

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

2. Percentage reductions in lump sum payments on monthly basis

- (i) The following percentages shall govern the payment reduction:

S. No.	Item/Defect/Deficiency	Percentage
(a) Pavement		
(i)	Paver Block	15%
(ii)	Any cracks in Helipad Surface/ Stairs	5%
(b) Side slops & drains		
(i)	Rain cuts/ gullies in slope	10%
(ii)	Damage to or silting of side drains	5%
(c) Bridges and Culverts		
(i)	Desilting, cleaning, vegetation growth, damaged pitching, flooring, parapets, wearing course, footpaths, any damage to foundations	20%
(ii)	Any Defects in superstructures, bearings and sub-structures	10%

S. No.	Item/Defect/Deficiency	Percentage
(iii)	Painting, repairs/replacement kerbs, railings, parapets, guideposts	5%
(d) Drains		
(i)	Cleaning and repair of drains	5%
(e) Foot Track Furniture		
(i)	Cleaning, painting, replacement of foot track signs, delineators, Foot Track markings, 200 m/km/5 th km stones	5%
(f) Miscellaneous Items		
(i)	Damage or deterioration in kerbs, parapets, handrails	10%
(ii)	Growth of vegetation affecting the structure or obstructing the waterway.	5%
(g) Defects in Other Project Facilities		5%

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

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

Where,

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

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

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

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

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

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

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

Schedule - N

(See Clause 18.1 (i))

Selection of Authority's Engineer

1. Selection of Authority's Engineer

- (i) The provisions of the Model Request for Proposal for Selection of Technical Consultants, issued by the Ministry of Finance in May 2009, or any substitute thereof shall apply for 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 [NHIDCL, PTI Building, New Delhi 110001] (the “**Authority**”) and (the “**Contractor**”) for **Construction of Foot Track from Lamino to Longchu from KM 0.000 to KM 60.514 in East Kameng District of the state of Arunachal Pradesh.**, and a copy of which is annexed hereto and marked as Annex-A to form part of this TOR.

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

- (ii) The TOR shall apply to construction and maintenance of the Foot Track.

2. Definitions and interpretation

- (i) The words and expressions beginning with or in capital letters and not defined herein but defined in the Agreement shall have, unless repugnant to the context, the meaning respectively assigned to them in the Agreement.
- (ii) References to Articles, Clauses and Schedules in this TOR shall, except where the context otherwise requires, be deemed to be references to the Articles, Clauses and Schedules of the Agreement, and references to Paragraphs shall be deemed to be references to Paragraphs of this TOR.
- (iii) The rules of interpretation stated in Article 1 of the Agreement shall apply, mutatis mutandis, to this TOR.

3. General

- (i) The Authority’s Engineer shall discharge its duties in a fair, impartial and efficient manner, consistent with the highest standards of professional integrity and Good Industry Practice.
- (ii) The Authority’s Engineer shall perform the duties and exercise the authority in accordance with the provisions of this Agreement, but subject to obtaining prior written approval of the Authority before determining:
- (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), (c) or (d) above and which creates a financial liability on either Party.
- (iii) The Authority's Engineer shall submit regular periodic reports, at least once every month, to the Authority in respect of its duties and functions under this Agreement. Such reports shall be submitted by the Authority's Engineer within 10 (ten) days of the beginning of every month.
 - (iv) The Authority's Engineer shall inform the Contractor of any delegation of its duties and responsibilities to its suitably qualified and experienced personnel; provided, however, that it shall not delegate the authority to refer any matter for the Authority's prior approval in accordance with the provisions of Clause 18.2.
 - (v) The Authority's Engineer shall aid and advise the Authority on any proposal for Change of Scope under Article 13.
 - (vi) In the event of any disagreement between the Parties regarding the meaning, scope and nature of Good Industry Practice, as set forth in any provision of the Agreement, the Authority's Engineer shall specify such meaning, scope and nature by issuing a reasoned written statement relying on good industry practice and authentic literature.

4. Construction Period

- (i) During the Construction Period, the Authority's Engineer shall review and approve the Drawings furnished by the Contractor along with supporting data, including the geo-technical and hydrological investigations, characteristics of materials from borrow areas and quarry sites, topographical surveys, and the recommendations of the Safety Consultant in accordance with the provisions of Clause 10.1 (vi). The Authority's Engineer shall complete such review and approval and send its observations to the Authority and the Contractor within 15 (fifteen) days of receipt of such Drawings; provided, however that in case of a Major Bridge or Structure, the aforesaid period of 15 (fifteen) days may be extended upto 30 (thirty) days. In particular, such comments shall specify the conformity or otherwise of such Drawings with the Scope of the Project and Specifications and Standards.
- (ii) The Authority's Engineer shall review and approve any revised Drawings sent to it by the Contractor and furnish its comments within 10 (ten) days of receiving such Drawings.
- (iii) The Authority's Engineer shall review and approve the Quality Assurance Plan submitted by the Contractor and shall convey its comments to the Contractor within a period of 21 (twenty one) days stating the modifications, if any, required thereto.

- (iv) The Authority's Engineer shall complete the review and approve of the methodology proposed to be adopted by the Contractor for executing the Works, and convey its comments to the Contractor within a period of 10 (ten) days from the date of receipt of the proposed methodology from the Contractor.
- (v) The Authority's Engineer shall grant written approval to the Contractor, where necessary, for interruption and diversion of the flow of traffic in the existing lane(s) of the Foot Track 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 Foot Track 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 (ix), 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 (ix), 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 Foot Track, 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 Foot Track is not feasible within the time specified in the Agreement, it shall require the Contractor to indicate within 15 (fifteen) days the steps proposed to be taken to expedite progress, and the period within which the Project Completion Date shall be achieved. Upon receipt of a report from the Contractor, the Authority's Engineer shall review the same and send its comments to the Authority and the Contractor forthwith.
- (xv) The Authority's Engineer shall obtain from the Contractor a copy of all the Contractor's quality control records and documents before the Completion Certificate is issued pursuant to Clause 12.2.
- (xvi) Authority's Engineer may recommend to the Authority suspension of the whole or part of the Works if the work threatens the safety of the Users and pedestrians. After the Contractor has carried out remedial measure, the Authority's Engineer shall inspect such remedial measures forthwith and make a report to the Authority recommending whether or not the suspension hereunder may be revoked.
- (xvii) In the event that the Contractor carries out any remedial measures to secure the safety of suspended works and Users, and requires the Authority's Engineer to inspect such works, the Authority's Engineer shall inspect the suspended works within 3 (three) days of receiving such notice, and make a report to the Authority forthwith, recommending whether or not such suspension may be revoked by the Authority.
- (xviii) The Authority's Engineer shall carry out, or cause to be carried out, all the Tests specified in Schedule-K and issue a Completion Certificate, as the case may be. For carrying out its functions under this Paragraph 4 (xviii) and all matters incidental thereto, the Authority's Engineer shall act under and in accordance with the provisions of Article 12 and Schedule-K.

5. Maintenance Period

- (i) The Authority's Engineer shall aid and advise the Contractor in the preparation of its monthly Maintenance Programme and for this purpose carry out a joint monthly inspection with the Contractor.
- (ii) The Authority's Engineer shall undertake regular inspections, at least once every month, to evaluate compliance with the Maintenance Requirements and submit a Maintenance Inspection Report to the Authority and the Contractor.

- (iii) The Authority's Engineer shall specify the tests, if any, that the Contractor shall carry out, or cause to be carried out, for the purpose of determining that the Foot Track 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 Foot Track for undertaking maintenance/repair thereof, and shall grant permission with such modifications, as it may deem necessary, within 5 (five) days of receiving a request from the Contractor. Upon expiry of the permitted period of closure, the Authority's Engineer shall monitor the reopening of such lane(s), and in case of delay, determine the Damages payable by the Contractor to the Authority under Clause 14.5.

6. Determination of costs and time

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

7. Payments

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

Contractor, after adjustments in accordance with the provisions of Clause 19.10.

- (iii) The Authority's Engineer shall, within 15 (fifteen) days of receipt of the Monthly Maintenance Statement from the Contractor pursuant to Clause 19.6, verify the Contractor's monthly statement and certify the amount to be paid to the Contractor in accordance with the provisions of the Agreement.
- (iv) The Authority's Engineer shall certify final payment within 30 (thirty) days of the receipt of the final payment statement of Maintenance in accordance with the provisions of Clause 19.16.

8. Other duties and functions

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

9. Miscellaneous

- (i) A copy of all communications, comments, instructions, Drawings or Documents sent by the Authority's Engineer to the Contractor pursuant to this TOR, and a copy of all the test results with comments of the Authority's Engineer thereon, shall be furnished by the Authority's Engineer to the Authority forthwith.
- (ii) The Authority's Engineer shall retain at least one copy each of all Drawings and Documents received by it, including 'as-built' Drawings, and keep them in its safe custody.
- (iii) Within 90 (ninety) days of the Project Completion Date, the Authority's Engineer shall obtain a complete set of as-built Drawings, in 2 (two) hard copies and in micro film form or in such other medium as may be acceptable to the Authority, reflecting the Foot Track as actually designed, engineered and constructed, including an as- built survey illustrating the layout of the Foot Track and setback lines, if any, of the buildings and structures forming part of Project Facilities; and shall hand them over to the Authority against receipt thereof.
- (iv) The Authority's Engineer, if called upon by the Authority or the Contractor or both, shall mediate and assist the Parties in arriving at an amicable settlement of any Dispute between the Parties.
- (v) The Authority's Engineer shall inform the Authority and the Contractor of any event of Contractor's Default within one week of its occurrence.

Schedule - O

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

Forms of Payment Statements

1. Stage Payment Statement for Works

The Stage Payment Statement for Works shall state:

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

2. Monthly Maintenance Payment Statement

The monthly Statement for Maintenance Payment shall state:

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

3. Contractor's claim for Damages

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

Schedule - P

(See Clause 20.1)

Insurance

1. Insurance during Construction Period

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

2. Insurance for Contractor's Defects Liability

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

3. Insurance against injury to persons and damage to property

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

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

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

4. Insurance to be in joint names

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

Schedule-Q

(See Clause 14.10)

Tests on Completion of Maintenance Period

1. Riding Quality test:

Riding quality test: Riding quality of each lane of the carriageway shall be checked with the help of a calibrated bump integrator 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 Foot Track from Lamino to Longchu from KM 0.000 to KM 60.514 in East Kameng District of the state of Arunachal Pradesh**] (the "**Project**") 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 Foot Track with the provisions of the Agreement and I hereby certify that the Authority has taken over the Foot Track from the Contractor on this day.....

SIGNED, SEALED AND DELIVERED

(Signature)

(Name and designation of Authority's Representative)

(Address)

Annexure (Plan & Profile)
(Schedule-A)