

**PRE-BID QUERY
& REPLY
(PART-II)**

PRE BID MEETING HELD ON DATED: 11.01.2022

Tender No: K-RIDE/BSRP/08/2021, DATED:23.11.2021

Name of the Work: "DESIGN AND CONSTRUCTION OF ELEVATED VIADUCT OF LENGTH 8.027 Km (CH: -0.675 Km to -0.050 Km & CH: 11.137 Km to 18.350 Km) INCLUDING RAMPS AND FORMATION IN EMBANKMENTS /CUTTINGS INCLUDING BLANKETING, MAJOR BRIDGES, MINOR BRIDGES, RUB, ROB, ROR, RETAINING WALL, SACRIFICIAL RETAINING WALL AND DRAINS, UTILITY DIVERSIONS OF AT-GRADE SECTION OF LENGTH 17.551 Km (CH: -0.964 Km to CH:-0.675 Km, CH: -0.050 Km to CH: 11.137 Km & CH: 18.350 Km to 24.425 Km) AND OTHER RELATED INFRASTRUCTURAL WORKS FROM BENNIGANAHALLI TO CHIKKABANAVARA, EXCLUDING STATION BUILDINGS, OF CORRIDOR - 2 OF BENGALURU SUBURBAN RAILWAY PROJECT (BSRP)".

Replies to the Queries raised by prospective bidders including Pre-bid meeting discussions held on dated: 11.01.2022

(PART-II, Replies for remaining queries)

Running SI No:	Reference as per Tender Document	Tenderer's Query	Reply/Clarifications by K-RIDE
270	8A: Part 2-Employers/Works Requirements & Appendixes (Scope of work) Annexure- I Clause 4.7 Transmission lines crossing the Right of Way	Kindly provide the transmission line levels and minimum vertical clearance required from BSRP Tracks.	Please refer Schedule of Dimension (draft) attached in tender document at Item no 1.8 of Chapter 1- General.
287	Section No 11 (KRIDE-BSRP-C2-TD-GAD-0101)Tender drawings	There is a Proposed RUB at CH:-472.34 (1x10.50x5.50 RCC BOX) in alignment; but the same is not provided in the scope (Section 8A: Part-1 & Annexure-1, Cl.4.2 Minor Bridges). Please clarify.	The proposed box at -472.34Km is not in the scope at present.
289	Section No 11 (KRIDE-BSRP-C2-TD-GAD-0101)Tender drawings	Existing ROR No. 533 at CH:205550 (6 x 6.10 PSC Slab) is proposed to be extended as per alignment. But the same is not provided in scope (Section 8A: Part-1 & Annexure-1, Cl.4.2 Minor Bridges). Please clarify.	It is not in the scope of work. The viaduct is traversing at this location.
290	Section No 11 (KRIDE-BSRP-C2-TD-GAD-0101)Tender drawings	There is a Bridge at CH:- 350.00 proposed to be extended as 1 x 2.0m RCC Box. But the same is not provided in scope (Section 8A: Part-1 & Annexure-1, Cl.4.2 Minor Bridges). Please clarify.	It is not in the scope of work. The viaduct is traversing at this location.
291	Section No 11 (KRIDE-BSRP-C2-TD-GAD-0103)Tender drawings	Please clarify whether the existing Bridge No. 574 at CH:217665.73 (IR) is to be extended to corridor-2. The same is not provided in scope (Section 8A: Part-1 & Annexure-1, Cl.4.2 Minor Bridges)	It is not in the scope of work. The viaduct is traversing at this location.
327	Technical	Drawing No KRIDE/BSRP/C2/TD/MNB/04/01 - 07 - IR Cha 210/350 - BSRP Cha 4.722 - Exg Bridge No 541 C - Wall Thickness (G) = 1.35m. Please check and confirm	Corrected.
328	Technical	Drawing No KRIDE/BSRP/C2/TD/MNB/04/03 - 02 - IR Cha 10/782 - BSRP Cha 21.800 - Exg Bridge No 406 DN - Wall Thickness (G) = 1.35m. Please check and confirm.	Corrected.
344	Approved DBR for viaduct vertical train live load Clause 5.4. page no. 114	DBR and ER are contradictory. Employer Requirement refers to MBG loading (25T) for bridges.	Elevated viaduct is designed for 17 MT loading and at grade section, Minor bridges, major bridges and RUB's are to be designed for 25 MT loading.
345	Employer's Requirement 1.1 Section C Clause 30, page no: 284	This contradicts the stipulation in DBR. pls confirm which is to be adopted.	
348	Employer's Requirement 1.1 Section A Clause 70, page no:273	Grade of steel specified is different in Page 262 and 273. E 250 or E 450 Grade? Pl confirm.	The grade of Open Web Girder (OWG) is weldable material as per IS 2062, quality B0 fully killed and normalised (E250 (Fe 410 W, Killed)) and this will as per latest Railway requirement.
354	Geo-Technical Investigation Details of Corridor-2 for Bangalore Sub urban Railway ProjectGeo-Technical investigation Details of Corridor-2 for BSRP page no: 1	Bore log details missing from BSRP Ch 9+250 to Ch 11+250	The borehole details and geo-technical investigation reports are attached in the tender document. The tenderer has to assess further for the required details.
391	GAD drawingsKRIDE / BSRP / C2 / TD / Sp.S / 08 / 01, KRIDE / BSRP / C2 / TD / EV / T.1 / 14 / 01 to KRIDE / BSRP / C2 / TD / PS / T-2 / 14 / 06, KRIDE / BSRP / C2 / TD / CSG / 15 / 01, KRIDE / BSRP / C2 / TD / CSB / 18 / 01 to KRIDE / BSRP / C2 / TD / CSB / 18 / 02, KRIDE / BSRP / C2 / TD / MJB / 23 / 01	Please clarify any Alternative options for super structure types are allowed? An alternative option may be as per RDSO standards or a separate design. Please confirm.	The superstructures for railway crossing is with PSC U girders/ I Girder with slab/ composite steel girder with slab/ open web steel girder. The superstructure type at station is with PSC I Girder and slab. In obligatory spans composite steel girder with slab. The contractor may propose alternative super structure cross section of stations. However, the decision of K-RIDE is final. The cable stay bridges/suspension bridge option is deleted. For ROB 410A, the spans are 35m and 27m approximately with PSC box girder or steel I girder with slab shall be used. For ROB 408B the spans are 30m approximately with PSC box girder or steel I girder with slab (composite steel I girder) shall be used. The decision of Employer is final as per the Railway requirement. The PSC U-Girder is only choice. other option of segmental box girder etc., is permitted only as an exceptional with the approval of K-RIDE. Further details are in tender document.
453	Section 8A, Employer's Requirement, Breif Scope-(p) Pg.No.260(p) The single-track structures for corridor-2 and Portal structure for Corridor-2 and corridor-1 up to ramp are included at Yeshvanthpur. The super structure is for corridor-2 only.	Please provide dimensional drawings Plan & Cross sections of Corridor-2 & Corridor-1 at IR Ch: 6/000 to 6/800 and BSRP Ch: 17+000 to 17+800	The tentative span arrangement and alignment is shown in GAD, levels are also mentioned in L-Section drawings. The superstructure is with I girder and slab, composite steel girder and slab, open web girder and U-girder. The design and construction of portals and piers and superstructure will be in the scope of successful Bidder.
455	Solar Panel Section 8A, Employer's Requirement, 1, 1.1.B.(57) Pg.No.269(57) On the parapets of viaducts, solar panels are planned to be fixed. The designer shall take into account in their design & all fixtures required to mount the panels shall be fixed by the contractor at his own cost. The bidder is supposed to provide 20mm finished dia holes with PVC liner (IS code) through the parapet thickness at a longitudinal spacing of 50 cm c/c in two layers of 60 cm apart (vertically). The loading of 50 Kg / m shall be considered on both the parapets while designing for bidding purpose.	Please provide dimensional drawings of Solar Panel.	Please refer the tender drawing. Further details are to be assessed by the Tenderer.

399

398

(PART-II, Replies for remaining queries)

Running Sl No:	Reference as per Tender Document	Tenderer's Query	Reply/Clarifications by K-RIDE
513	Tender Document & Page No. 495 Section 8A: Part-2 - Employers requirement - General Information & Scope of Work APPENDICES 7. DRAFTING AND CAD STANDARDS 3.19 ERP, OSO and 3D BIM Platform The Contractor shall utilise a PMIS integrating with BIM software such that all documents generated by the Contractor can be transmitted to the Engineer by electronic means (and vice versa) and that all documents generated by either party are electronically captured at the point of origin and can be reproduced later, electronically and in hard copy. A similar link shall also be provided between the Engineer office at site and the Employer's Office by the Contractor.	Since the project duration is only 27 months, the requirement of 3D BIM & PMIS can't be used as the implementation including training of PMC/Client itself will require 6 months duration. So, the Contractor request the Client to remove/delete this "MORTH/NHA" Tender clause which is usually used in Road Bridge Project..	The present tender condition prevails.
534	General	Kindly include the legends in alignment drawings.	Corrected.
540	GENERAL INFORMATION & SCOPE OF WORK Brief Scope SECTION 8A: PART-1: WORKS/EMPLOYER'S REQUIREMENTS B. EARTHWORK IN EMBANKMENT AND CUTTING INCLUDING RETAINING WALL AND DRAINS: 33) Providing and laying of filter media consisting of granular materials of GW, GP, SW groups as per IS 1498-1970 in required profile behind boulder filling of abutments, wing walls / return walls etc., above bed level with all labour and material complete job as per drawing and technical specification of RDSO	The specifications referred in this clause is applicable for Back Filling and not for Filter Media as per Specification of RDSO. Kindly clarify	It is clarified as below. Providing and laying backfill material behind boulder filling of abutments, wing walls, return walls consisting of granular materials of GW, GP, SW groups as per IS 1498-1970 in required profile .
541	GENERAL INFORMATION & SCOPE OF WORK Brief Scope SECTION 8A: PART-1 WORKS/EMPLOYER'S REQUIREMENTS SC. MINOR BRIDGES, MAJOR BRIDGES, RUB, ROB AND ROR: 25) Providing and laying of filter media consisting of granular materials of GW, GP, SW groups as per IS 1498-1970 in required profile behind boulder filling of abutments, wing walls / return walls etc., above bed level with all labour and material complete job as per drawing and technical specification of RDSO	The specifications referred in this clause is applicable for Back Filling and not for Filter Media as per Specification of RDSO. Kindly clarify	It is clarified as below. Providing and laying backfill material behind boulder filling of abutments, wing walls, return walls consisting of granular materials of GW, GP, SW groups as per IS 1498-1970 in required profile .
542	GENERAL INFORMATION & SCOPE OF WORK Brief Scope SECTION 8A: PART-1 WORKS/EMPLOYER'S REQUIREMENTS D. MISCELLANEOUS: INCLUDING ROADS, BARRICADING, QUALITY, INTERFACE WORK, CASTING YARD, SITE OFFICE AND EQUIPMENT'S, PERSONAL ETC., 68) Providing and laying of filter media consisting of granular materials of GW, GP, SW groups as per IS 1498-1970 in required profile behind boulder filling of abutments, wing walls / return walls etc., above bed level with all labour and material complete job as per drawing and technical specification of RDSO	The specifications referred in this clause is applicable for Back Filling and not for Filter Media as per Specification of RDSO. Kindly clarify	It is clarified as below. Providing and laying backfill material behind boulder filling of abutments, wing walls, return walls consisting of granular materials of GW, GP, SW groups as per IS 1498-1970 in required profile .
544	Tender Document & Page No. 368 Section 8A: Part-2 - Employers requirement - General Information & Scope of Work "Civil Contractor shall implement BIM system for executing and delivering the services set out in this Agreement. Building Information Modelling (BIM) uses computing power and systems to create 3D models of all kind of buildings and infrastructure, with information about its design, operation and current condition..."	Usually stations buildings requires the use of 3D BIM for clash analysis. Since the this contract is for linear infrastructure and does not involve station buildings, request the Employer to delete the implementation of 3D BIM for linear infrastructure part.	The present tender condition prevails.
545	Tender Document & Page No. 495 Section 8A: Part-2 - Employers requirement - General Information & Scope of Work and Section 8A: Part-2 section 10A APPENDICES 7. DRAFTING AND CAD STANDARDS 3.19 ERP, OSO and 3D BIM Platform The Contractor shall utilise a PMIS integrating with BIM software such that all documents generated by the Contractor can be transmitted to the Engineer by electronic means (and vice versa) and that all documents generated by either party are electronically captured at the point of origin and can be reproduced later, electronically and in hard copy. A similar link shall also be provided between the Engineer office at site and the Employer's Office by the Contractor.	Request the Employer to confirm that the contractor can chose any of the BIM documentation software, listed under clause Section 8A: Part-2 section 10A	BIM Execution plan shall be provided by GC/K-RIDE to the successful tenderer. The contractor is not free to use the software. The civil contractor shall implement BIM system for executing and delivering the services set out in this agreement. The BIM program used by the tenderer should provide Files in IFC formats for inter operability between different programs. Further details are in clause 8 of section 8A of page no 368.
577	General for all Box Widening structures	Some of the BSRP line is close to EX. IR main line. Construction of Box for the new track is to be designed for 25 T loading. Kindly confirm for the existing box is done for 25 T loading. Since new track load is getting partially transferred to the existing running bridge.	The contractor has to check each bridge case to case basis.
605	GTI reports 5.2 Computation 99 For Uplift Capacity of piles 0.5 times of friction capacity has been adopted and FOS of 3.0 has been applied. Pile weight also has not been considered.	As per IRC: 78-2014 uplift capacity is only 0.7 times of friction capacity, FOS is 2.5 and weight of pile also to be considered against uplift. Whether the uplift capacity can be done as per IRC: 78-2014 or the shown method only to be adopted?	The applicable IS codes/ standards as per prevailing practice must be referred. The details given in the GTI report are tentative and further details have to be assessed by tenderer. The detailed design and construction are in the scope of successful tenderer.
606	GTI reports 5.2 Computation 99 In Lateral Capacity calculation of pile deflection considered as 0.5mm.	As per IRC: 78-2014 deflection to be considered at scour/liquefaction (if any) or else at cut off level is 1% of pile diameter. Whether the IRC: 78-2014 deflection to be considered or only the method shown in GTI report to be adopted?	The applicable IS codes/ standards as per prevailing practice must be referred. The details given in the GTI report are tentative and further details have to be assessed by tenderer. The detailed design and construction are in the scope of successful tenderer.

397

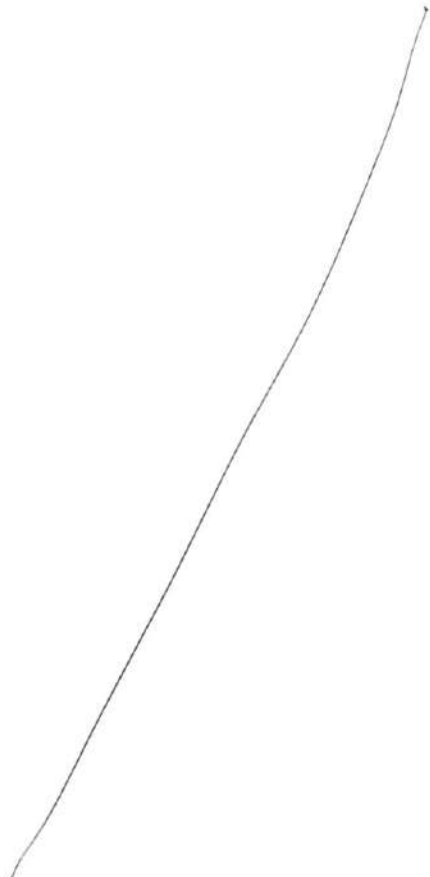
(PART-II, Replies for remaining queries)

Running SI No:	Reference as per Tender Document	Tenderer's Query	Reply/Clarifications by K-RIDE
607	GTI reports 5.2.8 Estimation of Rock Mass Rating & Net Safe Bearing Pressure 103 To calculate SBC in rock RMR method and Bearing pressure from core strength have been adopted.	Whether any other method as per IS : 12070 - 1987 can be adopted? In calculation of safe bearing pressure from the core strength correction factors as per IS: 12070 - 1987 have not been considered. Whether correction to be applied as per IS: 12070 - 1987 or the only shown method to be adopted?	The applicable IS codes/ standards as per prevailing practice must be referred. The details given in the GTI report are tentative and further details have to be assessed by tenderer. The detailed design and construction are in the scope of successful tenderer.
608	GTI reports 5.1 Design methodology - II. Bearing capacity 98 One SBC calculation method is given as "Calculations and Rules of Thumb (Second Edition)" for sand.	Which method to be adopted for SBC calculation for clay and silts? Whether IS: 6403 - 1981 and IS: 8009 (Part 1) - 1976 can be adopted?	The applicable IS codes/ standards as per prevailing practice must be referred. The details given in the GTI report are tentative and further details have to be assessed by tenderer. The detailed design and construction are in the scope of successful tenderer.
647		Do we have to Model the steel elements or NCC will provide the Tekla file or any other design files. If yes, then upto what LOD	The structural steel elements have to be modelled. BIM execution plan will be developed by GC and Contractor to implement the same.
649	c-2 tender document final.pdf Civil Contractor shall implement the necessary hardware, software and human resources towards this end. Page 368	Softwares and Hardware required for Client Do the client require software licenses, How many licenses. Do they require Revit/ Navisworks software licenses	BIM execution plan will be developed by GC and Contractor to implement the same. The software and hardware requirement will be procured by GC..
650		Trainings to Client Team Do we have to give any Training to Client team, if Yes, How many people, timeline and upto what details	No. GC will give the training.
651		What are the compliance for BIM Models with respect to PMIS platform. What are the functionalities of this platform. Please clarify	BIM execution plan will be developed by GC and Contractor to implement the same.
652	c-2 tender document final.pdf PROJECT MANAGEMENT INFORMATION SYSTEM (PMIS) The Contractor shall utilise a PMIS integrating with BIM software such that all documents generated by the Contractor can be transmitted to the Engineer by electronic means (and vice versa) and that all documents generated by either party are electronically captured at the point of origin and can be reproduced later, electronically and in hard copy. Page 309	What will be Excelize Role in utilizing PMIS platform, is it for coordination of 3D Models, 4D, 5D,.... Is this for only document Management?	BIM execution plan will be developed by GC and Contractor to implement the same. The tender condition prevails. 3D model only.
653		Which platform is used in PMIS -Autodesk, Bnetley,.... Please clarify	BIM execution plan will be developed by GC and Contractor to implement the same. The software and hardware requirement will be procured by GC.
654	c-2 tender document final.pdf Page 368	In which software to integrate/coordinate the .ifc file as this would be common to all stakeholders Please clarify	BIM execution plan will be developed by GC and Contractor to implement the same. The software and hardware requirement will be procured by GC.
655	c-2 tender document final.pdf Page 368	What is expected with respect to Rail alignment Model. Is the 2D profile alignment drawings expected here.	The present tender condition prevails. Please refer clause 8, page no 368 of section 8A.
657	c-2 tender document final.pdf Civil Contractor shall implement the necessary hardware, software and human resources towards this end. Page 368	Are the Onsite resource required, how many and what is the Timeline expected	BIM execution plan will be developed by GC and Contractor to implement the same. The software and hardware requirement will be procured by GC.
658	c-2 tender document final.pdf 3D Coordination between all disciplines shall be achieved by incorporating them in a single model. Page 368	Who will be the main coordinator for BIM files coordination	BIM execution plan will be developed by GC and Contractor to implement the same. GC will be main coordinator.
659	c-2 tender document final.pdf The Contractor shall provide all tools, equipment, manuals and training necessary for the Employer / Engineer to maintain and re-configure all the software provided under the Contract. Page 384	Software Support: What is the requirement from BIM consultant here	BIM execution plan will be developed by GC and Contractor to implement the same.
665		From which Project stage we have to start Modelling, Priliminary, Design	The Priliminary stage.
666		Is 4D/5D in scope of work? If Yes, which software	Only 3D models of all kinds of Infrastructure.
667		Is there any specific attributes to be added to Model elements Please clarify	The present tender condition prevails.
668		Do we have to export only As Built drawings from 3D Models and not the GFC Please clarify	GFC and As built drawings.
713	Tender Document & Page No. 269 Section 8A: Part-1 - Employers requirement - General Information & Scope of Work 1.1 Scope of the Work: A. Viaduct Work: 57 - On the parapets of viaducts, solar panels are planned to be fixed.	Whether the approval for providing Solar Panel on the Rail Viaduct Parapets from IR has obtained? Also, please provide the angular orientation schematic diagram for Solar Panel fixing for reference and for doing proper design/pricing.	Please refer the tender drawing. Further details are to be assessed by the Tenderer. The tender condition prevails.
724	Tender Document & Page No. 309 Section 8A: Part-1 - Employers requirement - General Information & Scope of Work ix. PROJECT MANAGEMENT INFORMATION SYSTEM (PMIS) The Contractor shall utilise a PMIS integrating with BIM software such that all documents generated by the Contractor can be transmitted to the Engineer by electronic means (and vice versa) and that all documents generated by either party are electronically captured at the point of origin and can be reproduced later, electronically and in hard copy. A similar link shall also be provided between the Engineer office at site and the Employer's Office by the Contractor.	As the specified BIM requirement is without any particular specification, it would be difficult to price this item Request to Specific Software to be used & LOD also be mentioned structure-wise.	Please refer the tender document and clause 8 of section 8A, at page no 368.
725	Tender Document & Page No. 364 Section 8A: Part-1 - Employers requirement - General Information & Scope of Work Appendix 7: The Contractor shall utilise a PMIS integrating with BIM software such that all documents generated by the Contractor can be transmitted to the Engineer by electronic means (and vice versa) and that all documents generated by either party are electronically captured at the point of origin and can be reproduced later, electronically and in hard copy. A similar link shall also be provided between the Engineer office at site and the Employer's Office by the Contractor.	PMIS & BIM shall be separated, as the combining the both will make the deign submissions delayed multifold and very harmful to the project.	The tender condition prevails.

396

(PART-II, Replies for remaining queries)

Running Sl No:	Reference as per Tender Document	Tenderer's Query	Reply/Clarifications by K-RIDE
726	Tender Document & Page No. 364 Section 8A: Part-1 - Employers requirement - General Information & Scope of Work Appendix 7: IFC format (Industry foundation Classes) IFC list format is a platform neutral format. Hence all/any BIM program used by tenderer should provide files in IFC format for interoperability between different BIM programs.	IFC formats cannot properly transfer all the details of an 3D Model from one type of Software to other. Please mention the Particular Software which Client is planning to use for proper costing.	The tender condition prevails.
727	Tender Document & Page No. 368 Section 8A: Part-1 - Employers requirement - General Information & Scope of Work Appendix 7: i) Civil Contractor shall implement BIM system for executing and delivering the services set out in this Agreement. Building Information Modelling (BIM) uses computing power and systems to create 3D models of all kind of buildings and infrastructure, ...	8. Implementation of BIM System - (i) As this project is comprised of only Linear Structure, the specifications given under this clause cannot be adopted without enormous Time & Resources. In-line with the duration for the total project, the Contractor request to delete these specifications.	The tender condition prevails.
729	Tender Document & Page No. 368 Section 8A: Part-1 - Employers requirement - General Information & Scope of Work Appendix 7: (v) The contractor shall develop as built" BIM Model up to LOD 500 level and submit the same to Employer at the time of completion of the project. Schedule of BIM implementation Plan and standards to be adhered to, shall be provided after award of contract..	BIM Model up to LOD 500 is an humungous task for this Linear Type Project and cant be done within the project duration of 27 Months. The Contractor request to reduce the BIM Level of Development to LOD 300 only.	BIM will be done to LOD 350 on a platform to be developed by GC.
730	Tender Document & Page No. 383 Section 8A: Part-2 - Employers requirement - General Information & Scope of Work 10.A Digital Delivery Software Packages	Please specify the Softwares to be used for developing 3D BIM Models, as only the Manufacturer/Brand Names only specified. This will create lot of unevenness in pricing between the bidding contractors.	BIM excution plan will be developed by GC and Contractor to implement the same. The software and hardware requirement will be procured by GC.
731	Tender Document & Page No. 383 Section 8A: Part-2 - Employers requirement - General Information & Scope of Work 10.B Software Support Software Packages	Please specify the Name of the Softwares, Numbers & Specifications to be supplied by the Contractor to the Client & their Engineer to do proper costing.	BIM excution plan will be developed by GC and Contractor to implement the same. The software and hardware requirement will be procured by GC.
82 & 325	Drawings RIDE / BSRP / C2 / TD / LOGH / ST / 09 / 02 connecting bridge FOB	Connecting bridge details will required for design of substructure of station pier Kindly provide the Foot Over Bridge Actual Scope Station wise with Ramp Length details & Width	Please refer the GAD drawing at Annexure PB-1. The Lottgollahalli station loaction has been shifted away from the corridor-1 station. The connecting bridge proposal is deleted.



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GM/Corridor 2

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GM/S and T

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GM/Finance