SECTION 8A

EMPLOYER'S REQUIREMENT – GENERAL INFORMATION AND SCOPE OF WORK

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Section 8A

WORKS/EMPLOYER'S REQUIREMENTS

GENERAL INFORMATION & SCOPE OF WORK

Brief Scope

NAME OF WORK:

"Yeshwanthpur - Channasandra Doubling Project - Linking of BG track between Yeshwanthpur and Baiyyappanahalli "A" panel, including Yeshwanthpur, Lottegollahalli & Banaswadi Yards, (excluding Hebbal Yard to Banaswadi) and Misc. works in Bangalore Division of South Western Railway"

&

"Baiyyappanahalli - Hosur Doubling Project - Linking of BG Track with Allied Works and Manufacturing, Supply & Stacking of Machine-Crushed Track Ballast conforming to RDSO Specification (IRS-GE-1) from Km 197/900 to Km 205/500 between Belandur Road (Excl.) and Baiyyappanahalli "A" Cabin (Incl.) in Bengaluru Division of South Western Railway"

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EMPLOYERS REQURIEMENT - SCOPE OF WORK

1. OBJECTIVE

The proposed work is part of the, Track Doubling Work between Yeshwanthpur - Channasandra & Baiyyappanahalli - Hosur Doubling Project. It is proposed to execute the Linking of BG track between Yeshwanthpur and Baiyyappanahalli "A" panel, including Yeshwanthpur, Lottegollahalli & Banaswadi Yards, (excluding Hebbal Yard to Banaswadi) and Linking of BG Track with Allied Works and Manufacturing, Supply & Stacking of Machine-Crushed Track Ballast conforming to RDSO Specification (IRS-GE-1) from Km 197/900 to Km 205/500 between Belandur Road (Excl.) and Baiyyappanahalli "A" Cabin (Incl.) misc. works which comes under the jurisdiction of BENGALURU DIVISION OF SOUTH WESTERN RAILWAY.

2. RELEVANT DOCUMENTS

The Engineer shall issue drawings to the Contractor for the execution of works in accordance with the agreed terms and conditions of the Contract Agreement.

The following Documents shall be referred in conjunction with each other by the Contractor for construction work as these are mutually complimentary to each other:

a) Drawings issued by the Engineer.
b) Employer's Requirements as part of Contract
c) Technical Specifications and explanatory notes to the BOQ, as part of Contract
d) Bill of Quantities as part of Contract
e) Indian and International Standards referenced therein.
f) The schedules and any other documents forming part of the Contract.

The Contractor shall always seek advice from the Engineer in the event of conflicts among above cited documents. In case of conflict, the Engineer's decision shall be final and binding.

3. GENERAL

The project site is located in and around Bengaluru City. The proposed work is associated with Track Doubling Work between Yeshwanthpur - Channasandra and between Belandur Road (Excl.) and Baiyyappanahalli "A" Cabin (Incl.) Doubling Project.

The scope of work comprises transportation of rails, sleepers, points & crossings, and SEJs, along with execution of track slewing, cut and connection of tracks, machine tamping, ballast boxing, supply of ballast and other allied activities as part of the doubling project between Yeshwanthpur and Channasandra.

Bidders should inspect the alignment before submission of bid and assess the scope and its associated work. It is the responsibility of the contactor to thoroughly examine the site of work and all constraints before submitting the bid(s).

i. Before carrying out the work at site, necessary permissions from various local agencies / Railway authorities / road authorities such as SWR, BBMP, BESCOM, PWD, GAIL, Traffic Police etc., shall be required to be obtained by the contractor. The Employer shall assist only by way of issue of necessary support letters.

ii. Any services affected by the works must be temporarily supported by the contractor. The work of temporarily supporting and protecting the public utility, services during execution of the works shall be deemed to be part of the contract.

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iii. The contractor shall take all precautions for safeguarding the environment during the course of the construction of the works. He shall abide by all laws, rules and regulations in force governing pollution and environmental protection that are applicable in the area where the works are situated. The contractor must take all necessary steps to fix specially dust nuisance during the construction of the works.

iv. The levels, measurements and other information concerning the existing site as shown on the drawings are believed to be correct, but the contractor should verify them for himself and also examine the nature of the ground as no claim or allowance whatsoever will be entertained on account of any error or omission in the levels or strata turning out different during execution from what is shown on the drawings.

v. **DELETED**

vi. The preliminary works such as site clearance, barricading, trail trenching etc., wherever required, shall be taken up simultaneously along with mobilization activities.

vii. **DELETED**

viii. The contractor shall at all-time carryout the work on either side of existing IR tracks/ highway/road/service road in a manner creating least interference to the flow of traffic. The contractor shall take prior approval of the Engineer and traffic police regarding traffic arrangements and diversion of traffic during construction.

ix. All temporary traffic diversion works, which will be required for the smooth flow of running traffic in order to carry out the works without any interruption including all safety precautions, signage, barricading, emergency lighting, traffic marshals, look-out men / watchmen etc.; shall be carried out. The permanent traffic diversions shall be carried out in consultation with traffic police. Contractor has to provide traffic diversion proposals, traffic marshals, cones, traffic diversion boards etc., as desired by Traffic Police.

x. **DELETED**

xi. **DELETED**

xii. **DELETED**

xiii. Restoration of Road and allied works immediately after completion of work up to road level or as per instructions of Engineer.

xiv. **DELETED**

xv. **DELETED**

xvi. **DELETED**

xvii. **DELETED**

xviii. The CONSTRUCTION PROGRAMME AND PROJECT MONITORING is to be given as mentioned in General Conditions of Contract.

xix. **DELETED**

xx. Maintaining and keeping the Existing Railway banks, structures and adjacent roads clean in the area of work and

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where construction machineries ply.

xxi. Measures to minimize water, air and noise pollution;

xxii. All aspects of quality assurance, including testing of materials and other components of the work, as specified and as directed by the Engineer-in-charge

xxiii. **DELETED**

xxiv. Clearing of site and handing over of all the Works, as specified or as directed

xxv. Maintenance of the completed Work during the maintenance period as directed;

xxvi. Submission of completion (i.e., 'As-Built') drawings and other related documents as specified; and

xxvii. The contractor shall not display any name-board for the works without the written permission of the engineer.

xxviii. No labour camp shall be allowed at work site or any unauthorized place.

4. OBTAINING CLEARANCES/CERTIFICATES FROM AUTHORITIES

The contractor shall arrange well in advance stage wise as may be required, submission of all the required documents and drawings for approval from other authorities and installation of the works and their inspection and obtain approval/completion certificates with respect to his work as required for use and connection of the utilities and occupation from the Statutory Authorities. The Contractor shall obtain and deliver to the Engineer, on completion of the works, the final Inspection Report and approval from the Authorities.

5. INTER COMMUNICATION FACILITIES

Telephone and fax services are available at Bengaluru. Should the Contractor wish to use Radio communication on the site, the Employer will recommend to the appropriate authority the application for allocation of radio frequencies to the Contractor on his own expenses for Instruments and License fees etc.,

6. SITE INFORMATION-

The project site is located in and around Bengaluru City. Bengaluru is well connected to other parts of the country by Road, Rail and Air. It has an international Airport.

7. RESTRICTIONS IN WORKING

It has to be noted by the Bidder that,

a. The various items of construction work have to be carried out in narrow roads / streets of Bengaluru city/Beside/across/Parallel to the existing railway line where there are buildings adjacent to the road/track and railway traffic may be heavy.

b. There are restrictions for movement of Trucks and Heavy Vehicles (ex: Trailers) carrying construction materials, cleaning during the day hours on some roads.

c. There are some one-way roads where traffic can't move in both directions.

d. Generally, at least two lanes of traffic in both directions have to be kept while the works are on, including foundation works.

e. Execution of works will have to be planned in such a manner that they do not obstruct or interfere with the existing roads; railways tracks and other utilities.

f. Where work is required to be carried out at locations adjacent to such Existing IR tracks, roads, utilities, structures, monuments, religious structures, etc., suitable safety and protection arrangements will have to be ensured. Nothing extra will be payable on these accounts. It should also be ensured that no damage is caused to any such element and Engineer/ Employer shall be indemnified against such damage at no extra cost.

8. GENERAL CLIMATIC CONDITIONS

Bengaluru is located in meridians of 12° N latitude and 77°3' E Longitude, spread over an area of 531 sqm km. located at an altitude of 900m, Bengaluru boasts of delightful weather around the year registering maximum temperature of 34° centigrade in summer and minimum temperature of 14° centigrade in winter. Bengaluru receives both the Southwest and Northeast Monsoons, getting an annual average rainfall of 760 mm, generally during the months of May to September/October. Bengaluru falls in Seismic Zone II

9. WORK CONTENT

9.1 Brief Scope

"Yeshwanthpur - Channasandra Doubling Project - Linking of BG track between Yeshwanthpur and Baiyyappanahalli "A" panel, including Yeshwanthpur, Lottegollahalli & Banaswadi Yards (excluding Hebbal Yard to Banaswadi) and Misc. works in Bangalore Division of South Western Railway"

&

" Baiyyappanahalli - Hosur Doubling Project - Linking of BG Track with Allied Works and Manufacturing, Supply & Stacking of Machine-Crushed Track Ballast conforming to RDSO Specification (IRS-GE-1) from Km 197/900 to Km 205/500 between Belandur Road (Excl.) and Baiyyappanahalli "A" Cabin (Incl.) in Bengaluru Division of South Western Railway"

which comes under the jurisdiction of BENGALURU DIVISION OF SOUTH WESTERN RAILWAY.

Works to be performed shall also include all general works and works of any kind necessary for the due and satisfactory construction, completion and maintenance of the works to the intent and meaning of the drawings adopted and technical specifications, to best Engineering standards and orders that may be issued by the Engineer from time to time, compliance by the agency with all as per Contract document.

i. Supply of all materials ,apparatus, Plant, equipment, tools, fuel, water, transport, Offices, Stores, Workshop, Staff, labour and the provision of proper and sufficient protective works, diversion, temporary fencing, lighting and watching required for the safety of the public and protection of works on adjoining land; first-aid equipment, accommodation and sanitation for the staff and workmen, effecting and maintenance of all insurances, the payment of all wages, salaries, provident fund, fees, royalties, duties or the other charges arising out of the erection of works and the regular clearance of rubbish, clearing up, leaving the site perfect and tidy on completion.

ii. The work to be executed and maintained as per approved estimate, Technical Specification, relevant Codes, and specifications of Indian Railways, Research Designs and Standards

Organization, IS, CPWD, KPWD, BESCOM, BBMP drawings, best engineering practices and/or as directed by the Engineer-in-charge.

9.2 The Scope of Civil & Structural works - DELETED

9.3 Civil Formation- DELETED

9.4 Special stipulations/features

Civil Work – DELETED

9.4.6 **Power & Traffic Block**

(i) Track occupation may be granted at any time during day or night to suit convenience of traffic operations and will ordinarily be granted over a distance covered by one or two consecutive block sections. Work trains will normally be allowed to take advantage of block shadows. Normally the total duration of block on any section will generally be of 1.5 to 2.5 hours at a stretch in a day, once or more than once. Block provided may be utilized for one or more work trains or track Lorries or ladder trolleys, etc., to suit convenience of work.

(ii) Blocks will not ordinarily be given for laying the feeders except where crossing of track is involved, which will have to be laid manually in general.

(iii) Any traffic / power blocks, temporary speed restrictions and caution orders required in connection with execution of works by the contractor, shall be got sanctioned from the Railway authorities well in advance, through the Engineer. The Railways may sanction the same for specific sites within the overall recovery time available in the Railway time table. The contractor shall have to schedule his program according to the convenience of the Railways. No claim from the contractor for any delay / inconvenience / loss on this account shall be entertained by the Employer / Engineer.

(iv) The contractor shall undertake the work involving Railway track, Railway Electrification installations in co-ordination with the Engineer and Railways in accordance with the program of work. Where traffic / power blocks are involved, the Contractor shall ensure that interruption to Railway operations, if any, is kept to the bare minimum level.

(v) In order to minimize blocking of the track for work/material trains, the contractor shall consider the working conditions on the section and assess use of alternative method of construction on a part or whole of the work. He should submit clear proposal along with financial implication if any to the purchaser for such special method of saving of blocks that could be obtained along with reduction / redundancy of the facilities being provided by the Railway / K RIDE.

(vi) The protection required for block working i.e., flagmen, flags etc. shall be provided by the contractor. Competency for the above shall, however, be given by the Railway authority. Protection of track by banner flags etc. shall be done in accordance with General Rules of Indian Railway and Subsidiary Rules of the concerned zonal Railway where work is being carried out. Contractor shall provide Safety helmet, Safety belt and Safety Shoes to their staff while working at site.

(vii) In case of theft/breakdown, the contractor shall restore the traffic in minimum possible time. Failure to do so shall attract suitable penalty.

9.4.7 **Provisional Acceptance**

i) Immediately after completion of works/such part of works, the Contractor shall certify and advise the Engineer in writing that the works are (i) complete (ii) ready for satisfactory commercial service and (iii) ready to be handed over. He will also place at the disposal of the Engineer the required staff for checking it and putting it into operation.

ii) The test or tests as stipulated in approved Technical Specifications shall be carried out jointly by the Railway / Engineer and the contractor within a month after the receipt of the Contractor's notification as stated in sub-Para above.

iii) The provisions contained in the relevant GCC clause shall be followed for taking over of the installations.

9.4.8 Use of Rejected/Sub Standard Items/ Equipment

In the event of such rejection as aforesaid, the Engineer shall, without prejudice to his other rights and remedies and in particular without prejudice to his rights under the clause just preceding, be entitled to the use of the rejected/substandard equipment/item for a time reasonably sufficient to enable him to obtain other replacement. During such period, if the rejected/substandard equipment/item is used commercially the Contractor shall not be entitled to the payment on energization until such rejected equipment is rectified and/or replaced, but the Engineer shall not be entitled to claim any damages arising out of rejected/ substandard equipment/item in respect of such period.

9.4.9 Guarantee

(i) The Contractor shall guarantee satisfactory working of the installations erected by him, for a period of 12 (Twelve) months from the date of commercial operation or from the date of Provisional Acceptance by the Engineer whichever is earlier. The guarantee for spares (if any) should be coincident with the guarantee for erected equipment. The provisions contained in the relevant GCC clause shall be followed for rectification of defects.

(ii) During the defect liability period the Contractor shall keep available an experienced engineer and necessary equipment to attend to any defective installations resulting from defective erection and / or defects in the equipment supplied by the Contractor. The Contractor shall bear the cost of all modifications, additions or substitutions that may be considered necessary due to faulty materials, design or workmanship for the satisfactory working of the equipment. The final decision shall rest with the Engineer/Employer.

(iii) During the defect liability period the Contractor shall be liable for the replacement at site of any parts which may be found defective in the equipment whether such equipment be of his own manufacture or those of his sub-contractor whether arising from faulty design, materials, workmanship or negligence in any manner on the part of the Contractor provided always that such defective parts as are not repairable at site are promptly returned to the contractor if so required by him at his (Contractor's) own expenses. In case of type defects in Contractor's equipment and components detected during guarantee period, Contractor should replace all such items irrespective of the fact whether all such items have failed or not. The contractor shall bear the cost of repairs carried out on his behalf by the Engineer at site. In such a case, the Contractor shall be informed about the works proposed to be carried out by the Engineer/Employer.

(iv) If it becomes necessary for the Contractor to replace or renew any defective portion of the equipment under the Para aforesaid then the provision of the said Para shall also apply to the portions of the equipment so replaced or renewed until the expiration of six months from the date of such replacement or renewal or until the end of the above-mentioned period whichever is later. Such extension shall not apply in case of defects of a minor nature, the decision of the Engineer or his nominee being final in the matter. If any defect be not remedied within a reasonable time during the aforesaid period, the Engineer may proceed to do work at the Contractor's risk and expense, but without prejudice to any other rights and remedies which the Engineer may have against the Contractor in respect of such defects or faults.

(v) The repaired or renewed parts shall be delivered and erected on site free of charge to the satisfaction of Engineer/Employer.

9.4.10 **Accountably and disposal of released materials**

(i) The Contractor shall liaison with the Engineer to finalize the procedure for taking over of the whole or part of the section and for disposal of the released materials.

(ii) All released materials shall be handed over to concerned Depot / Store and payment of transportation for handing over of materials to Depot / Store shall be borne by the contractor. Acknowledgement from Depot / Store for the same shall be submitted to Engineer/Employer.

(iii) The material released on account of modifications/alterations shall be accounted by the contractor in the presence of the Depot / Store /Engineer/Employer Representative, except for the material permitted to be re-used by the Engineer.

(iv) If there are any shortages during final reconciliation, their cost will be recovered by the Purchaser from the Contractor at the prices inclusive of all charges as specified in note below: -

If any shortfall of material is noticed at the time of completion of the work, the contractor shall be liable to pay for the shortfall as per book rate or the last purchase rate or the prevailing market rate, whichever is higher, plus 2% on account of incidental charges together with supervision charges at 12.5% of the total cost inclusive of material freight and incidental charges.

9.5 Codes and specifications

The works shall be carried out as per Standard Specifications of Research design and Standard Organization, Indian Railways/South Western Railway, which can be obtained on payment. Wherever reference is made in the Contract to specific standards and codes to be met by the goods and materials to be furnished and work performed or tested the provisions of the latest current edition or revision of the relevant standards and codes in effect shall apply, unless otherwise expressly stated in the Contract. Where such standards and codes are national or relate to a particular country or region, other authoritative standards which ensure an equal or higher quality than the standards and codes specified will be accepted subject to the Engineer's prior review and written approval. Differences between the standards specified and the proposed alternative standards must be fully described in writing by the Contractor and submitted to the Engineer at least 14 days prior to the date when the Contractor desires the Engineer's approval. In the event the Engineer determines that such proposed deviations do not ensure equal or higher quality, the Contractor shall comply with the standards specified in the documents.

All goods and materials to be incorporated in the goods be new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials unless provided for otherwise in the contract.

(a) The Standard Specifications of Indian Railways/South Western Railway/K RIDE and the list of codes and manuals given in the annexure thereof shall be prime governing.
(b) Where there is conflict between provisions in IRS & IS specifications, provisions in IRS specifications shall prevail.
(c) Where there is no provision of specifications in IRS, provisions in IS specifications should be adopted. Where there are no provisions in IRS and IS Specifications, provisions should be followed.
(d) For items not covered in IRS/IS specifications, BS-5400 Part 1 to 10 may also be considered.
(e) The decision of Engineer shall be final and binding in the interpretation of the clause of the codes of practice and specifications of this tender and no claim whatsoever shall be entertained on this account from the Contractor.

9.6 **Survey and fixing working benchmarks and alignment markers - DELETED.**

9.7 **Bench marks**

9.7.1 All along the length of the proposed double line benchmarks have been set up by the Employer at intervals of about a kilometer. The details of these benchmarks along with their reduced levels have been marked on the design drawings indicating the plan and 'L' section which form a part of the tender. The contractor along with the Engineer should verify the details of these benchmarks in the first instance, soon after taking possession of the site. If any mistakes are detected in these details of these benchmarks the same should be indicated to the Engineer. The mistakes detected should be corrected in consultation with the Engineer. These corrections should be approved by the Engineer before starting any other work.

9.7.2 The contractor shall then in presence of the Engineer establish working benchmarks at short intervals, adequately connecting them to the reference benchmarks set up by the Employer in the Project length. The working benchmark levels should be approved from the Engineer. An up-to-date record of all bench marks including approved corrections if any, shall be maintained by the contractor and also the Engineer.

9.7.3 All levels taken for making out the longitudinal section and cross section should be related only to these working bench marks.

9.7.4 While doing the above-mentioned work, the fact that similar work will have to be done once again on the completed earth work in formation for fixing up the longitudinal levels of the installed P. Way should be kept in view.

9.8 **Alignment**

9.8.1 All along the length of the proposed double line at an interval of about half a kilometer, alignment reference pillars have been set up the Employer; in addition, five reference pillars have been erected for each of the curves to indicate the start & end of the overall length of the curve and its circular portion and apex, by the Employer. In the design drawings showing the plan and 'L' section, which forms part of the tender, the co-ordinates for these pillars have also been given. This has been done to facilitate setting of the alignment of the proposed line. The contractor along with the Engineer should verify the details of these alignment pillars, soon after taking possession of the site. If any mistakes are detected in these details, the same should be indicated to the Engineer before starting any other work. These detected mistakes should be corrected by the Contractor in consultation with the Engineer. These corrections should be approved by the Engineer.

9.8.2 The contractor shall then, in the presence of the Engineer, establish working alignment reference markers at shorter intervals, adequately connecting them to the reference pillars set up by the Employer in the Project length. The location of these subsidiary alignment markers should be got approved from the Engineer. An up-to-date record of all alignment pillars, and corrections, if any done, shall be maintained by the contractor and also the Engineer.

9.8.3 The alignment for the double line should be related only to these working benchmarks.

9.8.4 While doing the above-mentioned work, the fact that similar work will have to be done once again on the completed earth work in formation for fixing up the alignment of the installed P. Way should be kept in view.

9.8.5 After the formation has been constructed, the center line of track both in Block Sections and Yards should be re-fixed taking guidance from already set up alignment references. Similarly, the rail levels of track both in the block sections and the yards should also be fixed with reference markers. These will be used for installation of track.

9.9 **Responsibility for establishing and maintaining working benchmarks and alignment markers**

9.9.1 The Engineer, when necessary, will provide the contractor with the data necessary for setting out of the centerline. All dimensions and levels shown on the drawing or mentioned in the documents forming part of or issued under the contract shall be verified by the contractor on the site; he shall immediately inform the Engineer of any apparent errors or discrepancies noticed in such dimensions or levels. In consultation with the Engineer, the noticed mistakes should be corrected. These corrections should have the approval of the Engineer.

9.9.2 The contractor will be entirely responsible for accurate setting out of the works and safeguarding all survey monuments, benchmarks, alignment references etc. The work of setting out shall be deemed to be a part of the general works preparatory to the execution of work and no separate payment shall be made for the same.

9.9.3 The above-mentioned points have been repeated in the respective sections dealing with specifications for different works for laying emphasis on these items.

9.9.4 The contractor will be entirely responsible for accurate setting out of the works and safeguarding all survey monuments, benchmarks, alignment references etc. The work of setting out shall be deemed to be a part of the general works preparatory to the execution of work and no separate payment shall be made for the same.

9.10 Issue of materials by Employer

9.10.1 The issue of materials from the Employer to contractor shall be governed by the following change.

9.10.2 The rails and other materials to be issued by the Employer to the Contractor will be handed over at any convenient location within Railway Land in the contract section. The contractor should collect the same from these locations and transport them to the work site as found necessary. He shall use only mechanical means for handling of rails during all stages of work to avoid any damage to the rails. Leading will be paid separately as per relevant item of BOQ.

9.11 Interfacing and Integrations of Works

9.11.1 As a part of provision of this tendered work, Track linking works and any other associated works are to be executed by the successful tenderer. In the proposed project area, many other agencies are also working. The interfacing for the purpose of integration of works between the electrical, Signal or other agencies or between the Contractor and his sub-contractors, (if permitted) will arise. This has to be kept in view.

9.11.2 Land is available throughout the section for carrying out the works. However, if additional land is required in yards/mid-section, necessary arrangements will be made for acquiring the land without affecting the progress of work.

9.11.3 The contractor shall take full responsibility in terms of organizing, managing, coordinating and administrating the interfacing of all components of works including all issues related to and arising out of such tasks and responsibility. The contractor shall interface with all concerned authorities and other contractors as required to complete the work satisfactorily within the stipulated period.

9.11.4 Under consideration and application of the above clause, the contractor shall and has also the obligation to liaise with the other contractors and Authorities to obtain all necessary technical information, all necessary information concerning organization of works, coordinating the works etc. which are necessary to assess, mitigate, take care of contractual obligations, risks, liabilities and whatsoever arising out of interfacing, engineering issues, organization of the works etc. The employer/engineer shall not be held liable in any way, throughout the preparation of the offer and/or execution of the works and/or maintenance period and/or defects liability period for any omissions, misunderstanding, negligence etc. arising out of interfacing, coordinating, organizing etc. of the works. The employer will not entertain any claim arising out of misunderstanding, miscommunication, omission, withholding of necessary/required information or whatsoever between the

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concerned contractors/Authorities concerning interfacing, organizing etc. of works. In case of any claim arising from any of the contractors, as aforesaid, referring to interfacing and/or interfacing related issues; the Employer will hold the concerned contractors liable for not taking care of their contractual obligation concerning interfacing, organizing, co-ordination etc. of the related works.

9.11.5 Needless to say, that commissioning of this double line project requires close coordination among various agencies executing the works in this section, Engineer, Employer and the Railway authorities. The contractor shall therefore plan all his works requiring interfacing, like works in mid-section, station yards, with other agencies, meticulously, in consultation and coordination with all concerned parties, in advance, for expeditious execution, without causing any delay either to his works or those of others.

9.11.6 If, in the opinion of Engineer, any delay in execution of any part of the Project requiring interfacing is attributable to the failures of the contractor to take adequate steps for smooth execution of such works, then the Engineer shall have the right to take necessary steps to organize and streamline such works, including excluding the requisite portion of work from the scope of the Contractor and getting the same executed by other agencies, at the risk and cost of the contractor.

10. DAMAGE TO PROPERTY

The contractor shall organize all his activities so as not to cause any damage to the property of Railway or that of other agencies or any third party. In spite of taking all precautions, in the unfortunate event of any damage to the property, then the contractor shall not only indemnify the Employer of the claims made by the affected parties but also settle the matters with the affected parties as per law. If the nature of damage is one of that affecting the train movements or causing a safety hazard to the public, then the situation will be treated as an emergency and the Engineer reserves the right to take all necessary steps as deemed necessary to restore train operations or to remove the hazardous situation or to mitigate the damage, at the risk and cost of the contractor.

All power requirements for execution of works shall be arranged by the Contractor from his own resources. Subject to availability of power, the Employer/Engineer will recommend to the Railway Authorities for providing power connection. The Contractor shall bear the cost of installation and payment of necessary charges for providing such power connections as per the Terms and Conditions of the Railway.

10.1 Survey Equipment

The contractor should provide the survey equipment and other accessories as per the instructions of Engineer as and when required. He should also provide all necessary help as required by the Engineer for checking the works, whenever required.

10.2 All power requirements for execution of works shall be arranged by the Contractor from his own resources. Subject to availability of power, the Employer/Engineer will recommend to the Railway Authorities for providing power connection. The Contractor shall bear the cost of installation and payment of necessary charges for providing such power connections as per the Terms and Conditions of the Railway.

10.3 Structural elements, shape and form - DELETED.

10.4 Stability of the elements - DELETED.

10.5 Stability of the Structure - DELETED

10.6 Temporary Works

Traffic barricade with reflective tapes and other necessary traffic signages should be provided wherever required so that safety is ensured during day and night continuously. Temporary traffic diversion for smooth flow of traffic during construction including necessary traffic signs, repairs to the diverted route/service lanes, if required, restoration of diverted route to original condition etc. shall be done by contractor at his cost. Contractor shall also provide any temporary support for the utilities (charted or uncharted), wherever required, at no extra cost to Employer. The above listed works are only brief but the actual scope of work shall be as specified in the concerned document and/or as specified or directed by the Engineer.

10.7 Design for Temporary Works

The Design should cover all the items pertaining to all temporary works, traffic diversion scheme, launching scheme for RCC pole / OH conductor stringing/ cable laying or transportation scheme for various structural elements and materials to be transported to and from site during construction period.

The Contractor shall himself formulate a practical and viable scheme for design/ fabrication of shuttering, casting, curing, testing and launching/erection of poles/ stringing of conductor/ cable laying and all other structures. The bidder should, along with the bid, specify the scheme that he proposes to adopt for carrying out all the works including fabrication, transportation, stacking and erection of steel structure and casting, curing, stressing, testing and erection of poles / stringing of conductor.

The contractor shall formulate the erection scheme in accordance with relevant provision of applicable standards and submit the same to the Engineer for approval with third party certificates. These works will be executed only after the approval has been obtained from Engineer.

11. DRAWINGS – DELETED

11.1 GFC Drawings: - DELETED

11.2 Meaning and intent of specifications and Drawings:

If any ambiguity arises as to the meaning and intent of any portion of the specifications and drawing or as to execution or quality of any work or material, or as to the measurement of the works, the decision of the Engineer thereon shall be final subject to the appeal (within 7 days of such decision being intimated to the Contractor) to Engineer/Employer who shall have the power to correct any errors, omissions, or discrepancies in the specifications, drawings, classifications of works or materials and whose decision in the matter in dispute or doubt shall be final and conclusive.

11.3 Responsibility for Specifications.

a) Specifications

RDSO/ CPWD, KPWD, BESCOM, BBMP specification / other Specifications / Codes viz. IS etc. shall be procured by the Contractor from the market. One set of these specifications shall always be kept at contractor's site office for reference. Standards guaranteeing a level of quality or performance equivalent or superior to those indicated will also be accepted. Reference to trademarks or other specific designations that is necessary to explain the nature of the products required means that any other product of equal or superior quality or performance is also acceptable, subject to prior approval of the ENGINEER to be obtained in writing for adopting the new standards which are not provided in the contract.

b) Drawings for Permanent Works: - DELETED

c) Design, Drawings and Specifications for Temporary/ Ancillary works. -

a) All Drawings shall be prepared on CAD using AUTO-CAD Version 2010 or Higher Plan, elevation and side view for proposed works.

d) Completion Drawings

On completion of the work in all respects the contractor shall submit the following

i. Five sets of "As Erected Drawings" in the standard sizes of A0, A1, A2, A3 or A4 Roll each containing complete set of drawings for every component of work on approved scale indicating the work "As Erected". Each set shall also contain technical literature.

ii. These drawings shall be prepared on CAD using Auto-Cad version (latest/as directed by Engineer) and shall be recorded on writable CDs and one set of these CDs shall also be submitted.

iii. The Contractor shall also submit one set of original "As Erected" drawings on polyester film or as directed by Engineer of quality as approved by Engineer/ Engineer's Representative.

The Certificate of Completion of Works as per the provisions in the General Conditions of Contract shall not be issued by the Engineer in the event of Contractor's failure to furnish aforesaid "As Erected" drawings for the entire works.

e) Plans and Drawings for Layout of Plant and Equipment - DELETED

12. TRAFFIC MANAGEMENT - DELETED

13. LIGHTING AND FIRE PREVENTION - DELETED

14. UTILITIES - DELETED

15. Damage to Utilities

The contractor shall be responsible for any theft, damage and / or protection of all the existing utilities within the site of work during currency of the Contract. In case of any theft/ damage occurring to these utilities while working or otherwise, the contractor shall immediately inform the Engineer's representative as well the utility owning agency and restore the same immediately to the entire satisfaction of the utility owning agency. Any damage due to working / negligence / fault of the Contractor (decision of Engineer in this regard shall be final and binding), the same shall be repaired. / Made good by the Contractor at his own cost. Any damage/ compensation / penalty etc. if charged by the utility owning agency in this regard shall also be payable by the Contractor and no claim in this regard shall be entertained by the Employer. The contractor shall always keep indemnifying the Engineer / Employer against this.

16. BARRICADING OF SITE AND WORK AREAS

The contractor shall provide temporary barricade during construction at site, work areas (i.e., construction Depot, Store, Site office, Casting yard etc.,)

17. INTERFACE WORKS

In addition, the Contractor shall be required to carry out various interface works as per interfacing requirements. Such as interfacing with various contracts of signaling & Telecommunication, traction power & power supply, track work, rolling stock etc.,

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18. RESPONSIBILITIES OF CONTRACTOR

The Contractor shall liaison with Railway officials, State/Central Government and local bodies till completion of works in all respect. It is the responsibility of the contractor to ensure proper liaison and co-ordination with Railway & State Authorities for availing line clearance, Traffic cum Power Blocks, joint inspection, etc., till completing / Commissioning / handing over the section. KRIDE intervention should not be sought for any of the above.

19. ROW issues if any shall be sorted out by the contractor.

19.1 DELETED

19.2 DELETED

19.3 DELETED

19.4 DELETED

19.5 DELETED

19.6 DELETED

19.7 **Safeguarding the environment**

19.8 **The contractor shall carry out expeditiously and without delay the following works.**

(1) Identify and get approved the sources of various P-way materials.
(2) Material testing of P-way material as contemplated in the specifications.
(3) Any other pre-requisite items required for final execution.
(4) Any other items specified in other sections of contract.

20. ASSOCIATED WORKS DEEMED INCLUDED IN ITEM RATES OF PERMANENT WORKS

21. Contractor's Organization and Plant & equipment Project Organization Plan

(1) The Contractor's Personnel shall be deployed & maintained in consultation with Engineer and as per the requirements. The Contractor's Superintendence shall be also properly deployed and maintained to carry out the construction activities as described in the relevant General Conditions of Contract (GCC) clause.

(2) The Contractor shall submit an updated Project Organization Plan which includes complete project organization chart during the Construction adding functions and personnel necessary to perform the Works during the Construction in accordance with the conditions of the Contract. This plan shall be updated and resubmitted whenever there are changes to the staff and / or the organizational structure.

The plan shall show the management structure and state clearly the duties, responsibilities, and authority of key staff members.

(3) The contractor shall deploy the key personnel of requisite qualification and experiences. In case Engineer instructs (in writing) the Contractor to remove a person of his work force stating the reasons, the Contractor shall ensure that the person leaves the Work Area within seven days and shall have no further connection with the Works in the Contract. The Engineer shall also seek prior consent of the Employer in this regard.

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(4) The minimum requirements for manpower are attached as **Appendix [Organization charts and key positions]** to the Employer's Requirement.

Plant and Equipment

a) The minimum Plant and equipment as shall be maintained in consultation with Engineer and as per the requirements.

b) The minimum requirements for plant & equipment are attached as **Appendix 5** [Plant and Equipment] to the Employer's Requirement.

22. PENALTY FOR NON-COMPLIANCE

Notwithstanding the provisions elsewhere in the bid documents, the Contractor shall be penalized as detailed below:

a) Correction of Defects

If the Engineer determines that any item or part of it was constructed with bad workmanship and / or using sub-standard construction materials,

Sl. No.	Nature of Defects	Penalty (Rs.)
1.	Not adhering safety guidelines as mentioned in the tender	10,000/- each case
2	Usage of non-approved / sub-standard materials	25,000/- each case

The above said penalty is envisaged to act as deterrent against bad workmanship and usage of sub- standard construction materials by the Contractor and shall be imposed for every occurrence. These penalties are non-refundable.

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23. Appendix 01

1. PROGRAMME REQUIREMENTS

1.1 General

1.1.1 Construction programme and project monitoring

a) The contractor shall propose and submit his detailed work plan separately and as per the procedure detailed in the scope of work. Contractor may be asked to schedule and complete the work block wise / area wise in a phased manner fixing priorities to different stretches of the work to give access to other interfacing contracts as mentioned in the Bid documents.

b) The tentative work plan shall be submitted within the period as specified in the Bid document for approval of the Engineer as 'Baseline Program'.

1. After the work has started, the Contractor shall deliver in the first week of every month to the Engineer an update of the works showing changes, if any, in planning or progress scheduling and reflecting the progress of all the activities of the network and the project status as at the end of previous month.

2. If the Contractor falls behind the approved work program plan by more than one month, he shall, within fourteen days of the date of such information, submit for approval, a revision of the work plan showing the proposed measures, including augmentation of plant, labor, and material resources to complete the works on time.

3. Whenever the Contractor proposes to change work plan, he shall immediately advise the Engineer in writing and, if the Engineer considers the change a major one, the Contractor shall submit a revised program for approval.

4. DELETED

24. Appendix-02 DELETED

25. Appendix-03

Quality Assurance Materials

a. All the equipment, materials, fittings, and components will be subject to quality control programme of the manufacturer, being part of the quality Assurance programme of the Contractor. The materials may also be inspected by the Purchaser or his representative either at the manufacturer works or at the Contractor's depot. The Purchaser or his representative shall have the right to be present during all the stages of manufacture and shall be accorded free of charge all reasonable facilities for inspection and testing as well as to examine the stage inspection report of the manufacturer in addition to the quality audit which the Contractor may institute as a part of his programme so as to satisfy himself that the materials are in accordance with specifications, approved drawings and designs and Purchaser's prescribed quality Assurance Standards.

b. **Erection**

All erection work will also be subjected to the Quality Assurance Programme including inspection by the Purchaser or his representative to ensure that the work is done in accordance with the specifications and approved drawings and designs and Purchaser's prescribed Quality Assurance Standards.

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(c) **Expenses of Purchaser's Representative- DELETED**

d. The decision of the Purchaser or his representative shall be final in respect of acceptability or otherwise of any material, fittings, components, or equipment's required for the work.

e. **Quality Assurance Programme**

For proper control of quality and to ensure that the materials, equipment and fittings are manufactured according to specification and the erection is according to approved instructions, ensure quality at all necessary points, whether at manufacturer's works, or in his depot or at work site as well as during erection. Such quality assurance programme shall also meet the requirement of the Purchaser's Prescribed Quality Assurance Standards. This programme of the Contractor shall generally cover the following: -

1. The organization to manage and implement the Quality Assurance programme.

2. The documentation control system: -

   i) Basic control system.
   ii) Adopted at manufacturer's works.
   iii) Adopted at the Contractor's Depot and work site.

3. Procedure adopted for:-

   i) Source Inspection.
   ii) Incoming raw material inspection.
   iii) Verification of materials purchased.
   iv) Fabrication controls.
   v) Site erection controls.

4. Inspection and Test Procedure for:-
   i) Manufacture and quality control procedure.
   ii) Field activities.

5. System of handling and storage.
6. System of quality audit.
7. System of maintenance of records.
8. For the purpose of obtaining ` On Account Payment ' the Contractor shall submit along with the invoice, the documents indicated in the Prescribed Quality Assurance Standard which should inter-alia cover the following as may be applicable in each case.

   i) Material test reports on raw materials used.
   ii) Material type and routine test report on components specification.
   iii) Inspection plan with reports of the Inspection plan check points.
   iv) Routine test report.
   v) Factory test results as required under the specification.
   vi) Quality audit report including test check report of Purchaser's representative if any.

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26. Appendix-04

ORGANISATION CHART AND KEY POSITIONS

The Contractor shall provide the following organization chart for the Works as follows:

Head office Organization Chart

One organization chart shall be provided for the Contractor head office indicating the management and staff structure, with responsible personnel/departments described for all aspects of the work.

Site organization Chart

The Contractor shall provide the proposed site organization indicating the proposed structure, staff partners and positions necessary to adequately manage and control the Works.

The Contractor shall have a competent team of Managers, Engineers, Technical staff etc. so as to complete the work satisfactorily as per various requirements of the contract.

The Key Positions not limited to and corresponding qualification and experience are as under:

S. No.	Position	Minimum No. of Personnel	Qualification	Minimum Experience in Similar Work [years]
1	Project Manager	2	Graduate / diploma in Civil Engineering.	10 years out of which 3 years' Experience in P-Way works of Railway Projects.
2	Civil Engineer for P-Way	4	Graduate / Diploma in Civil Engineering.	5 years' Experience (10years for Diploma) in P-Way works of Railway Projects.
3	Safety Officer	2	Preferably Degree / Diploma in any discipline	5 years in-charge of P-Way works of Railway Projects.
4	Supervisors	8	Any Degree	3 years out of which 2 years' Experience in P-Way works of Railway Projects.

NOTES:

1. The above categories of key positions shall be minimum required for successful completion of the work which shall be deployed at different points of time as per the progress and requirement of work and may not be required to deploy simultaneously and continuously. However, these personnel shall be deployed at site in advance as per requirement and as directed by the Engineer and the decision of Engineer in this regard shall be final and binding.

2. The Contractor shall submit the CVs of the above key positions to the Engineer for his approval within 28 days of issue of letter of Acceptance (LOA).

3. The contractor shall deploy resources as per the above-mentioned minimum requirement and also confirm to deploy manpower over and above the minimum numbers indicated above, if the work requires so.

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4. The performance of project personnel deployed will be evaluated periodically by Employer during the contract period. In case the performance of any of the project personnel is not satisfactory, the Contractor shall replace them with better or equivalent personnel immediately as per directions of the Engineer.

5. Tenderer may propose any number of names of Personnel for each Key Position. Any of the proposed personnel as approved by the Employer for each key position have to be mandatorily deployed in case of award of work.

6. Non-deployment of the Key personnel sl.no 1 leads to imposition of Penalty of Rs 25,000 /- Per Key personnel per month.

7. The proposed Key personnel are not to be changed till the completion of the work. Under emergent circumstances, in case they are required to be changed, the new incumbent should have similar or better experience and qualification than as required above. These changes are permitted only with the approval of the Employer. Change in key personnel for one time without penalty is permitted. However, for subsequent changes there will be Penalty at Rs 25,000 /- Per Key personnel for SL.no 1.

8. All Key Personnel must be permanently stationed at Bangalore till the completion of the work.

9. The penalties imposed are non-refundable.

27. Appendix-05

PLANT AND EQUIPMENT

Sl. no	Item Description	Unit	Qty
1	Auto levels	Nos	2
2	Self-propelled light duty tamper **or** Engine mounted off-track tamper (Engine mounted version) to RDSO Specification TM/SM/OTT/321 dated 28.01.09 or off track tampers (Power pack version) to RDSO specification TM/SM/OTT/320 dated 28.01.09 shall be used for packing	Nos	1 Or 8
3	Light weight lifting cum aligning machine	Nos	1
4	Rail Wheel Lorry	Nos	6
5	Hydraulic rail tensor (Non-infringing type) 70 tonne capacity RDSO to Specification TM/SM/32 Dt.20/12/1991.	Nos	3
6	Abrasive Rail cutter to RDSO Specification TM/SM/1 Rev.01 of 2012.	Nos	6
7	Toe load measuring device (Mechanical) to RDSO Specification TM/SM/14 Rev.01 of 2005	Nos	2
8	Electronic toe load measuring device to RDSO Specification TM/SM/ETLMD/218/Rev.02 upto 13/09/2012.	Nos	2
9	Hydraulic Track jack 15 Tonne cap (Non Infringing type) to RDSO Specification TM/SM//31	Nos	4

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	Dt.08/05/1996.		
10	Simplex Mechanical Track jack 15 Tonne Capacity.	Nos	8
11	Light weight rail cum road trolley	Nos	2
12	Light weight Push trolley	Nos	2
13	Powered Material Trolley to RDSO Specification TM/SM/33 Dt.06/06/1996.	Nos	6
14	Rail Drilling Machine to RDSO Specification TM/SM/3 Dated 24/04/1991.	Nos	4
15	Box type gauge cum level (BG) along with sprit level to RDSO Specification TM-58 Dt.11.06.2001 for BG). TM-52 Dt.24.05.2000 for spirit level).	Nos	10
16	Rail Thermometer (magnetic base type) TM-67 Dt.28.01.2002 (Rev 01 of 2010)	Nos	10

Other Plant and equipment

Sl. no	Item Description	Unit	Qty
1	JCB	Nos	04
2	Tractor	Nos	06
3	Crane	Nos	04
4	Pneumatic Roller	Nos	02
5	Tippers	Nos	10

NOTES:

1. The above type of plant and equipment (but not limited to) may be required for execution of the work. The contractor shall submit the details of plant & equipment to be deployed in the above table within 28 days of issue of LOA to the Engineer for approval.

2. Plant and Equipment indicated above is minimum to be deployed at appropriate stage of the work. However, depending on the requirement to complete the work in the stipulated completion period, the tenderer should deploy additional machinery as circumstances warrant at no extra cost.

3. Plant and equipment to be mobilized for the work shall be in good serviceable condition.

28. Appendix-06

OFFICE ACCOMMODATION, EQUIPMENT AND TRANSPORT - DELETED

29. APPENDIX 7:

DOCUMENT SUBMISSION AND RESPONSE PROCEDURE DELETED

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30. ANNEXURE 1

The Contractor shall prepare and submit his detailed Program of Work so as to achieve key dates of various activities on time. The Contractor shall complete the work in a phased manner by fixing priorities to different stretches of work to give access to the other interfacing contractors as per the requirement of project from time to time and as per the key dates (mile stones) indicated below:

NAME OF WORK:

"Yeshwanthpur - Channasandra Doubling Project - Linking of BG track between Yeshwanthpur and Baiyyappanahalli "A" panel, including Yeshwanthpur, Lottegollahalli & Banaswadi Yards, excluding Hebbal Yard to Banaswadi and Misc. works in Bangalore Division of South Western Railway"

&

"Baiyyappanahalli - Hosur Doubling Project - Linking of BG Track with Allied Works and Manufacturing, Supply & Stacking of Machine-Crushed Track Ballast conforming to RDSO Specification (IRS-GE-1) from Km 197/900 to Km 205/500 between Belandur Road (Excl.) and Baiyyappanahalli “A” Cabin (Incl.) in Bengaluru Division of South Western Railway"

Physical work to be completed as per milestones defined in PCC.

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SECTION 8A-1

GENERALREQUIREMENTS

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SECTION 8A-1: GENERAL REQUIREMENT

SL. NO	DESCRIPTION
1	CARE OF THE WORKS
2	PROTECTION OF THE WORKS FROM WEATHER
3	PROTECTION OF THE FINISHED WORK
4	DAMAGE AND INTERFERENCE
5	STRUCTURES, ROADS AND OTHER PROPERTIES
6	ALTERNATIVE ACCESS
7	TRANSPLANTED / CUTTING OF TREES
8	REMOVAL OF GRAVES AND OTHER OBSTRUCTIONS
9	PROTECTION THE ADJACENT STRUCTURES AND WORKS
10	SITE ESTABLISHMENT
11	SUBMISSIONS OF PARTICULARS
12	SECURITY
13	RECORDS OF WAGE RATES
14	PROVISION AND DISPOSAL OF EARTHWORKS / MATERIALS
15	RESTORATION OF AREAS DISTURBED BY CONSTRUCTION
16	CONTRACTOR'S LABOUR CAMPS

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GENERAL REQUIREMENTS –CONSTRUCTION

1.0 CARE OF THE WORKS

1.1 Any error in the execution of work leading to redesign work shall be duly compensated by the Contractor as per the decision of Engineer. Any error attributable to the construction including Failure to locate underground utilities shall attract penalties.

1.2 Unless otherwise permitted by the Engineer all works shall be carried out in dry conditions.

1.3 The Works, including materials for using in the Works, shall be protected from damage due to water. Water on the Site and water entering the Site shall be promptly by temporary drainage or pumping system or by other methods capable of keeping the Works free of water. Silt and debris shall be removed by traps before the water is discharged and shall be disposed of at a location or locations to which the Engineer has given his consent.

1.4 The discharge points of the temporary systems shall be as per the consent of the Engineer. The Contractor shall make all arrangements with and obtain the necessary approval from the relevant authorities for discharging water to drains, watercourses etc. The relevant work shall not be commenced until the approved arrangements for disposal of the water have been implemented.

1.5 The methods used for keeping the Works free of water shall be such that settlement of, or damage to, new and existing structure does not occur. Measures shall be taken to prevent flotation of new and existing structures.

2.0 PROTECTION OF THE WORKS FROM WEATHER

2.1 Work shall not be carried out in weather conditions that may adversely affect the Works unless proper protection is provided to the satisfaction of the Engineer.

2.2 Permanent Works, including materials for such Works, shall be protected from exposures of weather conditions that may adversely affect such Permanent Works or materials.

2.3 During construction of the Works storm restraint systems shall be provided where appropriate. These systems shall ensure the security of the partially completed and ongoing stages of construction in all weather conditions. Such storm restraint systems shall be installed as soon as practicable and shall be compatible with the right of way, or other access around or throughout the Site.

2.4 The Contractor shall at all times programme and carry out the work duly ensuring protective arrangements such that the Works can be made safe in the event of storms.

3.0 PROTECTION OF THE FINISHED WORK

3.1 The finished Works shall be protected from any damage that could arise from any activities on the adjacent site / works.

4.0 DAMAGE AND INTERFERENCE

4.1 Work shall be carried out in such a manner that there is no damage to or interference with: -

a. Watercourses or drainage systems:
b Utilities:
c Structures (including foundations), roads, including street fixtures, or other properties:

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d Public or private vehicular or pedestrian access:

e Monuments, temples, graves or burial grounds other than to the extent that is necessary for them to be removed or diverted to permit the execution of the Works. Heritage structures shall not be damaged or disfigured on any account.

The Contractor shall inform the Engineer as soon as practicable of any items which are not stated in the Contract to be removed or diverted but which the Contractor considers necessary to be removed or diverted to enable the Works to be carried out. Such items shall not be removed or diverted until the consent of the Engineer to such removal or diversion has been obtained.

4.2 Items which are damaged or interfered with as a result of the Works and items which are removed to enable the Works to be carried out shall be reinstated to the satisfaction of the Engineer and to at least the same condition as existed before the Work started. Any claims by Utility Agencies due to damage of utilities by the Contractor shall be borne by the Contractor.

5.0 STRUCTURES, ROADS, AND OTHER PROPERTIES

5.1 The Contractor shall immediately inform the Engineer of any damage to structures, roads, or other properties.

6.0 ALTERNATIVE ACCESS

6.1 Alternative access shall be provided to all premises if interference with the existing access, public or private, is necessary to enable the Works to be carried out. The arrangements for alternative access shall be as agreed by the Engineer and the concerned agency and at contractor's cost. Unless agreed otherwise, the permanent access shall be reinstated as soon as practicable after the work is complete and the alternative access shall be removing immediately it is no longer required, and the ground surfaces reinstated to the satisfaction of the Engineer. Proper signage and guidance shall be provided for the traffic / users regarding diversions. All temporary access diversion and roads the contractor has to arrange at his own cost.

7.0 TRANSPLANTED / CUTTING OF TREES

7.1 The felling of trees in the Bangalore City is governed by The Karnataka preservation of Trees Act 1976. The Contractor is not permitted to cut any tree in terms of the provisions of the aforementioned Act. The Employer has assessed the number of trees existing within the right-of-way and has arranged for cutting and removal of trees, which are likely to be affected by the right of way (i.e., within the limits of permanent works) construction works. The trees requiring to be felled will have to be removed from ground level prior to commencement of the works. The Contractor has to cut and remove the trees as directed by the Employer.

7.2 The Contractor shall carefully survey the site and identify the additional trees, if any which are coming within the footprints of the permanent structure / building and within the space required for forming slopes / benching etc., for excavation of the basements and are required to be cut / trimmed. The Contractor must notify the Engineer of such requirements well in advance.

7.3 On receipt of the submission by the Contractor giving such details, the Engineer shall arrange to verify the requirement of tree cutting / removal and identify the trees, which can be transplanted subject to compliance with the aforementioned Act. These requirements and details will be forwarded to Forest Department for getting the permission. Contractor will lease with the Forest Department for getting the permission. The Contractor shall also submit a detailed procedure approved by the Engineer for such transplantation duly assisted by competent horticulturist. The trees have to be transplanted as directed by the Engineer. The Contractor has to obtain permission for tree cutting from the concerned authority and then only trees can be cut / transplanted. The Contractor has to arrange for tree felling / transplantation of the trees at the desired locations as suggested by the authorities.

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8.0 REMOVAL OF GRAVES AND OTHER OBSTRUCTIONS

8.1 If any grave and other obstructions are required to be removed in order to execute the Works and such removal has not already been arranged for, the Contractor shall draw the Engineer's attention to them in good time to make necessary arrangement for authorizations for such removal. The Contractor shall not himself remove them unless the Engineer has given consent.

9.0 PROTECTION THE ADJACENT STRUCTURES AND WORKS

9.1 The Contractor shall be taking all necessary precautions to protect the structures or works being carried out by others adjacent to and, for the time being, within the Site from the effects of vibrations, undermining and any other earth movements or the diversion of water flow arising from its works.

10.0 SITE ESTABLISHMENT- DELETED

11.0 Submissions of Particulars - DELETED

12.0 Security - DELETED

13.0 Records of Wage Rates-

13.1 The Contractor shall keep monthly records of the average, high and low wage rates for each trade/ tradesman employed on the Site and records shall be made available to the Engineer during inspection. Contractor has to follow all the existing labor laws.

14.0 Provision and Disposal of Earthworks / Materials

14.1 The Contractor shall be responsible for the provision of all classes of earthworks material required for the Works, whether sourced from the excavation within the Contractor obtained from any other source located outside the Site, for which the Engineer has given the concerned. For fill or dumping sites, the Contractor shall prepare a land plan with the details of surface drainage requirement, final formation levels and arrangement for spreading and comparison of the filled during dumping as acceptable to the Engineer, at contractors dumping yard. The contractor shall also provide security for the Site. The dumping site to be used by the Contractor shall be as directed by the Engineer and has to be arranged by the contractor at his own cost.

14.2 All excavated material, including waste material shall be disposed of at the contractor dumping yard only. The useful material shall be placed and compacted in accordance with the Construction specification for Earth Works or as otherwise directed by the Engineer 's Representatives. The disposal of waste material, bentonite fluid and material contaminated with bentonite shall be the full responsibility of the Contractor and these materials shall be disposed of by the Contractor at his dumping yard and in an approved manner.

14.3 Rock / Dismantled Concrete deposited as fill material at contractors dumping yard.

15.0 Restoration of Areas Disturbed by Construction

Unless otherwise directed by the Engineer, any area disturbed by the construction activity, either inside or outside the Project Right of Way, shall be reinstated as follows:

All areas affected by the construction work shall be reinstated to their original condition, with new materials, including but not necessarily limited to, sidewalks, parking lots, access roads, adjacent roads, properties, and landscaping. Grass cover shall be provided for any bare earth surface areas, along with proper provisions for surface drainage.

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16.0 Contractor's Labour Camps

16.1 The Employer will not provide living accommodation for use of the Contractor or any of his staff or labour employed on the works. Living accommodation shall not be established on any land provided to the Contractor by the Employer for the Works.

16.2 Provision of Labour Camps

The Contractor, shall, at his own expense, make adequate arrangements for the housing, supply of drinking water and provision of bathrooms, latrines, and urinals, with adequate water supply, for his staff as well as for workmen employed on the Works directly or through sub-contractors at the location authorized by Engineer. No labour camp shall be allowed at work site or any unauthorized place.

The Contractor at his own cost shall maintain all campsites in a clean and sanitary condition. The Contractor shall obey all health and sanitary rules and regulations, and carry out at his cost all health and sanitary measures that may from time to time be prescribed by the Local/Medical Authorities and permit inspection of all health and sanitary arrangements at all times by the Employer, the Engineer and the staff of the local municipality or other authorities concerned.

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