ANNEXURE III

SPECIAL CONDITIONS AND TECHNICAL SPECIFICATIONS FOR ROB AS PER RAILWAY

The Contractor shall be responsible under the Contract of "Design & Construction of 6-Lane Road Over Bridge (ROB) Including Approaches at Rawanfond, Margao" as under:

1. Based on approved Tender GAD, preparation of detailed design, drawings as per IRS codes/IRS manual/RDSO specifications and get it approved from proof checked Consultants as per Railway Authority Standard Procedure.
2. Based on approved design and drawings by Railway Authority, procured Material including structural steel from Railways approved main source
3. Fabrication of Steel Girders of ROB as per Railway norms and through RDSO approved fabricators/ Vendors in the approved workshops.
4. Contractor shall carry out fabrication at the workshop equipped with CNC, Robotic Automatic 3D Cutting Facility, Arc Welding Machine, Metallization, Sand blasting facility etc. complete. It is mandatory that fabrication firm shall be RDSO approved or the fabrication firm suggested and approved by Railway and GSIDC and shall have experience in fabrication of railway structures
5. Fabricated material shall be transported to site only after approval of trial run in the workshop by the Railway officials.
6. A separate launching scheme shall be prepared and get it approve from Railway Authority including Utility mapping on ROB under footpath as shown in the tender GAD.
7. Execution of ROB shall be done only in the presence of Railway Authority to ensure safety, Quality and all temporary indicators compliance Railway manual procedures for signaling/telecommunications during allotted Mega Block etc.
8. Compliance of all RDSO/ IRS manual /Railway standard Specification and procedures.
9. Structural steel painting shall be done as per RDSO specifications.

SPECIAL CONDITIONS FOR ROB WORK

1. It is primary responsibility of the contractor to obtain all necessary permissions etc. from all concerned authorities such as GSIDC, Revenue

Department, Traffic Police, etc. However, Railway may provide necessary help for obtaining the permission. Contractor is not entitled for any compensations such as idling of machinery, staff etc. on account of any delay in work for getting these permissions.

2. The proposed bridge site is close to existing operational Railway lines on Electrified section. Contractor has to take all necessary care to not make any infringement to running Railway traffic.
3. In the section, other works are in progress, Contractor has to co-ordinate with those agencies for executing the work smoothly, without disturbing the work of other agencies.
4. All High Strength Friction Grip (HSFG) fasteners shall be tightened with calibrated Torque Wrench only. Required torque applied shall be as per manufacturer of HSFG fasteners or designer guidelines. All HSFG bolts shall be provided with Direct Tension Indicators type of washers (DTI Washers). Please refer "Guidelines for use of High Strength Friction Grip (HSFG) bolts on bridges on Indian Railways" [Report no BS-111(Revision1)] of Research Design and Standards Organization, Lucknow**.**
5. The work of assembling of girder at site on temporary staging including tightening of HSFG bolts, launching & erection of girder shall also be supervised by RDSO approved girder fabricator.
6. As the proposed work is over running electrified passenger's railway lines, launching scheme for steel girders shall require sanction of Commissioner of Railway Safety (CRS) as a statutory requirement. The contractor shall develop and design launching scheme to the satisfaction of Railway & CRS. It may require modifying number of times till the approval of CRS. Contractor shall make all necessary changes in the launching scheme as advised by Concerned Railway officials and CRS till their satisfaction about safety of Railway passengers during the executing of work. Contractor shall also develop power point presentation on steel girder launching scheme and make presentation to various authorities including CRS. for Assembling and launching of Steel girder is inclusive of development of launching scheme with detailed drawings for approval of Railway and Commissioner of Railway Safety, Central Circle, Mumbai.
7. Precautions while working in the vicinity of track:

a) When the work is required to be done along or near the existing Railway track the contractor/s shall take such steps as are necessary for the safety of the

track and labour working at site. He/they will also be required to program his/their working so as not to interfere with the movement of trains. In this regard, contractor will not take up the track work on running lines without the presence of authorized representative of Railway. No extra payment shall be allowed for these precautions and also for crossing track/tracks, if required during the execution of the work. It should be ensured that the ballast of the track (s) is not spoiled or mixed with earth.

b) In addition to the precaution by the contractor/s for the safety of the track and labour, it may necessary to post flagman in same locations as an additional safety measure, for which the cost shall be recoverable from the contractor/s on the basis of the expenditure incurred by the railways enhanced by 12½% department charges. The contractor/s shall be fully responsible for any damage to or trespass caused by his/their men to any surrounding structure, Railways bear no liability whatsoever on this account.

c) Training to Supervisors and Operators of Contractor.

8. The Supervisors and Operators of the Contractor proposed to be deployed at work site, which is close to the running track, shall be imparted mandatory training by the Railway about the safety measures to be adopted while working in the vicinity of running track. Engineer-in charge of the work shall decide the scale, extent & adequacy of training. In case training is imparted at a recognized Rly training institute, the charges for the same, as decided by Rly, shall be recovered from contractor. A competency certificate to this effect to the individual Supervisor/Operator shall be issued as given below, by a Railway Officer not below the rank of Assistant level. No Supervisor/Operator of the Contractor shall work or allowed to work in the vicinity of running track who is not in possession of valid competency certificate.

9. Competency Certificate Certified that Shri_____Supervisor/Operator of M/s._____has been trained and examined in safety measures to be followed while working in the vicinity of running Railway track for the work_____. His knowledge has been found satisfactory and he is capable of supervising the work safely. This certificate is valid only for the work mentioned in this certificate only.

Signature and designation of the officer

10. Traffic and Power block will be taken by Railway officials only if contractor has make all arrangement at site as per agreed launching scheme at least 3 hours prior to block time.

11. All structural steel shall conform to Grade 'B0' specification. (Correction slip no. 5 dated 30.08.2013 to Fabrication Specification IRS-B-1 -2001).

12. Note for Assembling, Erection & Launching of Steel Girder: -

a) All welds are to be made by approved welder using approved welding procedures.

b) The rates are deemed to include cost of rivets, drifts, HSFG bolts & nuts riveting/welding etc.

c) Any temporary arrangement, strengthening of member(s) if required in connection with launching of girders shall be at contractor's cost including restoring it back as per original standard drawing.

d) On completion of work the contractor shall clear all temporary staging and other arrangements, obstruction and restore it to its original position

e) Contractor's has to ensure proper camber as per drawing, irrespective of launching scheme

f) The rates are deemed to include all labour, tools, plants, equipment, machinery, cranes etc. all leads, lifts, fuel electric charges etc. complete for all materials unless specified otherwise.

g) All butt welds are to be examined radio graphically.

h) All other welds may be examined by radiographic or any other nondestructive methods which are equally effective. All the welds shall also be examined by liquid penetrating flaw detection method or by magnetic particle flaw detection method as per IS 3658 and IS 37063

i) Detailed launching scheme along with design of formwork and staging should be got done from a reputed design consultant having past experience of similar type of work and to be submitted to the Railway for approval and nothing extra will be paid on this account.