Bengaluru Smart Infrastructure Limited (B-SMILE)

International Competitive Bidding under

Single-Stage Two Envelope

Bidding Process

for

Design and Construction of 3-Lane Underground Twin Tunnel Road from Hebbal Esteem Mall junction (Km. 0+000) to Silk Board KSRP Junction (Km.16+745) along with 3-lane/2-lane entry & exit ramps including operation and maintenance in Bengaluru City (North South Corridor) – on MODIFIED BOOT MODE.

Package-2 Seshadri Road (Km 8.748) to Silk Board (Km 16.745).

SCHEDULES TO CONCESSION AGREEMENT

(Schedules E to Y)

VOLUME -3 B

June 2025

SCHEDULE –E

(See Clause 4.1.3)

APPLICABLE PERMITS

1 Applicable Permits

The Concessionaire shall obtain, as required under the Applicable Laws, the following Applicable Permits on or before the Appointed Date, save and except to the extent of a waiver granted by the Authority in accordance with Clause 4.1.3 of the Agreement:

(a) Permission of the State Government for extraction of boulders from quarry;

(b) Permission of Village Panchayat and Pollution Control Board for installation ofcrushers;

(c) License for use of explosives;

(d) License from Inspector of factories or other competent authority for setting up Batching Plant;

(e) Clearance of Pollution Control Board for setting up Batching Plant;

(f) Clearance of Village Panchayats and Pollution Control Board for Asphalt Plant;

(g) Clearance of Pollution Control Board for Asphalt Plant;

(h) Clearance of Pollution Control Board for installation of diesel generator sets;

(i) Fire safety clearance from fire authorities;

(j) Permit for employing unskilled/semiskilled labor during day/night;

(k) Permission of Village Panchayat and State Government for borrow earth;

(l) Permission of City Authorities for disposal of underground water;

(m) Clearance of Village Panchayats and Pollution Control Board for Dumping Ground for Muck; and

(n) Any other permits or clearances required under Applicable Laws.

Provided that the above Applicable Permits shall be either in the name of Concessionaireor party having a valid agreement with the Concessionaire.

2. The Authority shall obtain, as required under the Applicable Laws, the following Applicable Permits

(a) Permission of the state government for drawing water from river / reservoir

(b) Permission of state government for cutting trees

(c) Clearance for any urban structure affecting the landscape / environment from the concerned authority.

(d) Permissions from the public utilities for diversion of utilities including reinstatement/reconstruction to original specifications; and

(e) Approval of traffic police for diversions and running of vehicles on specified routes.

SCHEDULE –F

Annexure I of Schedule F

(See Clause 9.1)

PERFORMANCE SECURITY

Superintending Engineer, B-SMILE

Bengaluru Smart Infrastructure Limited (B-SMILE)

3rd Floor, 30/1, Thimmaiah Road, Millers Tank Bund Area,

Vasanthnagar, Bengaluru- 560 052

Email – xxxx@xxxx

WHEREAS:

(A) …….. (the "**Concessionaire**") and the Superintending Engineer, Bengaluru Smart Infrastructure Limited (B-SMILE) (the "**Authority**") have entered into a Concession Agreement dated…….. (the "**Agreement**") whereby the Authority has agreed to theConcessionaire undertaking (A) Design and Construction of 3-Lane Underground Twin Tunnel Road from Hebbal Esteem Mall junction (Km. 0+000) to Silk Board KSRP Junction (Km.16+745) along with 3-lane/2-lane entry & exit ramps including operation and maintenance in Bengaluru City (North South Corridor) – on MODIFIED BOOT MODE. Package 1: Hebbal Esteem Mall junction (Km. 0+000) to Seshadri Road, Race Course Junction (Km 8.748).

The Agreement requires the Concessionaire to furnish a Performance Security to the Authority in a sum of Rs. ***** cr. (Rupees ***** crore) (the "**Guarantee Amount**") as security for due and faithful performance of its obligations, under and in accordancewith the Agreement, during the Construction Period (as defined in the Agreement).

(B) We, ……. through our Branch at ……. (the "**Bank**") have agreed to furnish this Bank Guarantee by way of Performance Security.

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

1. The Bank hereby unconditionally and irrevocably guarantees the due and faithfulperformance of the Concessionaire's obligations during the Construction Period, underand in accordance with the Agreement, and agrees and undertakes to pay to theAuthority, upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Concessionaire, such sumor sums upto an aggregate sum of the Guarantee Amount as the Authority shall claim, without the Authority being required to prove or to show grounds or reasons for its demand and/or for the sum specified therein.

2. A letter from the Authority, under the hand of an Officer not below the rank of Superintending Engineer in Bengaluru Smart Infrastructure Limited (B-SMILE), that the Concessionaire has committed default in the due and faithful performance of all or any of its obligations under and in accordance with the Agreement shall be conclusive, final and binding on the Bank. The Bank further agrees that the Authority shall be the sole judge as to whetherthe Concessionaire is in default in due and faithful performance of its obligations duringthe Construction Period under the Agreement and its decision that the Concessionaire is in default shall be final, and binding on the Bank, notwithstanding any differences between the Authority and the Concessionaire, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or body, or by the dischargeof the Concessionaire for any reason whatsoever.

3. The Bank further also agrees that the Authority at its option shall be entitled to in enforce this Guarantee against the Bank as principal debtor, in the first instance without proceeding against the Concessionaire and notwithstanding any security or other guarantee that the Authority may have in relation to the Concessionaire's liability.

4. 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 Concessionaireand/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.

5. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority toproceed against the Concessionaire before presenting to the Bank its demand under thisGuarantee.

6. The Authority shall have the liberty, without affecting in any manner the liability of theBank under this Guarantee, to vary at any time, the terms and conditions of the Agreement or to extend the time or period for the compliance with, fulfilment and/ or performance of all or any of the obligations of the Concessionaire contained in the Agreement or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Authority against the Concessionaire, and either to enforce orforbear 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 fromits liability and obligation under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Concessionaire or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Bankfrom its liability and obligation under this Guarantee and the Bank hereby waives all ofits rights under any such law.

7. This Guarantee is in addition to and not in substitution of any other guarantee or securitynow or which may hereafter be held by the Authority in respect of or relating to the Agreement or for the fulfilment, compliance and/or performance of all or any of the obligations of the Concessionaire under the Agreement.

8. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guarantee Amount and this Guarantee will remain in forceuntil the earlier of the 1st (first) anniversary of the Appointed Date or compliance of theconditions specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee, no later than 6 (six) months from the date of expiry of this Guarantee, all rights of the Authority under this Guaranteeshall be forfeited and the Bank shall be relieved from its liabilities hereunder.

9. The Performance Security shall cease to be in force and effect when the Concessionaire shall have expended on Project construction an aggregate sum not less than 40% (forty per cent) of the Total Project Cost which is deemed to be Rs.*** cr. (Rupees ***** crore) for the purposes of this Guarantee, and provided the Concessionaire is not in breach of this Agreement. Upon request made by the Concessionaire for release of the Performance Security along with the particulars required hereunder, duly certified by a statutory auditor of the Concessionaire, the Authority shall release the Performance Security forthwith.

10. 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.

11. 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 beenduly 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 beendelivered 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 certificatesigned by an officer of the Authority that the envelope was so posted shall be conclusive.

12. This Guarantee shall come into force with immediate effect and shall remain in force and effect for a period of one year and six months or until it is released earlier by the Authority pursuant to the provisions of the Agreement.

13. This guarantee shall also be operatable at our…….. Branch at Bengaluru 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.

14. The guarantor/bank hereby confirms that it is on the SFMS (Structural Finance Messaging System) platform & shall invariably send an advice of this Bank Guarantee to the designated bank of B-SMILE, details of which is as under:

S. No.	Particulars	Details
1.	Name of Beneficiary	……
2.	Name of Bank	……
3.	Account No.	……
4.	IFSC Code	……

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

SIGNED, SEALED AND DELIVERED

For and on behalf ofthe BANK by:

(Signature)

(Name)

(Designation)

(Code Number)

(Address)

NOTES:

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

(ii) The address, telephone number and other details of the Head Office of the Bank as wellas of issuing Branch should be mentioned on the covering letter of issuing Branch.

Annexure I of Schedule F(See Clauses 9.1)

FORM OF SURETY BOND

Performance Security

[Deleted]

SCHEDULE –G

(See Clause 12.1)

PROJECT COMPLETION SCHEDULE

1 Project Completion Schedule

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

2 Project Milestone-I

2.1 Project Milestone-I shall occur on the date falling on the 319th (Three Hundred Nineteen) day from the Appointed Date (the "Project Milestone-I").

2.2 Prior to the occurrence of Project Milestone-I, the Concessionaire shall have expended not less than 15% (twenty per cent) of the total capital cost set forth in the Financial Package.

2.3 Prior to the occurrence of Project Milestone –I, the Concessionaire shall have commenced construction of the Project and achieved 15% Physical progress.

3 Project Milestone-II

3.1 Project Milestone-II shall occur on the date falling on the 760rd (Seven Hundred and Sixty) day from the Appointed Date (the "**Project Milestone-II**").

3.2 Prior to the occurrence of Project Milestone-II, the Concessionaire shall have expended not less than 35% (thirty-five per cent) of the total capital cost set forth in the Financial Package. Provided, however, that at least 70% (seventy percent) of the expenditure referred to hereinabove shall have been incurred on physical works which shall not include advances of any kind to any person or expenditure of any kind on plant and machinery.

3.3 Prior to the occurrence of Project Milestone –II, the Concessionaire shall have commenced construction of the Project and achieved 35% Physical Progress.

4 Project Milestone-III

4.1 Project Milestone-III shall occur on the date falling on the 1003rd (One Thousand Three) day from the Appointed Date (the "**Project Milestone-III**").

4.2 Prior to the occurrence of Project Milestone-Ill, the Concessionaire shall have commenced [construction of all Project Facilities and expended not less than 75% (seventy-five per cent) of the total capital cost set forth in the Financial Package.

4.3 Prior to the occurrence of Project Milestone –III, the Concessionaire shall have commenced construction of the Project and achieved 75% Physical Progress.

5 Scheduled Completion Date

5.1 The Scheduled Completion Date shall be the 1521st (One thousand five Hundred and twenty-one) day from the Appointed Date.

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

6 Extension of period

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.

Format for Weightages for Project Tunnel.

Weightages

1. Proportions of the contract price to the EPC Contractor for different stages of Construction of the Project Tunnel shall be as specified below:

Item	Weightage in percentage to the Contract Price	Stage for Payment	Qty.	Percentage weightage
1	2	3	4	5
Road works including culverts, minor bridges, underpasses, overpasses, approaches to ROB/RUB/ Major Bridges/ Structures (but excluding service roads).	[**]	**A- Widening and strengthening of the existing road**		
		(1) Earthwork up to top of the sub-grade	[**]	[**]
		(2) Granular work (sub-base, shoulders) GSB	[**]	[**]
		(3) Shoulders	[**]	[**]
		(4) Bituminous work	[**]	[**]
		(5) Rigid Pavement		
		(a) DLC	[**]	[**]
		(b) PQC	[**]	[**]
		(6) Widening and repair of culverts	[**]	[**]
		(7) Widening and repair of minor bridges	[**]	[**]
		B- New realignment/bypass		
		(1) Earthwork up to the top of the sub-grade	[**]	[**]
		(2) Granular work (sub-base, shoulders) GSB	[**]	[**]
		(3) Shoulders	[**]	[**]
		(4) Bituminous work	[**]	[**]
		(5) Rigid Pavement	[**]	[**]
		(a) DLC	[**]	[**]
		(b) PQC	[**]	[**]
		C- New culverts, minor bridges, underpasses, overpasses on existing road, realignments, bypasses:		
		(1) Culverts		
		(2) Minor bridges		
		(a) Foundation	[**]	[**]
		(b) Sub-structure	[**]	[**]
		(c) Super-structure (including crash barriers, etc., complete)	[**]	[**]
		(3) Cattle/Pedestrian underpasses	[**]	[**]
		(a) Foundation	[**]	[**]
		(b) Sub-structure	[**]	[**]

Item	Weightage in percentage to the Contract Price	Stage for Payment	Qty.	Percentage weightage
1	2	3	4	5
		(c) Super-structure (including crash barriers, etc., complete)	[**]	[**]
		(4) Pedestrian overpasses	[**]	[**]
		(a) Foundation	[**]	[**]
		(b) Sub-structure	[**]	[**]
		(c) Super-structure (including crash barriers, etc., complete)	[**]	[**]
		(5) Grade-separated structures		
		(a) Underpasses		
		(i) Foundation	[**]	[**]
		(ii) Sub-structure	[**]	[**]
		(iii) Super-structure (including crash barriers, etc., complete)	[**]	[**]
		(b) Overpass		
		(i) Foundation	[**]	[**]
		(ii) Sub-structure	[**]	[**]
		(iii) Super-structure (including crash barriers, etc., complete)	[**]	[**]
		(c) Flyover		
		(i) Foundation	[**]	[**]
		(ii) Sub-structure	[**]	[**]
		(iii) Super-structure (including crash barriers, etc., complete)	[**]	[**]
		(d) Foot over Bridge	[**]	[**]
Major Bridge works ROB/RUB	[**]	A) Widening and Repairs of Major Bridges		
		(1) Foundation		
		(A) Open Foundation		
		(B) Pile Foundation/Well Foundation	[**]	[**]
		(2) Sub-Structure	[**]	[**]
		(3) Super-Structure (Including Crash Barriers, etc., Complete)	[**]	[**]
		B) Widening And Repair Of		
		(A) ROB		
		(1) Foundation	[**]	[**]
		(2) Sub-Structure	[**]	[**]
		(3) Super-Structure (Including Crash Barriers, etc., Complete)	[**]	[**]
		(B) RUB		
		(1) Foundation	[**]	[**]
		(2) Sub-Structure	[**]	[**]
		(3) Super-Structure (Including Crash Barriers, etc., Complete)	[**]	[**]
		C) New Major Bridges		

Item	Weightage in percentage to the Contract Price	Stage for Payment	Qty.	Percentage weightage
1	2	3	4	5
		(1) Foundation		
		(A) Open Foundation	[**]	[**]
		(B) Pile Foundation/Well Foundation	[**]	[**]
		(2) Sub-Structure	[**]	[**]
		(3) Super-Structure (Including Crash Barriers, etc., Complete)	[**]	[**]
		D) New Rail-Road Bridges		
		(A) ROB		
		(1) Foundation	[**]	[**]
		(2) Sub-Structure	[**]	[**]
		(3) Super-Structure (Including Crash Barriers etc., Complete)	[**]	[**]
		(B) RUB		
		(1) Foundation	[**]	[**]
		(2) Sub-Structure	[**]	[**]
		(3) Super-Structure (Including Crash Barriers, etc., Complete)	[**]	[**]
		Structures (elevated sections, reinforced earth)		
		(1) Foundation	[**]	[**]
		(2) Sub-structure	[**]	[**]
		(3) Super-structure (including crash barriers, etc., complete)	[**]	[**]
		(4) Reinforced Earth Wall (includes Approaches of ROB, Underpasses, Overpasses, Flyover, etc.	[**]	[**]
Tunnel	[**]	**1. Tunnel**		
		TBM Tunnel & Cross Passages		
		1) Procurement Testing and Assembling of TBM.	[**]	[**]
		2)Setting up the Batching plant, Casting Yard, STS, ISIG, mixing plant, Cooling Plant, etc.	[**]	[**]
		3) Ground Treatment and Stabilization at Launching Location of TBM	[**]	[**]
		4) Underground Excavation by TBM & Muck Disposal, including Dewatering, etc.	[**]	[**]
		5) Tunnel Lining with Precast RCC Segments including required fittings & tail void grouting.	[**]	[**]
		6) Drainage System for Tunnel	[**]	[**]

Item	Weightage in percentage to the Contract Price	Stage for Payment	Qty.	Percentage weightage
1	2	3	4	5
		Drainage, Precast Utility System, Slab for Vehicular Movement, Slab for Ventilation, etc.		
		7) Instrumentation and Monitoring	[**]	[**]
		8) Pavement	[**]	[**]
		9) Electro and Mechanical Equipment	[**]	[**]
		10) Ventilation System	[**]	[**]
		Shaft		
		1) Open Excavation and Earthwork (Loose excavation, rock excavation, protection, etc. and Muck Disposal.	[**]	[**]
		2) Secant piling including SN Bolts and PT Ground Anchors.	[**]	[**]
		Ramps at Entry Exits		
		1) Open Excavation and Earthwork (Loose excavation, rock excavation, protection, etc. and Muck Disposal.	[**]	[**]
		2) Secant piling including SN Bolts and PT Ground Anchors.	[**]	[**]
		3)Concreting for Precast Box Segments & Support Walls.	[**]	[**]
		4)Backfilling, Waterproofing, etc.	[**]	[**]
Electrical and public health utilities	[**]	EHT line	[**]	[**]
		EHT crossing	[**]	[**]
		HT/LT lines (including Transformers if any)	[**]	[**]
		HT/LT crossings	[**]	[**]
		Water pipeline	[**]	[**]
		Water pipeline crossings	[**]	[**]
		Sewage line	[**]	[**]
		Sewage line crossings	[**]	[**]
Other works	[**]	(i) Service roads/ Slip Roads	[**]	[**]
		(ii) Toll Plaza	[**]	[**]
		(iii) Roadside drains	[**]	[**]
		(iv) Road signs, markings, km stones, safety devices,		
		(a)Road signs, markings, km stones,	[**]	[**]
		(b) Concrete Crash Barrier/ W-Beam Crash Barrier in Road work	[**]	[**]
		(v) Project facilities	[**]	[**]
		(a) Bus bays	[**]	[**]
		(b) Truck lay-byes	[**]	[**]
		(c) Rest areas	[**]	[**]

Item	Weightage in percentage to the Contract Price	Stage for Payment	Qty.	Percentage weightage
1	2	3	4	5
		e) Rainwater harvesting	[**]	[**]
		(vi) Repairs to bridges/structures	[**]	[**]
		(vii) Roadside plantation	[**]	[**]
		(viii) Protection works		
		(a) Boulder Pitching on slopes	[**]	[**]
		(b) Toe/Retaining wall	[**]	[**]
		(ix) Tunnel		
		(a) Excavation	[**]	[**]
		(b) Construction of support system, including rock bolting, lining, etc.	[**]	[**]
		(c) Complete completion of the tunnel	[**]	[**]
		(x) Miscellaneous	[**]	[**]

* The above list is illustrative and may require modification as per the scope of the work.
** Measurement of Progress
For example, if the total length of bituminous work to be done is 100 km, the physical progress of bituminous work shall be determined as follows:
Physical progress of bituminous work =Weightage for bituminous work x (L'/L)
L = Total length of bituminous work in km
L' = Executed length of bituminous work in km
Similarly, the physical progress for other stages shall be worked out and addition of all will give the total progress achieved.

SCHEDULE –H

(See Clause 12.3)

DRAWINGS

1 Drawings

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

2 Additional drawings

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

Annex – I

(Schedule - H)

List of Drawings

1. The Project drawings, as defined in Clause 1.1, Definitions, Article 1, Definitions and Interpretation, Part-I: Preliminary, of the Contract Agreement shall consist of:

a. Working Drawings of all the components/elements of the Project as determined by Authority Engineer/Authority, and

b. As-built drawings for the Project components/elements as determined by AE/Authority. As-built drawings shall be duly certified by Authority Engineer.

2. A minimum list of the drawings of the various components/elements of the Project and project facilities required to be submitted by the Contractor is given below:

A. GENERAL LAYOUT PLAN

(a) Tunnel Layout Plan and L-Section

(b) Tunnel Cross Section

B. TUNNEL GEOLOGICAL DRAWINGS

a) Geological Layout Plan

b) Geological L-Section

c) Geological Cross Section

C. TUNNEL CIVIL & MEP DRAWINGS

a) Excavation and Support Drawings

b) Portal Development Drawings

c) Instrumentation Details

d) Detailed Drawing of Concrete Outline and Reinforcement

e) Drawings of clearance profile and installations without invert slab

f) Drawings of clearance profile and installations with invert slab

g) Detailed Drawings of Tunnel lighting.

h) Drawings of Tunnel system and installations

i) Tunnel MEP Drawings

j) Tunnel Ventilation and Fire-fighting

D. ROAD (PLAN & PROFILE)

a) Plan & Profile

b) Cross Sections

c) Drawings of horizontal alignment, vertical profile and cross sections

d) Drawings of cross drainage works

e) Drawings of traffic diversion plans and traffic control measures

f) Drawings of road drainage measures

g) Drawings of street lighting

E. STANDARD DRAWINGS

a) Detail of Mandatory Regulatory Signs

b) Detail of Mandatory Regulatory Signs & Compulsory Direction Control and Other Signs

c) Details of Informatory Signs

d) Detail of Cautionary Signs-TS
e) Details of cautionary warning signs
f) Details of cautionary warning signs
g) Details of route marking (chevron marking)
h) Details of road marking
i) Details of directional signs
j) Details for 200-meter 1 km & km post.

SCHEDULE –I

(See Clause 14.1.2)

TESTS

1 Schedule for Tests

1.1 The Concessionaire shall, no later than 30 (thirty) days prior to the likely completion ofProject Tunnel notify the Independent Engineer and the Authority of its intent to subjectthe Project Tunnel to Tests, and no later than 7 (seven) days prior to the actual date ofTests, furnish to the Independent Engineer and the Authority detailed inventory and particulars of all works and equipment forming part of Project Tunnel.

1.2 The Concessionaire shall notify the Independent Engineer of its readiness to subject theProject Tunnel to Tests at any time after 7 (seven) days from the date of such notice, and upon receipt of such notice, the Independent Engineer shall, in consultation with the Concessionaire, determine the date and time for each Test and notify the same to the Authority who may designate its representative to witness the Tests. The Independent Engineer shall thereupon conduct the Tests itself or cause any of the Tests to be conducted in accordance with Article 14 and this Schedule-I.

2 Tests

A. Roads

2.1 Visual and physical Test: The Independent Engineer shall conduct a visual and physicalcheck of Project Tunnel to determine that all works and equipment forming part thereof conform to the provisions of this Agreement.

2.2 Test drive: The Independent Engineer shall undertake a test drive of the Project Tunnel by a Car and by a fully loaded Truck to determine that the quality of service conforms to the provisions of the Agreement.

2.3 Riding quality Test: Riding quality of each lane of the carriageway shall be checked with the help of network survey vehicle and the maximum permissible roughness for purposes of this Test shall be [1,800 (one thousand and eight hundred)] mm for each kilometer.

2.4 Pavement Composition Test: The thickness and composition of the pavement structure shall be checked on a sample basis by digging pits to determine conformity of such pavement structure with Specifications and Standards. The sample shall consist of one pit in each direction of travel to be chosen at random in each stretch of 5 (five) kilometresof the Project Tunnel. The first pit for the sample shall be selected by the IndependentEngineer through an open draw of lots and every fifth kilometre from such first pit shallform part of the sample for this pavement quality Test.

2.5 Cross-section Test: The cross-sections of the Project Tunnel shall be checked on a sample basis through physical measurement of their dimensions for determining the conformity thereof with Specifications and Standards. For the road portion, the sample shall consist of one spot to be selected at random in each stretch of 1 (one) kilometre ofthe Project Tunnel. The first spot for the sample shall be selected by the Independent Engineer through an open draw of lots and the spots located at every one kilometre fromsuch first spot shall form part of the sample. For the bridge portion, one spot shall be selected at random by the Independent Engineer in each span of the bridge.

2.6 Other Tests: The Independent Engineer may require the Concessionaire to carry out or cause to be carried tests on reflectivity of road markings, road signs and illumination levels (lux) of lighting and any additional Tests, in accordance with Good Industry Practice, for determining the compliance of the Project Tunnel with Specifications and Standards.

2.7 Environmental audit: The Independent Engineer shall carry out a check to determine conformity of the Project Tunnel with the environmental requirements set forth in Applicable Laws and Applicable Permits.

2.8 Safety review: Safety audit of the Project Tunnel shall have been undertaken by the Safety Consultant as set forth in Schedule-L, and on the basis of such audit, the Independent Engineer shall determine conformity of the Project Tunnel with the provisions of this Agreement.

B. Tunnel

i. Visual and physical test: The Authority's Engineer shall conduct a visual and physical check of

construction to determine that all works and equipment forming part thereof conform to the provisions of this Agreement. The physical tests shall include [***].

ii. Riding quality test: Riding quality of each lane of the carriageway shall be checked with the help of a Network Survey Vehicle (NSV) fitted with latest equipment and the maximum permissible roughness for purposes of this Test shall be [2,000 (two thousand)] mm for each kilometer.

iii. 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 Tunnel 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.

3 Agency for conducting Tests

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

4 Completion/Provisional Certificate

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

SCHEDULE –J

(See Clauses 14.2 & 14.3)

COMPLETION CERTIFICATE

1 I, …… (Name of the Independent Engineer), acting as Independent Engineer, under and in accordance with the Concession Agreement dated ……

(the "Agreement"), for (A) Design and Construction of 3-Lane Underground Twin Tunnel Road from Hebbal Esteem Mall junction (Km. 0+000) to Silk Board KSRP Junction (Km.16+745) along with 3-lane/2-lane entry & exit ramps including operation and maintenance in Bengaluru City (North South Corridor) – on MODIFIED BOOT MODE. Package 1: Hebbal Esteem Mall junction (Km. 0+000) to Seshadri Road, Race Course Junction (Km 8.748), through (Name of Concessionaire), hereby certify that the Tests specified in Article 14 and Schedule-I of the Agreement have been successfully undertaken to determinecompliance of the Project Tunnel with the provisions of the Agreement, and I amsatisfied that the Project Tunnel can be safely and reliably placed in commercial service of the Users thereof.

2 It is certified that, in terms of the aforesaid Agreement, all works forming part of Tunnel Project Tunnel have been completed, and the Project Tunnel is hereby declared fit for entry into commercial operation on this the …… day of …… 20…...

SIGNED, SEALED AND DELIVERED

For and on behalf of

the INDEPENDENT ENGINEER by:

(Signature)

(Name)
(Designation)
(Address)

PROVISIONAL CERTIFICATE

1 I, …… (Name of the Independent Engineer), acting as Independent Engineer, under and in accordance with the Concession Agreement dated …….

(the **"Agreement"**), for (A) Design and Construction of 3-Lane Underground Twin Tunnel Road from Hebbal Esteem Mall junction (Km. 0+000) to Silk Board KSRP Junction (Km.16+745) along with 3-lane/2-lane entry & exit ramps including operation and maintenance in Bengaluru City (North South Corridor) – on MODIFIED BOOT MODE. Package 1: Hebbal Esteem Mall junction (Km. 0+000) to Seshadri Road, Race Course Junction (Km 8.748), through …… (Name of Concessionaire), hereby certify that the Tests specified in Article 14 and Schedule-I of the Agreement have been undertaken to determine compliance of the Project Tunnel with the provisions of the Agreement.

2 Construction Works that were found to be incomplete and/or deficient have beenspecified in the Punch List appended hereto, and the Concessionaire has agreed and accepted that it shall complete and/or rectify all such works in the time and manner set forth in the Agreement. (Some of the incomplete works have been delayed as a result ofreasons attributable to the Authority or due to Force Majeure and the Provisional Certificate cannot be withheld on this account. Though the remaining incomplete workshave been delayed as a result of reasons attributable to the Concessionaire,) [@] I am satisfied that having regard to the nature and extent of such incomplete works, it wouldnot be prudent to withhold commercial operation of the Project Tunnel, pending completion thereof.

3 In view of the foregoing, I am satisfied that the Project Tunnel can be safely and reliably placed in commercial service of the Users thereof, and in terms of the Agreement, the Project Tunnel is hereby provisionally declared fit for entry into commercial operation on this the …… day of …….. 20…...

ACCEPTED, SIGNED, SEALED AND DELIVERED	ACCEPTED, SIGNED, SEALED AND DELIVERED
For and on behalf of	For and on behalf of
CONCESSIONAIRE by:	INDEPENDENT ENGINEER by:
(Signature)	(Signature)
(Name and Designation)	(Name and Designation)
(Address)	(Address)

SCHEDULE –K

(See Clause 17.2)

MAINTENANCE REQUIREMENTS

1 Maintenance Requirements

1.1 The Concessionaire shall, at all times maintain the Project Tunnel in accordance withthe provisions of this Agreement, Applicable Laws and Applicable Permits. In particular, the Concessionaire shall, at all times during the operation period, conform to the maintenance requirements set forth in this schedule K (the **"Maintenance Requirements"**)

1.2 The Concessionaire shall repair or rectify any Defect or deficiency set forth in this Schedule-K within the time limit specified therein and any failure in this behalf shall constitutea breach of the agreement & non-fulfilment of the Maintenance obligations by the Concessionaire. Upon occurrence of any breach hereunder, the Authority shall be entitled to effect reduction in monthly lump sum payment as set forth in Clause 17.8 of this Agreement, without prejudice to the rights of the Authority under this Agreement, including Termination thereof.

1.3 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.

[Specify all relevant documents]

2 Repair/rectification of Defects and deficiencies

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

2.2 The Concessionaire shall at all times maintain an adequate inventory of spares and consumables to meet the Maintenance Requirements.

3 Other Defects and deficiencies

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

4 Extension of time limit

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

5 Emergency repairs/restoration

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

6 Daily inspection by the Concessionaire

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

7 Divestment Requirements

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

8 Display of Schedule-K

The Concessionaire shall display a copy of this Schedule-K at the entry/exits & Multimodal Hubs of tunnel along with the Complaint Register stipulated in Article 40.

9 Additional Operations & Maintenance requirements

9.1 The Concessionaire shall take all such actions and do all such things, including without limitation, organizing itself, adopting measures and standards, executing procedures such as inspection procedures, highway patrols, engaging and managing contractors, agents, and employees, as will secure:

(a) The safety of users of the Project Tunnel, workers, or other persons on the Project Tunnel and other adjoining roads and/or facilities thereon;

(b) Unimpaired performance of statutory duties and functions of the Authorities in relation to the Project Tunnel and/or other adjoining roads and facilities; and ensure that:

9.1.2 Delay to users of the Project Tunnel and of adjoining roads or facilities are minimized.

9.1.3 Risk of adverse effects on the environment and on the amenity enjoyed by the owners and occupiers of property and/or land in the influence zone of the Project Tunnel, adjoining roads and facilities is minimized.

9.1.4 Accidents and emergencies on the Project Tunnel and facilities thereon are responded to as quickly as possible and their adverse effects are minimized.

9.1.5 Risk of disturbance or damage or destruction to property of third party is minimized.

9.1.6 Members of the public are treated with due courtesy and consideration.

9.1.7 Users are given adequate information and forewarning of any event on or any other matter affecting the Project Tunnel which will enable them to minimize any adverse consequences on them of that event or matter.

9.1.8 Member of the public and others are given adequate opportunity to bring to the attention of the Concessionaire any matter affecting its ability to meet the Maintenance Requirements.

9.1.9 Traffic data and data relating to the operation and maintenance of the Project Tunnel and its facilities and events on the Project Tunnel are collected and disseminated such that the Authorities and other persons or bodies with statutory duties or function in relation to the Project Tunnel or adjoining road are able to perform those duties andfunctions efficiently.

9.1.10 The project facilities provided under Schedule-B, Schedule-C & Change of Scopes, as applicable, shall be maintained in order to fulfil the requirements set forth in the Concession Agreement.

9.1.1 I The Scope for Maintenance includes but not limited to the following obligations:

(a) Improvement - this includes improvement of the existing assets as per requirement of this

Agreement and safety audit.

(b) Maintenance of Civil works& Assets - this includes maintenance of civil works and all the assets as per requirement of this Agreement.

(c)Road Maintenance - includes routine maintenance, preventive maintenance, periodic maintenance as per IRC 82:2015, Design overlay in accordance with IRC SP: 8T,disaster maintenance including exigencies and inspections.

(d) Traffic Management - this includes enforcement of regulations together with the relevant authorities. This also includes hazard response, information gathering and dissemination and Road patrol etc.

(e) Safety - this includes accident prevention, after care & enforcement.

(f) Facility maintenance - this includes periodic inspections, routine maintenance, rehabilitation and expansion planning.

(g) Road property management -this includes management of access,encroachment and ribbon development.

(h) Maintaining public relations unit to interface with and attend to suggestions from users of the tunnel, the media, Govt. agencies and other external agencies.

9.1.12 The broad limit of responsibilities of the Concessionaire shall be as described below, as

per contractual obligations:

(a) In general, the limit of the Concessionaire's responsibility is to maintain all areas within the Right of way of the Project Tunnel inclusive of all features such as interchanges, toll system, tunnel lighting facilities, traffic light facilities, ATMS, Tunnel cross passages, ramps, Tunnel ventilation, SCADA, multimodal hubs and other facilities

present within the Project Tunnel.

(b) Limit of Maintenance by the Concessionaire for another road joining or crossing the contract limit shall be according to the following conditions:

(i) Where the other road crosses an underpass, the Concessionaire shall be responsible to maintain the crossing structure and related facilities such as drainage, etc. as provided as per concession agreement.

(ii) The Concessionaire shall be responsible for maintenance of the road surface, and the roadside drainsif any of the other roads that are within l00m beyond the Right of Way of Project Tunnel, where the other road crosses an underpass.

(c) The Concessionaire shall maintain all the street lighting, tunnel lighting, traffic light system, structures, roadway surface and the related facilities such as drainage, turfing etc. within the interchanges, and such maintenance shall be extended until the end of the flare and the deceleration and acceleration lanes of the interchanges.

(d) The Concessionaire shall be responsible for maintaining all cross roads indicated in Schedule-B up to Right of Way of the Project Tunnel and their flares to junctions at any interchange within the Project Tunnel, whichever is more.

(e) For setting out the limit of maintenance for the Concessionaire, Highway Authorities shall be responsible for negotiating with the local authorities or where required, with other relevant third parties. The Concessionaire shall maintain all the drainage system within the Right of Way including the culvert crossings and the drains. However, the Concessionaire shall not be liable to maintain rivers and the streams under the jurisdiction of Irrigation Department except when such Maintenance of Project Tunnel is required as a result of exceptional discharge.

(f) Report Formats- As per Article 17 of the Concession agreement, the Concessionaire shall submit a Maintenance Program for the next year prepared in accordance with inventory of all assets created during COD of the project along with the deployment schedule of manpower & other resources with testing facilities.

(g) The asset performance created by the Concessionaire as per the scope of the concession agreement shall be assessed by the Independent Engineer as per consultancy agreement and shall be honored by the Concessionaire pertaining to the outcome of equipment-based monitoring provisions, as applicable.

10 Traffic Management and Lane Closure

Traffic Management during Operation and Maintenance of the Project Tunnel is an important activity the Concessionaire has to attend to ensure safety of the road users as well as the maintenance workers simultaneously throughout the Concession Period. It is usual activity to carry out various types of maintenance works at different stages and at different periods as per site requirement. Also, it is a vital activity during unforeseen and/or emergency situations arising on account of natural causes or accidents or administrative reasons.

10.2 Traffic Management is required during planned scheduled like Routine and Periodic maintenance activities. However, traffic management will also be called for during unscheduled activities such as

10.2.1 Emergency situation arising on account of

(a) Force Majeure;

(b) Accident/incident on the Project Tunnel

10.2.2 Special repairs required on account of deficiency/ failure of an element of the Project Tunnel; and

10.2.3 Default of the Concessionaire with respect to any O&M activity on the Project Tunnel

10.3 The basic principles to be followed for maintenance works in this Project Tunnel shall be as follows:

(a) Work programme schedule shall be prepared in a manner that diversion of the main traffic are minimized. Two-lanes of carriageway shall be available to the maximum extent possible.

(b) Measures shall be taken such that the traffic is guided from a closed lane onto the operating lane without any conflict with the traffic from the opposite direction.

(c) The activity of maintenance of pavement surface and/or strengthening/ renewal of the pavement structure shall not be taken up in a continuous length of more than 2 kilometers or as approved by Independent Engineer at a time to avoid long detour of the traffic.

(d) The traffic diversion road where provided shall be appropriately designed for the traffic plying on the main carriageway. It shall also be properly maintained during its operation period.

(e) During traffic detour involving traffic diversion, adequate safety measures as per Specifications & Schedule-L shall be followed.

(f) Proper and adequate information about the maintenance activity shall be notified to the road users on Variable Message Sign Boards (VMS) well before approaching the work site. Traffic Management and Diversion arrangement at the work site shall be as per IRC SP55: 2014 or subsequent updates thereof or as approved by the Independent Engineer. In addition to this, Robot Flagman and other advanced traffic diversion devices shall be used for diversion arrangement.

10.4 Traffic Management Plan and programme for a planned scheduled construction and/or maintenance activity shall be prepared in advance of that activity keeping above in view and be approved by the Independent Engineer.

10.5 In case of unscheduled activities, described as above, an emergencytraffic management for the affected reach of the highway shall be prepared and implemented in line with the guidelines set forth as per Standards and Specifications, complying with Anicle-18 & Schedule- L. This emergency traffic management plan shall take into account the various requirements spelt out in the Concession Agreement as well as in this schedule.

10.6 Traffic Management and Lane Closures Requirements during Emergency situations arising on the Project Tunnel needing Traffic Management are detailed below:

(a) This stage could arise any time and shall have to be addressed based on its own merits. The extent of traffic management shall be assessed as per the site requirement and situation.
(b) The nature of emergency requirement will determine the tlpe and extent of the traffic diversion.
(c) Traffic Management Plan in emergency shall be prepared and implemented as per Standards and Specifications set forth in Schedule-L.

11 Implementation of Asset Management Framework during O&MPeriod:

11.1 Introduction

(a) Asset Management is a systematic process of maintaining assets, upgrading and operating assets combining engineering principles with sound business practice and economic rationale, and providing tools to facilitate a more organized and flexible approach to making the decisions necessary to achieve expectations. Objective of Asset maintenance shall be to fulfil the requirements mentioned in 9.1 above with optimum allocation of resources for management, operation, preservation, and maintenance of tunnel infrastructure asset.

(b) Basic common requirement for Asset Management are:

(i) Establish a complete inventory of all road asset with all its elements

(ii) Provide a clear picture of the current condition/performance of the road assets

(iii) Create Real Time Database of the Asset Inventory and Condition with all-time data

availability to all stakeholders

(iv) Estimate future demand of traffic and service needs

(v) Estimate maintenance needs and costs

(vi) Prioritize objectives related to the desired quality and performance of the road

(vii) Define a strategy (Asset Management Plan) (This includes both Operation and Maintenance Plan)

(viii) Implementation of Asset Management Plan

(c) As requirement of maintenance manual under Article 17 of the Concession Agreement,the Concessionaire shall in accordance with this schedule and Standards and Specifications also evolve an Asset Management Manual as per Article 17 of the Concession Agreement. The same shall be submitted to Independent Consultant. Independent Consultant upon finding this Asset Management Manual in accordance with Schedules, Concession Agreement and the best industry practice of the day shall approve the same.

(d) The Asset Management Manual prepared by the Concessionaire shall set out the Asset Management standards and details of the Operations & Maintenance activities to be undertaken during the Concession Period, so that the Project Facilities shall at all times conform to the Design Requirements/specifications.

The manual shall include without limitation the following aspects:

(e) Organization structure with responsibilities of key personnel;

(ii) Traffic Management Plan including the Corridor Control Plan;

(iii) Safety Management Programme Including the Emergency Response Protocol;

(iv) Inspection Procedures, Parameters, Frequency and Schedule;

(v) Routine and Periodic Maintenance Intervention Levels;

(vi) Asset Management Project Deliverables and Tolerance Criteria;

(vii) Environment Management Plan;

(viii) Maintenance Programme;

(ix) Management lnformation System;

(x) Report Formats.

(f) As per clause 17 .4.1of the concession Agreement, the concessionaire shall submit an annual Asset Management Plan/Maintenance Program for the next year prepared in accordance with Asset Management Manual.

(g) The Asset Management System should be capable of monitoring real time compliance of the Asset Management Plan and provide necessary feedback to all stake holders'

(h) In order to determine the Asset Performance Parameters for the Base Year, the Concessionaire shall carry out Revalidation &Testing on the road project to arrive at Base Year Parameters, on o&M commencement date. Initial Maintenance Requirement shall be assessed/revalidated based on Base Year Performance Parameters' Independent Engineer may audit the Revalidation and Testing processes' The data to be collected for performance indicator along-with recommended revalidation/testing procedures are as mentioned in the following table:

Description of Data	**Recommended Process**
Asset Inventory (Tunnel, Structures, Road Furniture, Facilities)	Visual Survey Manual Validation of Past Data
Pavement Distress – (Cracking and other visual distress)	Network Survey Vehicle or ROMDAS or equivalent technology as approved by IE
Roughness Value (IRI), Rutting, Skid Resistance	Network Survey Vehicle (Laser Profilometer) or ROMDAS or equivalent technology
Deflection Value/Remaining Life	Falling Weight Deflectometer
Condition Survey of Structures including tunnel	Updation of Past Data by Visual Condition Survey and thorough Inspection using Mobile Bridge Inspection Unit
Condition Survey of Road Furniture, Facilities and structures in the influence zone of the tunnel	Updation of Past Data by Visual Condition Survey and thorough Inspection using Retro Reflectometer
Traffic Data	7-day ATCC based traffic Volume Count Survey backed by Video
Axle Load Data	2-days Axle Load Survey with axle Pad
Encroachment Data	Survey to be carried out including Geotagged Images
Aerial Imaging of the Asset	Drone, LiDAR or equivalent technology

Utility Mapping	Ground Penetration Radar, Visual Inspection

(i) The Concessionaire in accordance of provisions of the Concession Agreement shall plar/ programme inspections of the Project Tunnel classified in the following categories for effective o&M/Asset Management System Implementation:

(i) Routine Inspection: Routine Visual Inspections are to be carried out by highway/tunnel maintenance engineers having knowledge of tunnel/road and structures. The purpose of visual inspection is to report the obstacles to traffic, defects and deficiencies of tunnel /pavement/structure, missing or damages to safety barrier (crash barriers) and traffic signs installed or erected on highway. Such inspections should be done daily. The visual inspection may be carried out by visual assessment with careful observation of the specific object/item of the project Facilities for identification and for quantification of the deficiencies or damages of the project Facilities' Geotagging Cameras and Distance Measuring Devices shall be used to update base asset performance parameters on daily basis. If timely inspection and reporting of these safety related deficiencies accidents are not done, they could lead to or severe maintenance problems.

(ii) Close Inspection: Close inspections for assessment of defects/deficiencies of Project Tunnel shall be periodic in nature and would require detailed examination of all elements of the Project Tunnel. close inspection may be visual or may involve investigations to be carried out using instruments. The frequency of close inspections would depend upon the nature of the elements of Project Tunnel. This inspection is to be carried out by the Tunnel, Road & buildings Engineer who has good knowledge of Tunnel, Road & Building Engineers with theoretical background to analyze the nature, and extent of defects/deficiencies, suggest suitable remedial measures to rectify/remedy them and quantify repair work.

(iii) Thorough Inspection: A thorough inspection is comprehensive and detailed assessment of defects/deficiencies of the Project Tunnel with the aid of standard equipment and non-destructive testing. Such an inspection is to be carried out on the basis of comprehensive checklist of items related to the materials, condition of element of Project Tunnel. A checklist is to be prepared well in advance of inspection' The thorough inspection should be undertaken during the most critical weather condition. Thorough inspection carried out will offer the most critical evaluation of the performance of the Project Tunnel elements.

Besides being a qualified Tunnel/Road Engineer, the inspection team leader must be familiar with design and construction features of the Tunnel, Road & Building to be inspected so that the condition can be properly and accurately assessed for a meaningful report and quantification of repair works. The competence of team leader to recognize any structural distress/deficiencies and assess its seriousness with complete recommendation for appropriate repairs are important pre-requisites for entrusting this assignment to him.

After thorough visual inspection and detailed condition survey of various tunnel components at 5 years interval and also when whenever distress observed in the conditional survey test shall be carried out as approved by Independent Engineer within 60 days of Appointed date of the Concession.

(j) The Concessionaire shall strictly maintain the assets of the Project Tunnel and adhere to the Project deliverables and Tolerance Criteria as mentioned in Annex-I.

Annex - I
(Schedule-K)

REPAIR/RECTIFICATION OF DEFECTS AND DEFICIENCIES[Φ]

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

ROADS

(a)

S.No.	Nature of defect or deficiency	Time limit for Repair/ rectification
Carriageway and paved shoulders		
(i)	Breach or blockade	Temporary restoration of traffic within 24 hours; permanent restoration within 15 days
(ii)	Roughness value exceeding 2,750 mm in a stretch of 1 km (as measured by a standardized rough meter/bump integrator)	180 days
(iii)	Pot holes	48 hours
(iv)	Cracking in more than 5% of road surface in a stretch of 1 km	30 days
(v)	Rutting exceeding 10 mm in more than 2% of road surface in a stretch of 1 km (measured with 3 m straight edge)	30 days
(vi)	Bleeding/skidding	7 days
(vii)	Raveling/Stripping of bitumen surface exceeding 10 Sq m	15 days
(viii	Damage to pavement edges exceeding 100 mm	15 days
(ix)	Removal of debris	6 hours
Hard/earth shoulders, side slopes, drains and culverts		
(i)	Variation by more than 2% in the prescribed slope of camber/cross fall	30 days
(ii)	Edge drop at shoulders exceeding 40 mm	7 days
(iii)	Variation by more than 15% in the prescribed side (embankment) slopes	30 days

(iv)	Rain cuts/gullies in slope	7 days
(v)	Damage to or silting of culverts and side drains during and immediately preceding the rainy season	7 days
(vi)	Desalting of drains in urban/semi-urban areas	48 hours
Road side furniture including road signs and pavement marking		
(i)	Damage to shape or position; Poor visibility or loss of retro-reflectivity	48 hours
Street lighting and telecom (ATMS)		
(i)	Any major failure of the system	24 hours
(ii)	Faults and minor failures	8 hours
Trees and plantation		
(i)	Obstruction in a minimum headroom of 5 m above carriageway or obstruction in visibility of road signs	24 hours
(ii)	Deterioration in the health of trees and bushes	Timely watering and treatment
(iii)	Replacement of trees and bushes	90 days
(iv)	Removal of vegetation affecting sight line and road structures	15 days
Rest areas		
(i)	Cleaning of toilets	Every 4 hours
(ii)	Defects in electrical, water and sanitary installations	24 hours
Other Project Facilities and Approach roads		
(i)	Damage or deterioration in Approach Roads, [pedestrian facilities, truck lay-bys, bus-bays, bus- shelters, cattle crossings, Traffic Aid Posts, Medical Aid Posts, Rain Water Harvesting/Artificial Recharge Unit and other works]	15 days
BRIDGES		
Superstructure Bridges		
(i)	Cracks Temporary measures Permanent measures	 Within 48 hours Within 45 days
(ii)	Spalling/scaling	15 days
Foundations of Bridges		
(i)	Scouring and/or cavitation	15 days
Piers, abutments, return walls and wing walls		
(i)	Cracks and damages including settlement and tilting	30 days
Bearings (metallic) of bridges		

(i)	Deformation	15 days
Joints in bridges		
(i)	Loosening and malfunctioning of joints	15 days
Other items relating to bridges		
(i)	Deforming of pads in elastomeric bearings	7 days
(ii)	Gathering of dirt in bearings and joints or clogging of spouts, weep holes and vent-holes	3 days
(iii)	Damage or deterioration in parapets and handrails	3 days
(iv)	Rain-cuts or erosion of banks of the side slopes of approaches	15 days
(v)	Damage to wearing coat	15days
(vi)	Damage or deterioration in approach slabs, pitching, apron, toes, floor or guide bunds	30 days
(vii)	Growth of vegetation affecting the structure or obstructing the waterway.	15 days

Annex— II

(Schedule-K)

OPERATION AND MAINTENANCE OF TUNNELS

1. OPERATION IN TUNNELS

1.1. The operating requirements vary among tunnel facilities because of the traffic level, the feasibility of alternative routes and accessibility to existing utilities, availability of emergency responders, and other conditions specific to each tunnel. Functional systems within the tunnel must be integrated with operational procedures to include the structural elements, drainage system, barriers, utilities, tunnel ventilation system mechanical equipment, electrical components, lighting fixtures, fire and life safety systems, signs and security equipment installed within the tunnel.

1.2. Concessionaire shall employ for the Concession period the appropriate personnel in numbers having qualifications and experience as agreed by IE and Authority to operate the tunnel safely and provide reliable levels of service. Since tunnel operations differ among various facilities, the duties and responsibilities shall be organized to match the requirements for each tunnel facility.

- Tunnel manager
- Facility engineer
- Tunnel supervisor
- Tunnel operators
- Tunnel foreman
- Tunnel mechanical specialists
- Tunnel electrical specialists
- Tunnel electronics specialists
- Tunnel laborers
- Safety officers

2. Normal Tunnel Operations

Normal tunnel operations consist of routine tasks that ensure the safe and efficient flow of traffic through the tunnel facility. These tasks typically include:

Monitoring traffic flows 24/7 using surveillance equipment and incident detection systems.

- Procuring and providing all consumable material, electricity, fuel lubricants etc. required for operation and maintenance.
- Studying weather conditions and forecasts.
- Clearing roadway hazards (e.g., debris, ice, snow, water and incidents)
- Inspecting critical areas to confirm that safe conditions exist (e.g., overhead equipment, roadway surfaces).
- Checking functional systems (e.g., ventilation, air quality monitors, pumping, lighting, CCTV).
- Servicing equipment and periodic exercising of all movable components (e.g., fans, pumps, emergency generators).
- Cleaning of tunnel facility, portal buildings, ancillary structures, and grounds.
- Maintaining vehicles and equipment.
- Completing daily logs and checklists.
- Processing work orders (e.g., initiating, scheduling, completing, closing).
- Checking information (e.g., lane signals, signs, and variable message board
- Evaluating sensors and meters (e.g. Carbon Monoxide, oxygen, explosive and Luminance).

3. Emergency Response and Incident Management

Incidents requiring immediate action can occur in tunnels. Emergencies originate from fires, fuel spills, hazardous material releases, earthquakes, floods, rockslides, landslides, severe weather, and criminal acts. A thorough inspection of the tunnel damage should be conducted in accordance with the damage inspection procedures duly consented by IE. These events often require partial or complete tunnel closure followed by the rerouting of traffic while the tunnel is repaired.

4. MANTAINENCE IN TUNNELS

An effective maintenance program helps reduce costs, decrease the number of tunnel closures, increase public safety, and ensure adequate levels of service. To maximize efficient use of resources and minimize costs, maintenance programs shall be optimized. When large-scale repairs and upgrades are implemented, these projects are typically referred to as tunnel rehabilitation. Maintenance activities range from simple tasks to complex endeavors as indicated in the hierarchy below:

- Removing debris, snow, water and ice.
- Washing tunnel structures, flushing drains, tightening bolts, and changing lightbulbs
- Servicing equipment, painting fixtures, and restoring pavement.
- Tests, verifications, measurements, and calibrations
- Planned interventions
- Unplanned interventions
- Rehabilitation

5. Developing an Effective Tunnel Maintenance Program

5.1. Ideally, the maintenance strategies of a tunnel facility should strike a balance between preventative maintenance and on-demand maintenance. Safety, service requirements, and costs must be considered. When approximately 70% to 80% of all maintenance activities are performed under a preventative maintenance approach, it is considered to be good practice.

5.2. The maintenance program shall be developed from the existing records of a tunnel facility. Written procedures shall be followed to ensure that the tunnel facility receives sufficient maintenance. If safety or structural concerns are identified in the process of carrying out maintenance tasks, then the defects should be addressed.

a) Preventive Maintenance – Preventive maintenance is conducted to reduce the likelihood of failure and to extend the service life of components. An optimized maintenance approach focuses on various preventative maintenance schemes such as cyclical, conditional, and predictive methods.

b) Corrective or On-Demand Maintenance – On-demand maintenance is sometimes referred to as corrective maintenance. This type of maintenance is the most effective strategy against difficult to predict occurrences such as damage from vehicle impacts, sudden equipment malfunctions, or unanticipated tunnel system failure.

c) **Tunnel System Rehabilitation –** Individual tunnel systems are often rehabilitated when they are near the end of their useful life. Rehabilitation, also called refurbishment, implies that a large-scale repair program is being developed with extended durations, substantial engineering input, and substantial costs. Tunnel rehabilitation includes projects such as overhauling the ventilation systems, upgrading the fire suppression equipment, replacing the lighting system, or making extensive structural repairs.

Fire and Life Safety Systems	Service Interval (1)							
	Daily	Weekly	Monthly	Quarterly	Semi-Annually	Annually	Bi- Annually	rer or AHJ
Fire Protection								
Inspect Manual Fire Alarm Boxes								
Closed-Circuit TV (CCTV) — Confirm Operation								
Automatic Fire Detectors								
Fire Extinguishers								
Inspect each fire extinguisher in the tunnel and support spaces								
If in a cabinet — Confirm operation of cabinet door — Door must latch securely and open freely								
Lubricate door handle and hinges as necessary								
Fire Standpipes								
Fire Department Connections Capped and Clear								
Confirm threads are undamaged and caps in place								
Test flow hydrant								
Confirm top nut and caps are tight but not over tight								
Fire Hydrants								
Grease top nut								
Confirm caps in place								
Test flow hydrant								
Confirm top nuts and caps are tight but not over-tight								
Fire Lines								
Freeze Protection Pumps								
Clean and visually inspect								
Lubricate and grease pumps								
Heat Tracing — Verify system operation (prior to system operation)								
Pipe. Insulation with Heat Tracing Verify condition (prior to system operation)								
Fire Pumps								
Visually inspect fire pump								
Operate pump--Note unusual noises or vibrations								
Lubricate pump, motor, and coupling								
Operate pump and measure current								
Check shaft alignment and shaft endplay								
Check and correct pressure gauges as required								
Measure motor and pump vibration								
Fire Pump Controller								

Exercise disconnects switch and circuit breaker								
Operate pumps from alternate and primary power								
Conduct test of system including flow and no flow conditions in accordance with NFPA 72								
Fire Tank Fill Pump								
Visually inspect pump								
Operate pump — Note unusual noises or vibrations								
Lubricate pump, motor, and coupling								
Check shaft alignment and shaft endplay								
Secondary containment provided for all hazardous materials								
MSDS sheets for all materials posted (on file)								
Inspect all floors for oil leakage. Add absorbent and clean as required to maintain safe footing								
Fire Alarm System								
Perform all tests and inspections in accordance with NFPA 72								
Make and maintain a permanent record of all inspections and tests conducted								
Open primary power supply to fire alarm panel and note sounding of trouble alarm and light								
Fire and Life Safety Systems								
Perform fire drill by use of drill switch on fire alarm panels, and check that all visual and audible signals emit a sound and tunnel SCADA system receives alarm								
Visually inspect all supervisory and waterflow alarms on any standpipe systems								
Test all heat detectors with a calibrated heat source and replace all failed units								
Test all smoke detectors by measuring and recording sensitivity; replace all failed units								
Clean all smoke and heat detector housings and check battery voltage under load								
Verify that proper alarm devices operate for the appropriate initiating device circuit								
Verify that all remote annunciators operate								
Check all lamps, alarm devices, and printers for proper operation								
Make a discharge test of batteries to determine capacity for operating system								
Communications								
Radio								
Telephone								
Egress								
Emergency Egress								
Exit Lighting/Signage/Identification								

Tenable Environment (Note: Smoke Control Ventilation is located in FireSuppression Section)								
Emergency Exits								
Cross-Passageways								
Electrical								
Emergency Lighting								
Power								
Redundant Power								
Security Plan								
Emergency Response Plan (ERP)								
E.R.P on record and all Personnel Aware of ERP								
ERP reviewed and update periodically								
Tunnel Personnel Training of execution of ERP								
Training Exercises with Participating Agencies								
Hydrocarbon Detector								
Confirm Hydrocarbon Detector will initiate local and remote alarms								
CO Monitoring Equipment								
Tunnel (Local) Sensors (Confirm Calibration and/or sensor replacement)								
Vacuum Tubing (Leak Test)								
Vacuum Pump (lubrication)								
Central Sensor								
System Calibration (as required by individual								
Comparison Gas Refill (as required)								
Life Safety and Fire Code Issues (Flammable/Hazardous Materials)								
All safety guards and covers (belt, chain, electrical								
No plastic (PVC, CPVC) pipe located in supply air passages.								
All batteries properly stored and vented. Confirm								
battery charging only taking place in well ventilated								
Flammable material stored in proper containers and properly ventilated spaces.								
Secondary containment provided for all hazardous materials								
MSDS sheets for all materials posted (on file)								
Inspect all floors for oil leakage. Add absorbent and clean as required to maintain safe footing								

Notes:
(1) The above table is intended as a guide. In all cases, maintenance should be performed in accordance with the manufacturer's specific recommendations.
(2) Perform in accordance and as recommended in unit manufacturer's literature or inspect on an interval required by the local authority having jurisdiction (AHJ).

Routine Operation and Maintenance of Lighting, Ventilation, the Power Supply System and the control system of Twin Tunnel

a) The scope of Operation & the Maintenance of the Tunnel Tubes covers its lighting system complete along with the lighting for approaches on either side, and for bus stops/bays as per Schedule B wherein lighting has been provided in terms of Street Light Poles. The scope of Operation & Maintenance also includes Ventilation Equipment, Power supply equipment, CCTV and the SCADA control computerized Communication system along with all the associated equipment viz; Cables, Sensors, Firefighting equipment as Fire extinguishers etc. to be provided at site as per the provision of the manual and this contract agreement.

b) However, the O& M requirements of civil infrastructure such as pavement, drainage, footpath, crash barrier, water leakage, shotcrete cover, etc. located inside the tunnel and foundation, substructure and super structure components of viaducts, road and drainage related, etc. on either side of the tunnel including approaches are as per **the** Technical Specifications of the agreement.

c) The purpose of Operations and Maintenance is to ensure that during the entire O&M period the tunnel with all the related equipment and facilities are kept and maintained in perfect working conditions and any defect if developed; the same shall be attended in the least period of time. It also envisages ensuring that under no circumstances the tunnels not become dark. The comprehensive maintenance shall be as per the Schedule at Annexure - A and conform to the agreement.

d) The following equipment, for Lighting, Ventilation / Power supply & the control system/GNSS/CCTV of the Tunnel tubes are required to be maintained:

- 24-hour sufficient Power supply including Power backup, Power panel room, where the power supply to the lighting and the fans circuits extended up to the LDBs/ ELDBs and the VVVF panels for lighting / Fans circuits. These power supply circuits will comprise of suitable sizes of cables and are routed through the cable supporting brackets provided in the cable duct.
- The Luminaries to be provided in different lighting Zones for ensuring proper illumination in different periods and Zones as also for the luminaries in the approaches and for viaducts.
- Jet Fans, LDBs, ELDBs and VVVF starters with SCADA equipment.
- The maintenance of sensors /indicators provided for auto operation of the Tunnel Lighting and Ventilation systems such as CO sensors, NO sensors, Temp Sensors, Visibility Sensors, Lighting Level / lux sensors, Vehicle Speed Limit Boards, d Speed Limit Boards on approaches. The entire power feeder Cables of different sizes, supplying power to the Lighting and the Ventilation equipment supported on cable Brackets.
- SCADA system - for automatic operation of the lighting system& the Ventilation system as per design during normal and emergency conditions and the OFC cable system.
- For Fire Fighting purpose - Fire Extinguisher Bottles, cylinders, water connections through pipeline in each Tunnel tube.
- Power supply room - with Power Panel & Automatic operated PF improvement panel.
- A set of Batteries and the UPS (Lin-interrupted Power Supply) unit for feeding power to the control system and the lighting system in case of power failure provided in the Control Room.
- Main Power supply system and the metering system provided in the power supply room.
- The main SCADA equipment, which are also installed in the Power Supply Room, is installed in the Power Supply Room.
- Apart from above any other Equipment, not included above but opted in use for the proper working of the Power Supply, Ventilation and Lighting System must be maintained.

e) Scope of the Operation and Maintenance of the tunnel electrification, lighting, ventilation and power supply system work generally includes: -

1. Manning / Monitoring of the Power supply room round the clock by a well-trained/experienced and competent person to observe any untoward. Trained/ experienced and competent person to observe any untoward incidence in the tunnel approaches and inside the Tunnels must report the same to the appropriate Authorities. The authorized person on duty shall be in proper uniform so that he is easily approachable/identifiable when in work.
2. The Contract is for comprehensive (including replacement of defective equipment / parts by the Concessionaire) maintenance for the Concession Period.
3. In case of unsatisfactory maintenance service exhibits by the Concessionaire, it shall be deemed as failure of performance of Maintenance obligations (as per Schedule E) by the Concessionaire and the Authority/Authority Engineer shall be entitled to effect reduction in monthly lump sum payment for maintenance in accordance with Clause 17.8 and Schedule M.
4. Payments — As per agreement, the Concessionaire shall maintain the Project Tunnel for Concession period commencing from the date of completion/provisional completion as per provisions of Article 14 of the Contract Agreement. For the performance of its maintenance obligations, the Concessionaire shall be paid on submission of monthly bill duly certified by the Client/ Authority's Engineer.
5. A joint inspection with the IE / Authority by the Qualified Engineer of Concessionaire shall be carried out once a month, who shall ensure that the routine preventive maintenance is being attended / done as per the schedule.
6. The Operator shall walk through the tunnels, on the provided walkway for routine inspection usually inspecting the systems inside the tunnels at least once in 4 hours and record about any non-working equipment, unusual condition including the Tunnel approach street lights and other equipment / parts of the equipment provided inside the tunnels and makes a record in the Routine inspection register apart from reporting to the concerned authorities, if needed. He should ensure that the equipment (Lighting, Ventilation, CCTV/GNSS and SCADA and power supply equipment) is always in perfect working order. In case of some fault that occurs, the equipment shall be rectified and rectified as early as possible but not later than 06 hours.
7. It shall be ensured that all the required spares for emergency repairs shall always be available in the control room for immediate remedial action in the event of failure.
8. The operator shall maintain a Logbook as per the format given in Annexure — B.
9. In the event of power failure, the Concessionaire shall take immediate action by informing the power supply authorities and get supply transferred to the alternative second live feeder for backup besides informing the Consultants/Independent Engineer. The Concessionaire shall be expected to be alert and Vigil at all times till the proper supply is re-stored.
10. In the event of failure of light in a luminaries or flickering of light bulb, or any other failure, nonworking of the sensors if any etc. The concessionaire shall arrange the rectification by providing the bulb /starting gear etc. whatsoever within 6 hours period.
11. Jet Fans functioning and the operation of its allied equipment shall be checked twice a week both in terms of manual as well as in auto operation mode.
12. The physical operation of all the MCCBs, MCBs and the contactors / connectors shall be checked at least once a month.
13. Earthing circuits including the earth mat shall be regularly checked for resistivity once in 6 months and if necessary, shall be watered etc., to improve the Resistance. The total resistance shall not be more than 100hms. (<10 Ohms).
14. All the luminaries shall be cleaned with pressure spray water or any other relevant procedure with the glass cleaning chemical compound like LIRYL or equivalent at least once in 6 months' period.
15. All the Luminaries shall be cleaned with pressure spray water or any other relevant procedure with the glass cleaning chemical compound like LIRYL or equivalent at least once in 6 months' period.

16. For Jet Fans, check for the vibration level, check for abnormal sound, check in fixing of proper base Plate embedded in the crown of the tunnel shall be done once in every Six months' period. (06 Month).
17. The Fan blades & the complete body of the fans shall be cleaned with proper liquid cleaning compound once in 6 months.
18. Fire Extinguishers to be checked once in 6 months for its validity and expiry, if required to be re-filled.
19. UPS and the batteries to be thoroughly inspected cleaned & any abnormality observed recorded, this check shall be done once in a week. (1 week)
20. To observe / ascertain the correct working / functioning of UPS / batteries, the main power supply shall be switched off for 2 minutes (2 min) This procedure shall be done once in Two weeks and recorded.
21. All records shall be kept and maintained in the hard disc of the laptop for control system if required for any adjustment in the set values of the sensors.
22. Power Panel - All the Bus bars connections, meters on the bus bars to be cleaned loose connections to be observed attended once in a year. Dust blowing operation to be done once in 6 months.
23. All the records shall be kept and maintained in the hard disc of the laptop for control system if required for any adjustment in the set values of the sensors.
24. Check the loose connections & tighten them properly, remove the dust, in the MCBs, MCBs, & the ACBs switches by Air Blowing method at least once in 3 months. Record all the unusual incidents in the Register. Operation/Working of the Street Lighting under Timer control shall be checked daily.
25. Jet Fans Operation to be checked at least once a week and recorded.
26. Ensure that a set of "As Built Drawings" and technical literature of all the equipment used, specification of the equipment, the names of suppliers, copies of the test results conducted etc. are kept in the control room for day-to-day use and reference.
27. Vibration and sound level of each jet fan is required to be checked once in a year. Check the eat thing values at every 6-month interval and provide the Required Check each day for scaling the maximum demand verses the sanctioned Demand. Check the Operation / Working of the tunnel lighting control. Check the Operation of Lighting Sensors/Timers. Also check for any abnormal/unsafe condition for the following mentioned items:
28. Operation of Lighting Sensors / Timers. Also check for any abnormal /unsafe condition for the following mentioned below item: -
    - Cables
    - LDBEs
    - ELDBEs
    - VVVF Starters
    - SCADA Equipment INSIDE VVVF Switch Boards
    - Continuance of Earthing Conductor and its condition
    - Any disconnection in the earthing system noticed.
    - Cable supporting trays
    - Positioning of sensors.

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

1	Crack Sealing and joint Resealing	7 days each
2	Crack Stitching (cross stitching)	7 days each

3	Partial depth Repair	7 days per joint /crack/rigid slab location or potholes of one slab
4	Full depth Repair	30 days
5	Slab Stabilization	7 days per slab
6	Repair for Load transfer failure (Retrofit of dowel bars)	7 days per joint
7	Slab Lifting or Jacking	7 days per slab
8	Reinstate Evenness and skid Resistance (Diamond grinding)	7 days per slab
9	Diamond Grooving	7 days per slab
10	Milling Procedure	7 days per slab
11	Concrete Overlays	30 days per scale
12	Rehabilitation of Soft-Earthen-Shoulders	10 days per Km

Annexure-A Operation Schedule
(Frequency as stated in Schedule E)

FORMAT: **Date:**

Location:

Name of the Supervisor / Competent technician Name of Agency:

Tunnel Lighting, Ventilation, Power Supply and Control System Maintenance Schedule:

Sr. No	Date of Inspection	Voltage	Current	Frequency	PF	No. Of MCB	No. MCC on	Timer/Time Recorder	Anyabnormal Signal	Any MCB in Tripped Condition

The Tunnel Inspection Report: Frequency - Once /Day (Once in a Day) (Sensors: recording on laptop / Computer in the Control room.

CO-1	CO-2	NO-2	Temp-I	Temp-2	Visibility-1	Visibility-2	Jet Fans Operation for 5 Mins
					3-		

Observation: - Four Hourly (4 Hrly)

Working of Luminaires inside the Tunnel 7x24 hrs		Working of Street Light Luminaries only during nights		Working Power Points 7x24 hrs
Not Working	Flickering	Not Working	Flickering	Inside theTunnel

GNSS and CCTV shall be observed at 4 hourly frequency or as approved by IE.

Check up 1/15 days (Once in 15 days) and recorded in the Logbook.

SCADA/Panel/Any adjustment disturbed?	Condition of Fire Extinguishers	Working of Speed Indicators

Annexure - B

Inspection Report Format

S. No.	Operation of Equipment/Description	Periodicity of Maintenance/ Operation	Remarks
1	**L** T Panel		
	• Checking LT Panel Voltage, Current and Frequency	Twice a week	
	• Checking the Operation ofLT Panel for the operation	Weekly	
	• Checking Concessionaires/ MCB/ Light Feeders/Fan Feeders Etc.,	Weekly	
	• All meteres and Indicators of LT Panels to be Cheeked	Weekly	
	• Operation of Light Feeders and Fan Feeders	Weekly	
	• Earthling connection tightness	Monthly	
	• APFC Panel Power Factor to be	Twice a week	
	• Terminal Tightness	Quarterly	
2	Lighting Load		
	• Check the general working conditions of Luminaries	Twice a week	
	• Check the Light level output and record the Lux levels in logbook	Monthly	
	• LDB Feeder operation. MCB. Concessionaire operation, Timer, etc	Weekly	
	Jet Fan		
	• Check for any abnormal sound	Quarterly	
	• Check the Fan mounting, safety chain, foundation bolt.	Yearly	
	• Check the fan for bearing condition	Yearly	
4	Starter/VFD Panels		
	• Indications for all Starter Panels	Twice a week	
	• Starting and ending Current to be noted	Quarterly	
	• VFD Module operation, Concessionaires, and other switchgear Operations	Monthly	

S. No .	**Operation of Equipment/Description**	**Periodicity of Maintenance/** Operation	**Remarks**
5	• Earth Resistance		
	• Earth Value to be checked	Quarterly	
6	UPS		
	• Check the UPS for proper functioning on Mains and Batteries	Twice a week	
	• Battery Back up to be checked	Twice a week	
7	Entire SCADA control system & their associated Equipment		
	• All Operation to be Checked	Weekly	
	• All Sensors to be cleaned and checked	Weekly	
	• Calibration of Sensors	Weekly	
	• Software, Interface Unit, etc., to be checked for the proper functioning & Validity	Monthly	
8	Streetlight visual /Physical Inspection		
	Working of Street Lights	Weekly	
	Pole J B Terminal Connections and proper earthlings	Monthly	
	Inspection of fixtures	Monthly	
9	All items to be covered and checked if not specified as an item in the schedule	Weekly	

SCHEDULE –L

(See Clause 18.1.1)

SAFETY REQUIREMENTS (As per Codal Provisions)

1 Guiding principles

1.1 Safety Requirements aim at reduction in injuries, loss of life and damage to property resulting from accidents on the Project Tunnel, irrespective of the person(s) at fault.

1.2 Users of the Project Tunnel include motorised and non-motorised vehicles as well as pedestrians and animals involved in or associated with accidents. Vulnerable Road Users(VRU) include pedestrians as well as riders of motorised two-wheelers, bicycles and othervehicles which do not provide adequate occupant protection.

1.3 Safety Requirements apply to all phases of construction, operation and maintenance with emphasis on identification of factors associated with accidents, consideration of the same,and implementation of appropriate remedial measures.

1.4 Safety Requirements include measures associated with traffic management and regulationsuch as road signs, pavement marking, traffic control devices, roadside furniture, highway design elements, enforcement and emergency response.

2 Obligations of the Concessionaire

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

(a) Applicable Laws and Applicable Permits;

(b) Manual for Safety in Road Design, issued by MORTH;

(c) relevant Standards/Guidelines of IRC relating to safety, road geometrics, bridges, culverts, road signs, pavement marking and roadside furniture;

(d) provisions of this Agreement; and

(e) Good Industry Practice.

3 Appointment of Safety Consultant

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

4 Safety measures during Development Period

4.1 No later than 90 (ninety) days from the date of this Agreement, the Authority shall appointa Safety Consultant for carrying out safety audit at the design stage of the Project. The Safety Consultant shall collect data on all fatal crashes and other road accidents which occurred on the Project Tunnel in the preceding two years by obtaining copies of the relevant First Information Reports (FIRs) from the police stations having jurisdiction. Theinformation contained in such FIRs shall be summarised in the form prescribed byIRC/MORTH for this purpose and the data shall be analysed for the type of victims killedor injured, impacting vehicles, location of accidents and other relevant factors.

4.2 The Concessionaire shall provide to the Safety Consultant, in four copies, the relevant drawings containing the design details that have a bearing on safety of Users (the "**SafetyDrawings**"). Such design details shall include horizontal and vertical alignments; sightlines; layouts of intersections; interchanges; road cross-section; bridges and culverts;side drains; provision for parked vehicles, slow moving vehicles (tractors, bullock carts, bicycles) and pedestrians; bus bays; truck lay-bys; and other incidental or consequential information. The Safety Consultant shall review the design details and forward three copiesof the Safety Drawings with its recommendations, if any, to the Independent Engineer whoshall record its comments, if any, and forward one copy each to the Authority and the Concessionaire.

4.3 The accident data and the design details shall be compiled, analysed and used by the Safety

Consultant for evolving a package of recommendations consisting of safety related measures for the Project Tunnel. The safety audit shall be completed in a period of threemonths and a report thereof (the "**Safety Report**") shall be submitted to the Authority, in five copies. One copy each of the Safety Report shall be forwarded by the Authority to theConcessionaire and the Independent Engineer forthwith.

4.4 The Concessionaire shall endeavour to incorporate the recommendations of the Safety Report in the design of the Project Tunnel, as may reasonably be required in accordancewith Applicable Laws, Applicable Permits, Manuals and Guidelines of MORTH and IRC,Specifications and Standards, and Good Industry Practice. If the Concessionaire does not agree with any or all of such recommendations, it shall state the reasons thereof and conveythem to the Authority forthwith. In the event that any or all of the works and services recommended in the Safety Report fall beyond the scope of Schedule-B, Schedule-C or Schedule-D, the Concessionaire shall make a report thereon and seek the instructions of the Authority for funding such works in accordance with the provisions of Article 18.

4.5 Without prejudice to the provisions of Paragraph 4.4, the Concessionaire and the Independent Engineer shall, within 15 (fifteen) days of receiving the Safety Report, send their respective comments thereon to the Authority, and no later than 15 (fifteen) days of receiving such comments, the Authority shall review the same along with the Safety Reportand by notice direct the Concessionaire to carry out any or all of the recommendations contained therein with such modifications as the Authority may specify; provided that anyworks or services required to be undertaken hereunder shall be governed by the provisionsof Article 18.

5 Safety measures during Construction Period

I. A Safety Consultant shall be appointed by the Authority, no later than 4 (four) months priorto the expected Project Completion Date, for carrying out a safety audit of the completed Construction Works.

II. The Safety Consultant shall collect and analyse the accident data for the preceding two years in the manner specified in Paragraph 4.1 of this Schedule-L. It shall study the SafetyReport for the Development Period and inspect the Project Tunnel to assess the adequacyof safety measures. The Safety Consultant shall complete the safety audit within a period of 4 (four) months and submit a Safety Report recommending a package of additional roadsafety measures, if any, that are considered essential for reducing accident hazards on the Project Tunnel. Such recommendations shall be processed, *mutatis mutandis*, and actedupon in the manner set forth in Paragraphs 4.3, 4.4 and 4.5 of this Schedule-L.

III. The Concessionaire shall make adequate arrangements during the Construction Period for the safety of workers and road users in accordance with Applicable Laws and Good Industry Practice for safety in construction zones, and notify the Authority and the Independent Engineer about such arrangements.

6 Safety measures during Operation Period

6.1 The Concessionaire shall develop, implement and administer a surveillance and safety programme for Users, including correction of safety violations and deficiencies and all other actions necessary to provide a safe environment in accordance with this Agreement.

6.2 The Concessionaire shall establish a Highway Safety Management Unit (the "**HSMU**") tobe functional on and after Appointed Date and designate one of its officers to be in-charge of the HSMU. Such officer shall have specialist knowledge and training in road safety and traffic engineering by having attended a course conducted by a reputed organization on the subject.

6.3 The Concessionaire shall keep a copy of every FIR recorded by the Police with respect toany accident occurring on the Project Tunnel. In addition, the Concessionaire shall also collect data for all cases of accidents not recorded by the Police but where a vehicle rolledover or had to be towed away. The information so collected shall be summarised in the form prescribed by IRC/ MORTH for this purpose. The Concessionaire shall also record the exact location of each accident on a road map. The aforesaid data shall be submitted tothe Authority at the conclusion of every quarter and to the Safety Consultant as and whenappointed.

6.4 The Concessionaire shall submit to the Authority before the 31st (thirty first) May of each year, an annual report (in ten copies) containing, without limitation, a detailed listing and analysis of

all accidents of the preceding Accounting Year and the measures taken by the Concessionaire pursuant to the provisions of Paragraph 6.1 of this Schedule-L for avertingor minimising such accidents in future.

6.5 Once in every Accounting Year, a safety audit shall be carried out by the Safety Consultant to be appointed by the Authority. It shall review and analyse the annual report and accidentdata of the preceding year and undertake an inspection of the Project Tunnel. The SafetyConsultant shall complete the safety audit within a period of 1 (one) month and submit a Safety Report recommending specific improvements, if any, required to be made to the road, bridges, culverts, markings, signs, road furniture and Project Facilities, including cattle crossings and pedestrian crossings. Such recommendations shall be processed, *mutatis mutandis*, and acted upon in the manner set forth in Paragraphs 4.3, 4.4 and 4.5 ofthis Schedule-L.

7 Costs and expenses

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

SCHEDULE –M

(See Clause19.5)

MONTHLY FEE STATEMENT

Project Tunnel: **Month:**

Type of Vehicle	For corresponding month of previous year		For preceding month		For the monthreported upon		
	No. of Vehicles	Fee collected (in lakh Rs.)	No. of Vehicle s	Fee collected (in lakh Rs.)	Fee per Vehicle (in Rs.)	No. of Vehicle s	Fee collected (in lakh Rs.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
A Car							
B LCV							
C Bus							
D Truck							
E Three-Axle Vehicle							
F Heavy construction machinery or Earth moving equipment or multi-axle vehicle							
G Oversized vehicle							
H **Total**							

Note 1: The above statement does not include Local Users and vehicles travelling on Passes

Note 2: Monthly Fee Statements for Passes have been prepared separately in the above format andare enclosed.

Remarks, if any:

SCHEDULE –N

(See Clause22.1)

WEEKLY TRAFFIC CENSUS

Project Tunnel: **Week ending:**

Type of Vehicle	No. of vehicles using the Project Tunnel during		
	Corresponding week/last year	Preceding week	Week of report
(1)	(2)	(3)	(4)
A Fee paying Traffic A1 Car			
A2 LCV			
A3 Bus			
A4 Truck			
A5 Three-Axle Vehicle			
A6Heavy construction machinery or Earth moving equipment or Multi-axle vehicle			
A7Oversized vehicle			
Total (A)			
B Local Users B1 Car			
Total (B)			
C Exempted Vehicles C1 Motor Cycle			
C2 Car			
C3 LCV			
C4 Bus			
C5 Truck			
C6 Three-Axle Vehicle			
C7 Heavy construction machinery or Earth moving equipment or Multi-axle vehicle			
C8 Tractor			
Total (C)			
D Total Traffic (A+B-C)D1 Motor Cycle			
D2 Car			
D3 LCV			
D4 Bus			
D5 Truck			
D6 Three-Axle Vehicle			
D7Heavy construction machinery or Earth moving equipment or Multi-axle vehicle			
D8Oversized vehicle			
D9 Tractor			
Grand Total (E)			

Remarks, if any:

WEEKLY REPORT FOR WEIGH STATIONS

Project Tunnel: **Week ending:**

Type of Vehicle	Permitted Gross Vehicle Weight (Tonnes)	No. of Vehicles weighed (Sample size)	No. of Vehicles carrying load:			
			Within permissible limits	Up to 10%in excess	Over 10% and up to 20% in excess	Over 20% in excess
(1)	(2)	(3)	(4)	(5)	(6)	(7)
A LCV						
B Truck						
C Three-Axle Vehicle						
D Heavy construction machinery or Earth moving equipment or Multi-axle vehicle						
E **Total**						

Note: Sample size shall not be less than 200 Trucks per week and 20 Trucks per day, and shouldinclude a proportionate number of Multi-axle Trucks.

Remarks, if any:

SCHEDULE –O

DELETED

SCHEDULE –P

(See Clause 23.1)

SELECTION OF INDEPENDENT ENGINEER

1 Selection of Independent Engineer

1.1 The provisions of Part II of the Standard Bidding Documents for Consultancy Assignments: Time Based (Volume V) issued by the Ministry of Finance, GOI in July, 1997 or any substitute thereof shall apply, *mutatis mutandis*, for invitation of bids and evaluation thereof save as otherwise provided herein.

1.2 The Authority shall invite expressions of interest from consulting engineering firms or bodies corporate to undertake and perform the duties and functions set forth in Schedule- Q and thereupon shortlist 10 (ten) qualified firms in accordance with pre-determined criteria. The Authority shall convey the aforesaid list of firms to the Concessionaire for scrutiny and comments, if any. The Concessionaire shall be entitled to scrutinise the relevant records of the Authority to ascertain whether the selection of firms has been undertaken in accordance with the prescribed procedure and it shall send its comments, if any, to the Authority within 15 (fifteen) days of receiving the aforesaid list of firms. Uponreceipt of such comments, if any, the Authority shall, after considering all relevant factors,finalise and constitute a panel of 10 (ten) firms (the "**Panel of Firms**") and convey its decision to the Concessionaire.

1.3 The Authority shall invite the aforesaid firms in the Panel of Firms to submit their respective technical and financial offers, each in a separate sealed cover. All the technicalbids so received shall be opened and pursuant to the evaluation thereof, the Authority shallshortlist 3 (three) eligible firms on the basis of their technical scores. The financial bids inrespect of such 3 (three) firms shall be opened and the order of priority as among these firms shall be determined on the basis of a weighted evaluation where technical and financial scores shall be assigned respective weights of 80:20.

1.4 In the event that the Authority shall follow the selection process specified in the Model RFP for selection of Technical Consultants, as published by the Ministry of Finance/ Planning Commission, the selection process specified in this Schedule-P shall be deemed to be substituted by the provisions of the said Model RFP and the Concessionaire shall beentitled to scrutinise the relevant records forming part of such selection process.

2 Fee and expenses

2.1 In determining the nature and quantum of duties and services to be performed by the Independent Engineer during the Development Period and Construction Period, the Authority shall endeavour that payments to the Independent Engineer on account of fee and expenses do not exceed 2% (two per cent) of the Total Project Cost. Payments not exceeding such 2% (two per cent) shall be borne equally by the Authority and the Concessionaire in accordance with the provisions of this Agreement and any payments in excess thereof shall be borne entirely by the Authority.

2.2 The nature and quantum of duties and services to be performed by the Independent Engineer during the Operation Period shall be determined by the Authority in conformity with the provisions of this Agreement and with due regard for economy in expenditure. Allpayments made to the Independent Engineer on account of fee and expenses during the Operation Period, shall be borne equally by the Authority and the Concessionaire.

3 Constitution of fresh panel

No later than three years from the date of this Agreement, and every three years thereafter,the Authority shall prepare a fresh panel of firms in accordance with the criteria set forth in this Schedule-P; provided that the Authority may, at any time, prepare a fresh panel withprior written consent of the Concessionaire.

4 Appointment of government entity as Independent Engineer

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

SCHEDULE –Q

(See Clause 23.2.1)

TERMS OF REFERENCE FOR INDEPENDENT ENGINEER

1 Scope

1.1 These Terms of Reference for the Independent Engineer (the "**TOR**") are being specified pursuant to the Concession Agreement dated .....(the "**Agreement**"), which has been entered into between the Authority and ..... (the "**Concessionaire**") for Design and Construction of 3-Lane Underground Twin Tunnel Road from Hebbal Esteem Mall junction (Km. 0+000) to Silk Board KSRP Junction (Km.16+745) along with 3-lane/2-lane entry & exit ramps including operation and maintenance in Bengaluru City (North South Corridor) – on MODIFIED BOOT MODE. Package 1: Hebbal Esteem Mall junction (Km. 0+000) to Seshadri Road, Race Course Junction (Km 8.748). and a copy of which is annexed hereto and marked as Annex-A to form part of this TOR.

1.2 This TOR shall apply to the construction, operation and maintenance of the Project Tunnel.

2 Definitions and interpretation

2.1 The words and expressions beginning with or in capital letters used in this TOR and not defined herein but defined in the Agreement shall have, unless repugnant to the context, the meaning respectively assigned to them in the Agreement.

2.2 References to Articles, Clauses and Schedules in this TOR shall, except where the context otherwise requires, be deemed to be references to the Articles, Clauses and Schedules of the Agreement, and references to Paragraphs shall be deemed to be references to Paragraphs of this TOR.

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

3 Role and functions of the Independent Engineer

3.1 The role and functions of the Independent Engineer shall include the following:

(i) review of the Drawings and Documents as set forth in Paragraph 4;

(ii) review, inspection and monitoring of Construction Works as set forth in Paragraph5;

(iii) conducting Tests on completion of construction and issuingCompletion/Provisional Certificate as set forth in Paragraph 5;

(iv) review, inspection and monitoring of O&M as set forth in Paragraph 6;

(v) review, inspection and monitoring of Divestment Requirements as set forth in Paragraph 7;

(vi) determining, as required under the Agreement, the costs of any works or services and/or their reasonableness;

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

(viii) assisting Authority in review and inspection of the books of accounts submitted bythe Concessionaire to the Authority and the records maintained by Concessionaireas set forth in Paragraph 12

(ix) providing all requisite data on monthly basis within a period of 7 days from the close of month, as required by Authority, for updating the project specific websitesubstantially in the format prescribed at **Appendix – IV**

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

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

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

4 Development Period

4.1 During the Development Period, the Independent Engineer shall undertake a detailed review of the Drawings to be furnished by the Concessionaire along with supporting data,including the geo-technical and hydrological investigations, characteristics of materials from borrow areas and quarry sites, topographical surveys and traffic surveys. The Independent Engineer shall complete such review and send its comments/observations to the Authority and the Concessionaire within 30 (thirty) days of receipt of such Drawings. In particular, such comments shall specify the conformity or otherwise of such Drawings with the Scope of the Project and Specifications and Standards.

4.2 The Independent Engineer shall review any modified Drawings or supporting Documentssent to it by the Concessionaire and furnish its comments within 15 (fifteen) days of receiving such Drawings or Documents.

4.3 The Independent Engineer shall review the Drawings sent to it by the Safety Consultant in accordance with Schedule-L and furnish its comments thereon to the Authority and the Concessionaire within 15 (fifteen) days of receiving such Drawings. The Independent Engineer shall also review the Safety Report and furnish its comments thereon to the Authority within 30 (thirty) days of receiving such report.

4.4 The Independent Engineer shall review the detailed design, construction methodology, quality assurance procedures and the procurement, engineering and construction time schedule sent to it by the Concessionaire and furnish its comments within 30 (thirty) daysof receipt thereof.

4.5 Upon reference by the Authority, the Independent Engineer shall review and comment on the EPC Contract or any other contract for construction, operation and maintenance of theProject Tunnel, and furnish its comments within 15 (fifteen) days from receipt of such reference from the Authority.

5 Construction Period

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

5.2 The Independent Engineer shall review the monthly progress report furnished by the Concessionaire and send its comments thereon to the Authority and the Concessionaire within 7 (seven) days of receipt of such report.

5.3 The Independent Engineer shall inspect the Construction Works and the Project Tunnel once every month, preferably after receipt of the monthly progress report from theConcessionaire, but before the 20th (twentieth) day of each month in any case, and make out a report of such inspection (the "**Inspection Report**") setting forth an overview of thestatus, progress, quality and safety of construction, including the work methodology adopted, the materials used and their sources, and conformity of Construction Works with the Scope of the Project and the Specifications and Standards. In a separate section of the Inspection Report, the Independent Engineer shall describe in reasonable detail the lapses,defects or deficiencies observed by it in the construction of the Project Tunnel. The Inspection Report shall also contain a review of the maintenance of the existing lanes in conformity with the provisions of the Agreement. The Independent Engineer shall send a copy of its Inspection Report to the Authority and the Concessionaire within 7 (seven) daysof the inspection.

5.4 The Independent Engineer may inspect the Project Tunnel more than once in a month ifany lapses, defects or deficiencies require such inspections.

5.5 For determining that the Construction Works conform to Specifications and Standards, the Independent Engineer shall require the Concessionaire to carry out, or cause to be carried out, tests on a sample basis, to be specified by the Independent Engineer in accordance with Good Industry Practice for quality assurance. For purposes of this Paragraph 5.5, thetests specified in the IRC Special Publication-11 (Handbook of Quality Control forConstruction 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. The Independent Engineer shall issue necessary directions to the Concessionaire to ensure that the tests are conducted in a fair and

efficient manner and shall monitor and review the results thereof.

5.6 The sample size of the tests, to be specified by the Independent Engineer under Paragraph 5.5, shall comprise 10% (ten per cent) of the quantity or number of tests prescribed for eachcategory or type of tests in the Quality Control Manuals; provided that the Independent Engineer may, for reasons to be recorded in writing, increase the aforesaid sample size byup to 10% (ten per cent) for certain categories or types of tests.

5.7 The timing of tests referred to in Paragraph 5.5, and the criteria for acceptance/ rejection of their results shall be determined by the Independent Engineer in accordance with the Quality Control Manuals. The tests shall be undertaken on a random sample basis and shallbe in addition to, and independent of, the tests that may be carried out by the Concessionairefor its own quality assurance in accordance with Good Industry Practice.

5.8 In the event that the Concessionaire carries out any remedial works for removal or rectification of any defects or deficiencies, the Independent Engineer shall require the Concessionaire to carry out, or cause to be carried out, tests to determine that such remedialworks have brought the Construction Works into conformity with the Specifications and Standards, and the provisions of this Paragraph 5 shall apply to such tests.

5.9 In the event that the Concessionaire fails to achieve any of the Project Milestones, the Independent Engineer shall undertake a review of the progress of construction and identifypotential delays, if any. If the Independent Engineer shall determine that completion of theProject Tunnel is not feasible within the time specified in the Agreement, it shall requirethe Concessionaire to indicate within 15 (fifteen)days the steps proposed to be taken to expedite progress, and the period within which the Project Completion Date shall be achieved. Upon receipt of a report from the Concessionaire, the Independent Engineer shallreview the same and send its comments to the Authority and the Concessionaire forthwith.

5.10 If at any time during the Construction Period, the Independent Engineer determines that the Concessionaire has not made adequate arrangements for the safety of workers and Users in the zone of construction or that any work is being carried out in a manner that threatens the safety of the workers and the Users, it shall make a recommendation to the Authority forthwith, identifying the whole or part of the Construction Works that should be suspended for ensuring safety in respect thereof.

5.11 In the event that the Concessionaire carries out any remedial measures to secure the safetyof suspended works and Users, it may, by notice in writing, require the Independent Engineer to inspect such works, and within 3 (three) days of receiving such notice, the Independent Engineer shall inspect the suspended works and make a report to the Authorityforthwith, recommending whether or not such suspension may be revoked by the Authority.

5.12 If suspension of Construction Works is for reasons not attributable to the Concessionaire, the Independent Engineer shall determine the extension of dates set forth in the Project Completion Schedule, to which the Concessionaire is reasonably entitled, and shall notifythe Authority and the Concessionaire of the same.

5.13 The Independent Engineer shall carry out, or cause to be carried out, all the Tests specifiedin Schedule-I and issue a Completion Certificate or Provisional Certificate, as the case maybe. For carrying out its functions under this Paragraph 5.13 and all matters incidental thereto, the Independent Engineer shall act under and in accordance with the provisions ofArticle 14 and Schedule-I.

5.14 Upon reference from the Authority, the Independent Engineer shall make a fair and reasonable assessment of the costs of providing information, works and services as set forthin Article 16 and certify the reasonableness of such costs for payment by the Authority to the Concessionaire.

5.15 The Independent Engineer shall aid and advise the Concessionaire in preparing the Maintenance Manual.

6 Operation Period

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

6.2 The Independent Engineer shall review the annual Maintenance Programme furnished by the Concessionaire and send its comments thereon to the Authority and the Concessionairewithin 15 (fifteen) days of receipt of the Maintenance Programme.

6.3 The Independent Engineer shall review the monthly status report furnished by the Concessionaire and send its comments thereon to the Authority and the Concessionaire within 7 (seven) days of receipt of such report.

6.4 The Independent Engineer shall inspect the Project Tunnel once every month, preferablyafter receipt of the monthly status report from the Concessionaire, but before the 20th (twentieth) day of each month in any case, and make out an O&M Inspection Report settingforth an overview of the status, quality and safety of O&M including its conformity with the Maintenance Requirements and Safety Requirements. In a separate section of the O&MInspection Report, the Independent Engineer shall describe in reasonable detail the lapses, defects or deficiencies observed by it in O&M of the Project Tunnel. The Independent Engineer shall send a copy of its O&M Inspection Report to the Authority and the Concessionaire within 7 (seven) days of the inspection.

6.5 The Independent Engineer may inspect the Project Tunnel more than once in a month, ifany lapses, defects or deficiencies require such inspections.

6.6 The Independent Engineer shall in its O&M Inspection Report specify the tests, if any, thatthe Concessionaire shall carry out, or cause to be carried out, for the purpose of determiningthat the Project Tunnel 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 theConcessionaire in this behalf.

6.7 In respect of any defect or deficiency referred to in Paragraph 3 of Schedule-K, the Independent Engineer shall, in conformity with Good Industry Practice, specify thepermissible limit of deviation or deterioration with reference to the Specifications and Standards and shall also specify the time limit for repair or rectification of any deviation or deterioration beyond the permissible limit.

6.8 The Independent Engineer shall determine if any delay has occurred in completion of repairor remedial works in accordance with the Agreement, and shall also determine theDamages, if any, payable by the Concessionaire to the Authority for such delay.

6.9 The Independent Engineer shall examine the request of the Concessionaire for closure of any lane(s) of the carriageway for undertaking maintenance/repair thereof, keeping in viewthe need to minimise disruption in traffic and the time required for completing such maintenance/repair in accordance with Good Industry Practice. It shall grant permission with such modifications, as it may deem necessary, within 3 (three) days of receiving a request from the Concessionaire. Upon expiry of the permitted period of closure, the Independent Engineer shall monitor the re-opening of such lane(s), and in case of delay, determine the Damages payable by the Concessionaire to the Authority under Clause 17.7.

The Independent Engineer shall monitor and review the curing of defects and deficienciesby the Concessionaire as set forth in Clause 19.4.

6.10 In the event that the Concessionaire notifies the Independent Engineer of any modificationsthat it proposes to make to the Project Tunnel, the Independent Engineer shall review thesame and send its comments to the Authority and the Concessionaire within 15 (fifteen) days of receiving the proposal.

6.11 Audit of Fee collection system

The Independent Engineer shall, at least once every month, conduct an audit of the working of the automatic Fee collection system installed by the Concessionaire, to check its accuracy in recording the entry and exit of Users and in recording the Fee.

6.12 The Independent Engineer shall be responsible for tracking the toll revenues against the Bid TCV and give regular recommendations to the Authority regarding the continuation or termination of the Concession Period. The review of the Concession Period shall be done at an annual frequency initially, but as soon as the NPV of toll revenues reached 90% of the Bid TCV, the review frequency shall change to monthly.

7 Termination

7.1 At any time, not earlier than 90 (ninety) days prior to Termination but not later than 15 (fifteen) days prior to such Termination, the Independent Engineer shall, in the presence ofa representative of the Concessionaire, inspect the Project Tunnel for determining compliance by the Concessionaire with the Divestment Requirements set forth in Clause

38.1 and, if required, cause tests to be carried out at the Concessionaire's cost for determining such compliance. If the Independent Engineer determines that the status of theProject Tunnel is such that its repair and rectification would require a larger amount thanthe sum set forth in Clause 39.2, it shall recommend retention of the required amount in the Escrow Account and the period of retention thereof.

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

8 Determination of costs and time

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

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

9 Assistance in Dispute resolution

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

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

10 Other duties and functions

The Independent Engineer shall perform all other duties and functions specified in the

Agreement.

11 Miscellaneous

11.1 The Independent Engineer shall notify its programme of inspection to the Authority and to the Concessionaire, who may, in their discretion, depute their respective representatives to be present during the inspection.

11.2 A copy of all communications, comments, instructions, Drawings or Documents sent by the Independent Engineer to the Concessionaire pursuant to this TOR, and a copy of all thetest results with comments of the Independent Engineer thereon shall be furnished by the Independent Engineer to the Authority forthwith.

11.3 The Independent Engineer shall obtain, and the Concessionaire shall furnish in two copiesthereof, all communications and reports required to be submitted, under this Agreement, by the Concessionaire to the Independent Engineer, whereupon the Independent Engineershall send one of the copies to the Authority along with its comments thereon.

11.4 The Independent 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.

11.5 Upon completion of its assignment hereunder, the Independent Engineer shall duly classifyand list all Drawings, Documents, results of tests and other relevant records, and hand themover to the Authority or such other person as the Authority may specify and obtain writtenreceipt thereof. Two copies of the said documents shall also be furnished in microfilm form or in such other medium as may be acceptable to the Authority.

12. Assistance to Authority in review of book of accounts

12.1 Upon receipt of copy of books of accounts from Authority, the Independent Engineer shall review the Escrow account statements with respect to the provisions of the Escrow agreement, books of accounts for information pertaining (a) the traffic count (b) Fee determination thereof, and (c) Project costs, and (d) such other information relating or resulting from other duties and functions of Independent Engineer in accordance with the Agreement, as the Authority may reasonably require and submit its report within 10 days.

FORMAT FOR THE PROGRESS OF THE PROJECT

(It is a sample format and may be modified as per the requirements of the project)

(under clause 23.2.4 and para 3.1 (ix) of Schedule-Q)

APPENDIX-IV*
FORMAT FOR THE PROGRESS OF THE PROJECT
(under clause 23.2.4 and para 3.1 (ix) of Schedule-Q)
Name of the Project:…… …… ……
State:……. NH No……. Length (in km):……
Authority TPC (INR in crore) …… Concessionaire TPC (INR in crore)…… Amount of Advances (INR in crore):……

Month and Year:-

BOQ item		Unit	As per the work programme at appointed date		Physical progress actual achieved(%)		Deficiency in theprogress	Financial Expenditure excluding advances (INR incrore)			Remarks
			Physical (%)	Financial	Upto last month	Current Month		Upto last month	Current month	Total	
Clearing and grubbing		k m									
Earthwork		Cum									
Subgrade		Cum									
Structural work	Culverts and Bridges										
	Sub-structure	m									
	Super structure	Cum									
	VUP, PUP, CUP etc.	Cum									
Pavement layer	Pavementlayer 1	Cum									
	Pavementlayer 2	Cum									
	Payment layer 3…..	Cum									
Drainage and protection work		k m									
Project facilities											
Miscellaneous items											

It is a sample format and may be modified as per the requirements of the project

SCHEDULE –R

(See Clause 27.1.1)

FEE NOTIFICATION

Government of Karnataka

NOTIFICATION

Bengaluru, the …… 20…

No. ……

Government of Karnataka has entrusted Design and Construction of 3-Lane Underground Twin Tunnel Road from Hebbal Esteem Mall junction (Km. 0+000) to Silk Board KSRP Junction (Km.16+745) along with 3-lane/2-lane entry & exit ramps including operation and maintenance in Bengaluru City (North South Corridor) – on MODIFIED BOOT MODE. Package 1: Hebbal Esteem Mall junction (Km. 0+000) to Seshadri Road, Race Course Junction (Km 8.748) to Bengaluru Smart Infrastructure Limited (B-SMILE) (hereinafter referred to as the "Authority");

Whereas, by the Government of Karnataka notification number PWD 06 EAP 2012 (P3), dated March 7, 2015 issued by the Public Works, Ports & Inland Water Transport Department, under Karnataka Road User Fee (Determination of Rates and Collection) Rules, 2013, which superseded the earlier rules related to private investment project road toll or user fee determination, according to the Karnataka Legislature.

And whereas, pursuant to the provisions of section14 of the said Act, the Authority has entered into an agreement with ……, having its Registered Office at …….. (hereinafter referred to as "Concessionaire") for the (A) Design and Construction of 3-Lane Underground Twin Tunnel Road from Hebbal Esteem Mall junction (Km. 0+000) to Silk Board KSRP Junction (Km.16+745) along with 3-lane/2-lane entry & exit ramps including operation and maintenance in Bengaluru City (North South Corridor) – on MODIFIED BOOT MODE. Package 1: Hebbal Esteem Mall junction (Km. 0+000) to Seshadri Road, Race Course Junction (Km 8.748).;

Now, therefore, in exercise of the powers conferred by sub-section(l) of section 72 of the Karnataka Highways Act, 1964 (Karnataka Act 44 of 1964) the Government of Karnataka hereby makes the following rules, namely: -

These rules may be called the Karnataka Road User Fee (Determination of Rates and Collection) Rules, 2014 for State Highways, Standalone Structures

Whereas, the draft of the Karnataka Road User Fee (Determination of Rates and Collection) Rules, 2013 and in supersession of the Karnataka Private Investment Project (Road toll or user fee determination of rates and collection) notification 2009 was published as required by sub-section (1) of section 72 of the Karnataka Highways Act, 1964 (Karnataka Act 44 of 1964) in notification No. PWD 06 EAP 2012 P3, dated 26th August, 2013, published in Part IV A of the Karnataka Gazette (Extraordinary) No. 1094 dated 27th August, 2013,

and its subsequent amendments up to the Bid Due Date, the Central Government, having regard to the expenditure involved in building, maintenance, management and operation of the said section of the said highway, interest on the capital invested, reasonable return, the volume of traffic and the period of said agreement between

the Authority and the Concessionaire, hereby notifies that there shall be levied and collected fees on mechanical vehicles for the use of the section from Design and Construction of 3-Lane Underground Twin Tunnel Road from Hebbal Esteem Mall junction (Km. 0+000) to Silk Board KSRP Junction (Km.16+745) along with 3-lane/2-lane entry & exit ramps including operation and maintenance in Bengaluru City (North South Corridor) – on MODIFIED BOOT MODE. Package 1: Hebbal Esteem Mall junction (Km. 0+000) to Seshadri Road, Race Course Junction (Km 8.748) at the rates specified in the aforesaid Rules and authorises the said Concessionaire to collect and retain the said fees on and from the date of commercial operation of the said section of national highway, subject to and in accordance with the said Rules and the provisions of the aforesaid agreement.

The fee levied and deducted at the entry & exits of the tunnel at the locations hereunder through GNSS/ANPR system of tolling.:

S. No.	**Location of GNSS/ANPR(chainage)**	**Length (in km) for which Fee is payable**

**	***	***

[In addition to the above, the fee levied and collected hereunder for the tunnel, having length of more than 60 (Sixty) meters as specified belowshall be due and payable at the following Toll Plaza(s)

S. No. **(A)**	**Location of GNSS/ANPR** **(B)**	**Location ofStructure** **(C)**	**Normal Length of Structures(mtrs)** **(D)**	**Equivalent Length of Structures (inkms)** **(E) = (D/100)**
**	***	***	***	***

[In addition to the above, the fee levied and collected hereunder for the bypass(es) costing Rs. 10crore or more as specified below shall be due and payable at the following GNSS/ANPR, and the rate of fee shall be 1.5 times of the rate of fee as specified in Rule 4(2) of the Fee Rules.

Location of GNSS/ANPR (chainage)	**Name of the Bypass**	**Design Chainage (km)**		**Length(inkm)**
		From	To	
-----	-----	-----	-----	-----

F.No. RW/NH-……

(Name)

……,

Government of Karnataka

SCHEDULE –S

(See Clause 31.1.2)

ESCROW AGREEMENT

THIS ESCROW AGREEMENT is entered into on this the …….. day of.....20….

AMONGST

1 ……LIMITED, a company incorporated under the provisions of the Companies Act, 2013 and having its registered office at..... (hereinafter referred to as the "**Concessionaire**" which expression shall, unless repugnant to the context or meaning thereof, include its successors, permitted assigns and substitutes);

2 name and particulars of Lenders' Representative and having its registered office at acting for and on behalf of the Senior Lenders as their duly authorised agent with regard to matters arising out of or in relation to this Agreement (hereinafter referred to as the "**Lenders' Representative**" which expression shall, unless repugnant tothe context or meaning thereof, include its successors and substitutes);

3 name and particulars of the Escrow Bank and having its registered office at ……(hereinafter referred to as the "**Escrow Bank**" which expression shall, unless repugnant to the context or meaning thereof, include its successors and substitutes); and

4 Bengaluru Smart Infrastructure Limited (B-SMILE), represented by its Superintending Engineer and having its principal offices at 3rd Floor, # 30/1, Thimmaiah Road, Millers Tank Bund Area, Vasanthnagar, Bengaluru-560 052 (hereinafter referred to as the "**Authority**" whichexpression shall, unless repugnant to the context or meaning thereof, include its administrators, successors and assigns).

WHEREAS:

(A) The Authority has entered into a Concession Agreement dated.....with the

Concessionaire (the "**Concession Agreement**") for (A) Design and Construction of 3-Lane Underground Twin Tunnel Road from Hebbal Esteem Mall junction (Km. 0+000) to Silk Board KSRP Junction (Km.16+745) along with 3-lane/2-lane entry & exit ramps including operation and maintenance in Bengaluru City (North South Corridor) – on MODIFIED BOOT MODE. Package 1: Hebbal Esteem Mall junction (Km. 0+000) to Seshadri Road, Race Course Junction (Km 8.748) and a copy of which is annexed hereto and marked as Annex-A to form part of this Agreement.

(B) Senior Lenders have agreed to finance the Project in accordance with the terms and conditions set forth in the Financing Agreements.

(C) The Concession Agreement requires the Concessionaire to establish an Escrow Account,

inter alia, on the terms and conditions stated therein.

NOW THEREFORE, in consideration of the foregoing and the respective covenants and agreements set forth in this Agreement, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound hereby, the Parties agree as follows:

1 DEFINITIONS AND INTERPRETATION

1.1 Definitions

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

"Agreement" means this Escrow Agreement and any amendment thereto made in accordance withthe provisions contained herein;

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

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

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

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

"Lenders' Representative" means the person referred to as the Lenders' Representative in the foregoing Recitals;

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

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

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

1.2 Interpretation

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

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

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

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

2 ESCROW ACCOUNT

2.1 Escrow Bank to act as trustee

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

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

2.2 Acceptance of Escrow Bank

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

2.3 Establishment and operation of Escrow Account

2.3.1 Within 30 (thirty) days from the date of this Agreement, and in any case prior to the Appointed Date, the Concessionaire shall open and establish the Escrow Account with the

……. (name of Branch) Branch of the Escrow Bank. The Escrow Account shall be denominated in Rupees.

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

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

2.4 Escrow Bank's fee

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

2.5 Rights of the parties

The rights of the Authority, the Lenders' Representative and the Concessionaire in the monies held in the Escrow Account are set forth in their entirety in this Agreement and theAuthority, the Lenders' Representative and the Concessionaire shall have no other rights against or to the monies in the Escrow Account except, the facility for online viewing and downloading the account statement of Escrow Account at all times during the Concession Period.

2.6 Substitution of the Concessionaire

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

3 DEPOSITS INTO ESCROW ACCOUNT

3.1 Deposits by the Concessionaire

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

(a) all monies received in relation to the Project from any source, including the Senior Lenders, lenders of Subordinated Debt and the Authority;

(b) all funds received by the Concessionaire from its shareholders, in any manner orform;

(c) all Fee levied and collected by the Concessionaire;

(d) any other revenues, rentals, deposits or capital receipts, as the case may be, fromor in respect of the Project Tunnel; and

(e) all proceeds received pursuant to any insurance claims.

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

3.2 Deposits by the Authority

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

(a) Grant and Construction Support including any other monies disbursed by the Authority to the Concessionaire;

(b) Revenue Shortfall Loan;

(c) all Fee collected by the Authority in exercise of its rights under the Concession Agreement after COD; and

(d) Termination Payments:

Provided that, notwithstanding the provisions of Clause 4.1.1 and 4.2, the Authority shall be entitled to appropriate from the aforesaid amounts, any Concession Fee due and payableto it by the Concessionaire, and the balance remaining shall be deposited into the Escrow Account.

3.3 Deposits by Senior Lenders

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

3.4 Interest on deposits

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

4 WITHDRAWALS FROM ESCROW ACCOUNT

4.1 Withdrawals during Concession Period

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

(a) all taxes due and payable by the Concessionaire for and in respect of the Project Tunnel;

(b) all payments relating to construction of the Project Tunnel, subject to and in accordance with the conditions, if any, set forth in the Financing Agreements;

(c) O&M Expenses, subject to the ceiling, if any, set forth in the Financing Agreements;

(d) O&M Expenses and other costs and expenses incurred by the Authority in accordance with the provisions of the Concession Agreement, and certified by the Authority as due and payable to it;

(e) Concession Fee due and payable to the Authority;

(f) monthly proportionate provision of Debt Service due in an Accounting Year;

(g) Deleted

(h) all payments and Damages certified by the Authority as due and payable to it by the Concessionaire pursuant to the Concession Agreement, including repayment of Revenue Shortfall Loan;

(i) monthly proportionate provision of debt service payments due in an Accounting Year in

respect of Subordinated Debt;

(j) any reserve requirements set forth in the Financing Agreements; and

(k) balance, if any, in accordance with the instructions of the Concessionaire.

4.1.2 No later than 60 (sixty) days prior to the commencement of each Accounting Year, the Concessionaire shall provide to the Escrow Bank, with prior written approval of the Lenders' Representative, details of the amounts likely to be required for each of the payment obligations set forth in this Clause 4.1; provided that such amounts may be subsequently modified, with prior written approval of the Lenders' Representative, if freshinformation received during the course of the year makes such modification necessary.

4.2 Withdrawals upon Termination

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

(a) all taxes due and payable by the Concessionaire for and in respect of the Project Tunnel;

(b) outstanding Concession Fee;

(c) 90% (ninety per cent) of Debt Due excluding Subordinated Debt;

(d) all payments and Damages certified by the Authority as due and payable to it by the Concessionaire pursuant to the Concession Agreement, including {Premium,} repayment of Revenue Shortfall Loan and any claims in connection with or arising out of Termination;

(e) retention and payments arising out of, or in relation to, liability for defects and deficiencies set forth in Article 39 of the Concession Agreement;

(f) outstanding Debt Service including the balance of Debt Due;

(g) outstanding Subordinated Debt;

(h) incurred or accrued O&M Expenses;

(i) any other payments required to be made under the Concession Agreement; and

(j) balance, if any, in accordance with the instructions of the Concessionaire:

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

4.3 Application of insufficient funds

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

4.4 Application of insurance proceeds

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

4.5 Withdrawals during Suspension

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

5 OBLIGATIONS OF THE ESCROW BANK

5.1 Segregation of funds

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

5.2 Notification of balances

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

5.3 Communications and notices

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

(a) may, in the absence of bad faith or gross negligence on its part, rely as to any matters of fact which might reasonably be expected to be within the knowledge of the Concessionaire upon a certificate signed by or on behalf of the Concessionaire;

(b) may, in the absence of bad faith or gross negligence on its part, rely upon the authenticity of any communication or document believed by it to be authentic;

(c) shall, within 5 (five) business days after receipt, deliver a copy to the Lenders' Representative of any notice or document received by it in its capacity as the Escrow Bank from the Concessionaire or any other person hereunder or in connection herewith; and

(d) shall, within 5 (five) business days after receipt, deliver a copy to the Concessionaire of any notice or document received by it from the Lenders'Representative in connection herewith.

5.4 No set off

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

5.5 Regulatory approvals

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

6 ESCROW DEFAULT

6.1 Escrow Default

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

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

(b) the Concessionaire causes the Escrow Bank to transfer funds to any account of the Concessionaire in breach of the terms of this Agreement and fails to cure such breach by depositing the relevant funds into the Escrow Account or any Sub- Account in which such transfer should have been made, within a Cure Period of 5 (five) business days; or

(c) the Concessionaire commits or causes any other breach of the provisions of this

Agreement and fails to cure the same within a Cure Period of 5 (five) business days.

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

7 TERMINATION OF ESCROW AGREEMENT

7.1 Duration of the Escrow Agreement

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

7.2 Substitution of Escrow Bank

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

7.3 Closure of Escrow Account

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

8 SUPPLEMENTARY ESCROW AGREEMENT

8.1 Supplementary escrow agreement

The Lenders' Representative and the Concessionaire shall be entitled to enter into a supplementary escrow agreement with the Escrow Bank providing, inter alia, for detailed procedures and documentation for withdrawals from Sub-Accounts pursuant to Clause 4.1.1 and for matters not covered under this Agreement such as the rights and obligations of Senior Lenders and lenders of Subordinated Debt, investment of surplus funds, restrictions on withdrawals by the Concessionaire in the event of breach of this Agreementor upon occurrence of an Escrow Default, procedures relating to operation of the Escrow Account and withdrawal therefrom, reporting requirements and any matters incidental thereto; provided that such supplementary escrow agreement shall not contain any provision which is inconsistent with this Agreement and in the event of any conflict or inconsistency between provisions of this Agreement and such supplementary escrow agreement, the provisions of this Agreement shall prevail.

9 INDEMNITY

9.1 General indemnity

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

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

9.1.3 The Escrow Bank will indemnify, defend and hold the Concessionaire harmless against any and

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

9.2 Notice and contest of claims

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

10 DISPUTE RESOLUTION

10.1 Dispute resolution

10.1.1 The Parties may refer the dispute to the MD, B-SMILE for meditation. In case the Parties are not satisfied with the same, or a resolution is not reached, the dispute may be referred to the Chairman of B-SMILE.

10.1.2 [Deleted]

11 MISCELLANEOUS PROVISIONS

11.1 Governing law and jurisdiction

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

11.2 Waiver of sovereign immunity

The Authority unconditionally and irrevocably:

(a) agrees that the execution, delivery and performance by it of this Agreementconstitute commercial acts done and performed for commercial purpose.

(b) agrees that, should any proceedings be brought against it or its assets, property or revenues in any jurisdiction in relation to this Agreement or any transactioncontemplated by this Agreement, no immunity (whether by reason of sovereignty or otherwise) from such proceedings shall be claimed by or on behalf of the Authority with respect to its assets.

(c) waives any right of immunity which it or its assets, property or revenues now has,may acquire in the future or which may be attributed to it in any jurisdiction; and

(d) consents generally in respect of the enforcement of any judgement or award against it in any such proceedings to the giving of any relief or the issue of any process in any jurisdiction in connection with such proceedings (including the making, enforcement or execution against it or in respect of any assets, property or revenues whatsoever irrespective of their use or intended use of any order or judgement thatmay be made or given in connection therewith).

11.3 Priority of agreements

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

11.4 Alteration of terms

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

11.5 Waiver

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

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

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

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

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

11.6 No third-party beneficiaries

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

11.7 Survival

11.7.1 Termination of this Agreement:

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

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

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

11.8 Severability

If for any reason whatever any provision of this Agreement is or becomes invalid, illegal or unenforceable or is declared by any court of competent jurisdiction or any other instrumentality to be invalid, illegal or unenforceable, the validity, legality orenforceability of the remaining provisions shall not be affected in any manner, and the Parties will negotiate in good faith with a view to agreeing to one or more provisions which may be substituted for such invalid, unenforceable or illegal provisions, as nearly as is practicable to such invalid, illegal or unenforceable provision. Failure to agree upon any such provisions shall not be subject to dispute resolution under Clause 10.1 of this Agreement or otherwise.

11.9 Successors and assigns

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

11.10 Notices

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

11.11 Language

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

11.12 Authorised representatives

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

11.13 Original Document

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

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

THE COMMON SEAL OF CONCESSIONAIRE has been affixed pursuant to the resolution passed by the Board of Directors of the Concessionaire atits meeting held on the …… day of 20…… hereunto affixed in the presence of
……, Director, who has signed thesepresents in token thereof and ……, Company Secretary / Authorised Officer who has countersigned the same in token thereof :

SIGNED, SEALED AND DELIVERED
For and on behalf of SENIOR LENDERS by the
Lenders' Representative:
(Signature) (Name)
(Designation)
(Address) (Fax No.)
(e-mail address)

SIGNED, SEALED AND DELIVERED
For and on behalf of

ESCROW BANK by:

(Signature)
(Name)
(Designation)
(Address)
(Fax No.)
(e-mail address)

In the presence of:
1.

SIGNED, SEALED AND DELIVERED
For and on behalf of
BENGALURU SMART INFRASTRUCTURE LIMITED (B-SMILE) by:

(Signature)
(Name)
(Designation)
(Address)
(Fax No.)
(e-mail address)

2.

SCHEDULE –T

(See Clause 33.2.1)

PANEL OF CHARTERED ACCOUNTANTS

1 Panel of Chartered Accountants

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

2 Invitation for empanelment

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

(a) the firm should have conducted statutory audit of the annual accounts of at least one hundred companies registered under the Companies Act, 1956, of which at leastten should have been public sector undertakings;

(b) the firm should have at least 5 (five) practising Chartered Accountants on its rolls,each with a minimum experience of ten years in the profession;

(c) the firm or any of its partners should not have been disqualified or black-listed by the Comptroller and Auditor General of India or the Authority; and

(d) the firm should have an office in the State or in an adjacent State with at least 2 (two) practicing Chartered Accountants on its rolls in such State.

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

3 Evaluation and selection

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

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

4 Consultation with the Concessionaire

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

5 Mutually agreed panel

5.1 The Authority shall, after considering all relevant factors including the comments, if any, of the Concessionaire, finalise and constitute a panel of 10 (ten) firms which shall be deemed to be the mutually agreed Panel of Chartered Accountants.

5.2 After completion of every five years from the date of preparing the mutually agreed Panelof Chartered Accountants, or such earlier period as may be agreed between the Authority and the Concessionaire, a new panel shall be prepared in accordance with the provisions of this Schedule - T.

SCHEDULE –U

(See Clause38.4)

VESTING CERTIFICATE

The Superintending Engineer, Bengaluru Smart Infrastructure Limited (B-SMILE) (the **"Authority"**) refers to the Concession Agreement dated ……. (the **"Agreement"**) entered into between the Authority and ……. (the **"Concessionaire"**) for Project Tunnel Design and Construction of 3-Lane Underground Twin Tunnel Road from Hebbal Esteem Mall junction (Km. 0+000) to Silk Board KSRP Junction (Km.16+745) along with 3-lane/2-lane entry & exit ramps including operation and maintenance in Bengaluru City (North South Corridor) – on MODIFIED BOOT MODE. Package 1: Hebbal Esteem Mall junction (Km. 0+000) to Seshadri Road, Race Course Junction (Km 8.748).

The Authority hereby acknowledges compliance and fulfilment by the Concessionaire of the Divestment Requirements set forth in Clause 38.1 of the Agreement on the basis that upon issue of this Vesting Certificate, the Authority shall be deemed to have acquired, andall title and interest of the Concessionaire in or about the Project Tunnel shall be deemedto have vested unto the Authority, free from any encumbrances, charges and liens whatsoever.

1 Notwithstanding anything to the contrary contained hereinabove, it shall be a condition ofthis Vesting Certificate that nothing contained herein shall be construed or interpreted as waiving the obligation of the Concessionaire to rectify and remedy any defect or deficiencyin any of the Divestment Requirements and/or relieving the Concessionaire in any mannerof the same.

Signed this …….. day of ……., 20….....at Bengaluru.

AGREED, ACCEPTED AND SIGNED	SIGNED, SEALED AND DELIVERED
For and on behalf of	For and on behalf of
CONCESSIONAIRE by:	BENGALURU SMART INFRASTRUCTURE LIMITED (B-SMILE) by:
(Signature)	(Signature)
(Name)	(Name)
(Designation)	(Designation)
(Address)	(Address)

In the presence of:

1. 2.

SCHEDULE –V

(See Clause 40.3.1)

SUBSTITUTION AGREEMENT

THIS SUBSTITUTION AGREEMENT is entered into on this the ……. day of ……..

20….

AMONGST

1 Bengaluru Smart Infrastructure Limited (B-SMILE), represented by its Superintending Engineer and having its principal offices at 3rd Floor, # 30/1, Thimmaiah Road, Millers Tank Bund Area, Vasanthnagar, Bengaluru-560 052 (hereinafter referred to as the "Authority" whichexpression shall unless repugnant to the context or meaning thereof include its administrators, successors and assigns);

2 ……. LIMITED, a company incorporated under the provisions of the Companies Act, 2013 and having its registered office at ..... (hereinafter referred

to as the "**Concessionaire**" which expression shall unless repugnant to the context or meaning thereof include its successors and permitted assigns and substitutes);

3 ……..name and particulars of Lenders' Representative and having its registered office at ..... , acting for and on behalf of the Senior Lenders as

their duly authorised agent with regard to matters arising out of or in relation to this Agreement (hereinafter referred to as the "**Lenders' Representative**", which expression shall unless repugnant to the context or meaning thereof include its successors andsubstitutes);

WHEREAS:

The Authority has entered into a Concession Agreement dated …… with the Concessionaire (the "**Concession Agreement**") for Design and Construction of 3-Lane Underground Twin Tunnel Road from Hebbal Esteem Mall junction (Km. 0+000) to Silk Board KSRP Junction (Km.16+745) along with 3-lane/2-lane entry & exit ramps including operation and maintenance in Bengaluru City (North South Corridor) – on MODIFIED BOOT MODE. Package 1: Hebbal Esteem Mall junction (Km. 0+000) to Seshadri Road, Race Course Junction (Km 8.748) and a copy of whichis annexed hereto and marked as Annex-A to form part of this Agreement.

(A) Senior Lenders have agreed to finance the Project in accordance with the terms and conditions set forth in the Financing Agreements.

(B) Senior Lenders have requested the Authority to enter into this Substitution Agreement for

securing their interests through assignment, transfer and substitution of the Concession to a Nominated Company in accordance with the provisions of this Agreement and the Concession Agreement.

(C) In order to enable implementation of the Project, including its financing, construction, operation and maintenance, the Authority has agreed and undertaken to transfer and assignthe Concession to a Nominated Company in accordance with the terms and conditions setforth in this Agreement and the Concession Agreement.

NOW THEREFORE, in consideration of the foregoing and the respective covenants andagreements set forth in this Agreement, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound hereby, the Parties agree as follows:

1 DEFINITIONS AND INTERPRETATION

1.1 Definitions

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

"**Agreement**" means this Substitution Agreement and any amendment thereto made in accordance with the provisions contained in this Agreement.

"**Financial Default**" means the occurrence of a material breach of the terms and conditions ofthe

Financing Agreements or a continuous default in Debt Service by the Concessionaire for a minimum period of 3 (three) months;

"**Lenders' Representative**" means the person referred to as the Lenders' Representative in the foregoing Recitals;

"**Nominated Company**" means (i) a company selected by the Lenders' Representative and proposed to the Authority for substituting the Concessionaire in accordance with the provisions of the Substitution Agreement or (ii) wherever the Selected Bidder/ConsortiumMembers of the Concessionaire are sought to be substituted in accordance Clause 3A of this Agreement, the Concessionaire itself;

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

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

1.2 Interpretation

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

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

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

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

2 ASSIGNMENT

2.1 Assignment of rights and title

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

3 SUBSTITUTION OF THE CONCESSIONAIRE

3.1 Rights of substitution

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

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

3.2 Substitution upon occurrence of Financial Default

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

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

3.2.3 At any time after the Lenders' Representative has issued a Notice of Financial Default, it may by notice require the Authority to suspend all the rights of the Concessionaire and undertake the

operation and maintenance of the Project Tunnel in accordance with the provisions of Article 36 of the Concession Agreement, and upon receipt of such notice, theAuthority shall undertake Suspension under and in accordance with the provisions of the Concession Agreement. The aforesaid Suspension shall be revoked upon substitution of the Concessionaire by a Nominated Company, and in the event such substitution is not completed within 180 (one hundred and eighty) days from the date of such Suspension, theAuthority may terminate the Concession Agreement forthwith by issuing a Termination Notice in accordance with the provisions of the Concession Agreement; provided that upon written request from the Lenders' Representative and the Concessionaire, the Authority may extend the aforesaid period of 180 (one hundred and eighty) days by a period not exceeding 90 (ninety) days. For the avoidance of doubt, the Authority expressly agrees andundertakes to terminate the Concession Agreement forthwith, upon receipt of a written request from the Lenders' Representative at any time after 240 (two hundred and forty) days from the date of Suspension hereunder.

3.3 Substitution upon occurrence of Concessionaire Default

3.3.1 Upon occurrence of a Concessionaire Default, the Authority shall by a notice inform the Lenders' Representative of its intention to issue a Termination Notice and grant 15 (fifteen) days' time to the Lenders' Representative to make a representation, stating the intention to substitute the Concessionaire by a Nominated Company.

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

3.4 Procedure for substitution

3.4.1 The Authority and the Concessionaire hereby agree that on or after the date of Notice of Financial Default or the date of representation to the Authority under Clause 3.3.2, as the case may be, the Lenders' Representative may, without prejudice to any of the other rightsor remedies of the Senior Lenders, invite, negotiate and procure offers, either by private negotiations or public auction or tenders for the take over and transfer of the Project Tunnel including the Concession to the Nominated Company upon such Nominated Company's assumption of the liabilities and obligations of the Concessionaire towards theAuthority under the Concession Agreement and towards the Senior Lenders under the Financing Agreements.

3.4.2 To be eligible for substitution in place of the Concessionaire, the Nominated Company shall be required to fulfil the eligibility criteria that were laid down by the Authority for shortlisting the bidders for award of the Concession; provided that the Lenders' Representative may represent to the Authority that all or any of such criteria may be waivedin the interest of the Project, and if the Authority determines that such waiver shall not haveany material adverse effect on the Project, it may waive all or any of such eligibility criteria.

3.4.3 Upon selection of a Nominated Company, the Lenders' Representative shall request the Authority to:

(a) accede to transfer to the Nominated Company the right to construct, operate and maintain the Project Tunnel in accordance with the provisions of the ConcessionAgreement;

(b) endorse and transfer the Concession to the Nominated Company, on the same termsand conditions, for the residual Concession Period; and

(c) enter into a Substitution Agreement with the Lenders' Representative and the Nominated Company on the same terms as are contained in this Agreement.

3.4.4 If the Authority has any objection to the transfer of Concession in favour of the Nominated Company in accordance with this Agreement, it shall within 15 (fifteen) days from the dateof proposal made by the Lenders' Representative, give a reasoned order after hearing the Lenders'

Representative. If no such objection is raised by the Authority, the Nominated Company shall be deemed to have been accepted. The Authority thereupon shall transfer and endorse the Concession within 15 (fifteen) days of its acceptance/deemed acceptance of the Nominated Company; provided that in the event of such objection by the Authority, the Lenders' Representative may propose another Nominated Company whereupon the procedure set forth in this Clause 3.4 shall be followed for substitution of such NominatedCompany in place of the Concessionaire.

3.5 Selection to be binding

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

3A. PROCEDURE FOR HARMONIOUS SUBSTITUTION OF CONCESSIONAIRE

For the purpose of the harmonious substitution as detailed herein, an event of "Financial Default" as defined shall be deemed to include situations where the Authority and / or theSenior Lenders have reasons to apprehend, in their considered opinion, that the Concessionaire is likely to face financial distress and is likely to default in the complianceof the terms of the Concession. For the purpose of the harmonious substitution as detailedherein, the term "Nominated Company" shall mean, wherever the Selected Bidder/Consortium Members of the project SPVs/ are sought to be substituted, the currentSPV company itself.

Parties therefore agree to the following: -

3A.1. Provisions pertaining to substitution of the Concessionaire by the Lenders Representative are contained in Article 40.3 read with the Substitution Agreement set forth in Schedule- V and Article 3.1.1 of the Substitution Agreement in particular Article 3.2 and Article 3.3 of the Substitution Agreement provide for substitution in the event of Financial Default and Concessionaire's Default respectively. It is further clarified that Right of Substitution by the Lender's Representative can be exercised in situations other that those illustrated inClause 3.2 and Clause 3.3 of the Substitution Agreement. In cases of harmonious substitution as envisaged herein, the provisions contained in Article 3.4 of the SubstitutionAgreement shall be applicable, and in addition the procedure laid down hereunder shall beapplicable.

a. The Concessionaire shall make a written representation to the Lender's Representative witha copy to the Authority requesting the Lender's Representative to seek approval of the Authority for Substitution. Upon receiving the said request, the Lender's Representative shall make its own assessment regarding the said request and upon being satisfied that it will be in the interest of the Project that the Substitution be effected, Lender's Representative in consultation with the Concessionaire would invite, negotiate and procureoffers either by private negotiations or public auction or tenders, for the said Substitution as defined herein.

b. Selection of the substitute (company or the Selected bidder/ Consortium Members of suchproject SPV) and the valuation of the Equity of the Concessionaire would be determined by the Concessionaire and Lenders.

c. Upon receiving the proposal of the Lender's Representative, the Authority shall satisfy itself about the credentials of the Nominated Company or of the substitute to the Selectedbidder/Consortium Members of such projects and accord its concurrence regarding such substitution considering the following.

   i. In the event that COD has been achieved, the substituting entity should have adequate experience of operating and maintaining completed road projects by itself or throughits associates/subsidiaries.

ii. In the event that COD is yet to be achieved, the substituting entity should have the requisite financial and technical qualifications to bid for a project of at least the samesize.

Thereafter, (where the substitution entity is a new company), the nominated company willform an SPV for taking over the project along with all the rights and obligations of the concessionaire under the Concession Agreement.

d. While concurring with the said proposal of the Lender's Representative, Authority, in its sole discretion, may levy an appropriate penalty not exceeding 1% (one per cent) of the Total Project Cost keeping in view the nature and extent of default as per the procedure tobe prescribed for the purpose by the Authority. Provided that no penalty shall be levied onthe Concessionaire for non-fulfilment of its obligations where the responsibility for delay in execution or completion for the project is on account of non-fulfilment or delay in fulfillment of the obligations of the Authority, namely, land acquisition, environmental clearances, other statutory/regulatory approvals/ clearances, as the case may be. The Authority shall cure such defaults before the signing of substitution agreement.

e. Subsequent to such substitution, the Concessionaire shall ensure compliance to the Article 5.3 and Article 7.1 (k) read with the definition of "Change in Ownership" under Article 48.

f. The Procedure prescribed under other Articles of the Concession Agreement and the Substitution Agreement, except to the extent of this harmonious substitution specified herein, shall be applicable.

g. The Authority shall stand fully discharged of any claims whatsoever, by the existing Concessionaire where the substitution entity is a new company.

h. Such substitution is permitted only once during the construction Period.

4 PROJECT AGREEMENTS

4.1 Substitution of Nominated Company in Project Agreements

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

5 TERMINATION OF CONCESSION AGREEMENT

5.1 Termination upon occurrence of Financial Default

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

5.2 Termination when no Nominated Company is selected

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

5.3 Realisation of Debt Due

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

6 DURATION OF THE AGREEMENT

6.1 Duration of the Agreement

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

(a) Termination of the Agreement; or

(b) no sum remains to be advanced, or is outstanding to the Senior Lenders, under the Financing Agreements.

7 INDEMNITY

7.1 General indemnity

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

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

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

7.2 Notice and contest of claims

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

8 DISPUTE RESOLUTION

8.1 Dispute resolution

8.1.1 The Parties may refer the dispute to the MD, B-SMILE for meditation. In case the Parties are not satisfied with the same, or a resolution is not reached, the dispute may be referred to the Chairman of B-SMILE.

8.1.2 [Deleted]

9 MISCELLANEOUS PROVISIONS

9.1 Governing law and jurisdiction

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

9.2 Waiver of sovereign immunity

The Authority unconditionally and irrevocably:

(a) agrees that the execution, delivery and performance by it of this Agreementconstitute commercial acts done and performed for commercial purpose;

(b) agrees that, should any proceedings be brought against it or its assets, property or

revenues in any jurisdiction in relation to this Agreement or any transactioncontemplated by this Agreement, no immunity (whether by reason of sovereignty or otherwise) from such proceedings shall be claimed by or on behalf of the Authority with respect to its assets;

(c) waives any right of immunity which it or its assets, property or revenues now has,may acquire in the future or which may be attributed to it in any jurisdiction; and

(d) consents generally in respect of the enforcement of any judgement or award againstit in any such proceedings to the giving of any relief or the issue of any process in any jurisdiction in connection with such proceedings (including the making, enforcement or execution against it or in respect of any assets, property or revenues whatsoever irrespective of their use or intended use of any order or judgement thatmay be made or given in connection therewith).

9.3 Priority of agreements

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

9.4 Alteration of terms

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

9.5 Waiver

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

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

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

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

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

9.6 No third-party beneficiaries

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

9.7 Survival

9.7.1 Termination of this Agreement:

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

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

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

9.8 Severability

If for any reason whatever any provision of this Agreement is or becomes invalid, illegal or unenforceable or is declared by any court of competent jurisdiction or any other instrumentality to be invalid, illegal or unenforceable, the validity, legality orenforceability of the remaining provisions shall not be affected in any manner, and the Parties will negotiate in good faith with a view to agreeing to one or more provisions which may be substituted for such invalid,

unenforceable or illegal provisions, as nearly as is practicable to such invalid, illegal or unenforceable provision. Failure to agree upon any such provisions shall not be subject to dispute resolution under Clause 8 of this Agreementor otherwise.

9.9 Successors and assigns

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

9.10 Notices

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

9.11 Language

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

9.12 Authorised representatives

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

9.13 Original Document

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

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

THE COMMON SEAL OF CONCESSIONAIRE has been affixed pursuant to the resolution passed by the Board of Directors of the Concessionaire atits meeting held on the …… day of 20…… hereunto affixed in the presence of

……, Director, who has signed thesepresents in token thereof and ……, Company Secretary / Authorised Officer who has countersigned the same in token thereof :

SIGNED, SEALEDAND DELIVERED

For and on behalf of BENGALURU SMART INFRASTRUCTURE LIMITED (B-SMILE) by:

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

(e-mail address)

SIGNED, SEALED AND DELIVERED

For and on behalf of

SENIOR LENDERS by the Lenders' Representative:

(Signature)

(Name)

(Designation)

(Address)

(Fax)

(e-mail address)

In the presence of:

1. 2.

SCHEDULE –W

Procedure for Dispute Resolution Board

[Deleted]

Schedule X

Schedule for outstanding debt

Quarter end*	Outstanding debt**
1	100.00%
2	100.00%
3	99.53%
4	99.05%
5	98.56%
6	98.05%
7	97.53%
8	97.00%
9	96.46%
10	95.90%
11	95.33%
12	94.74%
13	94.14%
14	93.52%
15	92.89%
16	92.24%
17	91.58%
18	90.90%
19	90.20%
20	89.49%
21	88.76%
22	88.01%
23	87.31%
24	86.59%
25	85.85%
26	85.09%
27	84.31%
28	83.51%
29	82.69%
30	81.85%
31	80.99%
32	80.11%
33	79.21%
34	78.29%
35	77.34%
36	76.37%
37	75.37%
38	74.35%
39	73.30%
40	72.23%
41	71.13%
42	70.00%
43	68.75%
44	67.47%
45	66.15%
46	64.80%
47	63.42%
48	62.00%
49	60.55%
50	59.06%
51	57.53%
52	55.97%

Quarter end*	Outstanding debt**
53	54.37%
54	52.73%
55	51.05%
56	49.32%
57	47.55%
58	45.74%
59	43.88%
60	41.97%
61	40.02%
62	38.02%
63	36.53%
64	35.01%
65	33.45%
66	31.85%
67	30.21%
68	28.53%
69	26.80%
70	25.03%
71	23.22%
72	21.36%
73	19.46%
74	17.51%
76	15.51%
77	13.46%
78	11.36%
79	9.21%
80	7.00%
81	4.74%
82	2.42%

* Quarter end date shall start from the initial date set forth for the Scheduled Tunnel Project Tunnel Date in Schedule G.

** Outstanding debt shall be calculated as under:

(i) Debt shall be calculated by disaggregating Total Project Cost as per this Agreement considering the debt-equity ratio as per disaggregation notified by the Concessionaire within a period of 60 (sixty) days from Project Completion Date. In the event such disaggregation is not notified to the Authority, the debt-equity ratio shall be considered asnotified at the time of the Financial Close. This Schedule shall be applicable separately fordebt provided by Senior Lenders and Subordinated Debt provided by lenders.

(ii) Principal amount of debt outstanding shall be the product of debt as per para (i) aboveand percentage of outstanding debt on the quarter end immediately preceding one year prior to the Transfer Date or the Transfer Date, as applicable.

[Footnote 1: The above Schedule is in respect of Concession Period of 30 years and above. It is clarified that the above percentages of repayment are indicative and can be modified in a block of 5 years to ensure that the debt service coverage ratio does not fall below 1.00 in any year. Further, in case the Concession Period is less than 30 years, this Schedule shall be modified taking into consideration the Construction Period, moratorium period of two quarters and tail period of one year]

& To be deleted in case Grant is not envisaged

Schedule Y

FORMAT FOR INTIMATION FINANCIAL CLOSURE

(To be filled by Concessionaire and submitted at the time of Financial Closure)

1. Details of the Project:

S. No.	Particulars	Details
A.	Project Description	
B.	Type of Project	
C.	Location/ State	
D.	Length of Project (KMs)	
E.	Total Project Cost assessed byB-SMILE (Rs. In cr.)	
F.	Total Project Cost assessed by Lenders (Rs. In Cr.)	
G.	Concession Period	
H.	Date of Signing of CA	
I.	Likely Appointed Date	
J.	Construction Period	
K.	Financing Structure (Rs. In Cr.) Source of Funding under differentheads	
L.	Scheduled Completion Date	

2. Details of Total Project Cost:

S. No.	Particulars	Amount (Rs. Crore)
1.		
2.		

3. Financing Pattern:

S. No.	Particulars	Amount (Rs. Crore)
1.	Equity	
2.	Debt	
3.	Construction Support	
4.	Others (please specify)	

4. Name of the Senior Lenders

S. No.	Name of the Bankers/Fls/NBFCs	Amount (Rs. Crore)
1.		
2.		
3.		

5. Financing details

S. No.	Name of the Bankers/Fls/NBFCs	Details
1.	Rate of Interest during Construction	
2.	Rate of Interest during Operations	
3.	Average DSCR	
4.	Minimum DSCR	
5.	Project IRR	
6.	Equity IRR	
7.		

6. Amortization Schedule:

7. Sanction Letter containing the terms and conditions of the Facility sanctioned by the Senior Lenders