



**Bruhat Bangalore Mahanagara Palike**  
**N. R. Square**  
**Bangalore – 560 002**

**THE TURN KEY LUMP SUM FIXED PRICE NO VARIATION CONTRACT BASED ON TENDERER'S  
OWN DESIGN FOR THE WORK OF**

**Construction of Underpass On Sarjapura Road at Harlur Cross Road Junction, Bangalore**

Tender Reference	: No. BBMP/EE(RI-Spl)/ TEND/ 06 / 2016 – 17 dated 27 – 07 – 2016.
Availability of Tender Document in the e Procurement Portal	: From 17 – 08 – 2016 onwards
Last Date for uploading the Filled Tender Document	: 29 – 09 – 2016 upto 1600 hrs.
Time and Date of Opening of Technical Bid of Tender	: 01 – 10 – 2016 at 1630 hrs.
Place of Opening of Technical Bid of Tender	: Office of the Chief Engineer (Road Infrastructure) Fourth Floor, New Building Opp. Dr. Rajkumar Glass House N. R. Square, Bangalore – 560 002
Time and Date of Opening of Financial Bid of Tender	: Will be intimated to the Qualified Tenderers
Place of Opening of Financial Bid of Tender	: Will be intimated to the Qualified Tenderers
Address for Communication of Tender	: Office of the Executive Engineer (Road Infrastructure – Special Division) Fourth Floor, New Building Opp. Dr. Rajkumar Glass House N. R. Square Bangalore – 560 002

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**BRUHAT BENGALURU MAHANAGARA PALIKE**

No: EE(RI-Spl)/TEND/ 06 /16-17

Office of the Executive Engineer  
Road Infrastructure – Special Division  
N.R.Square, Bangalore – 560002  
Dated: 27.07.2016

**INVITATION FOR TENDERS (IFT)**  
**(THROUGH E-PROCUREMENT ONLY)**

1. The Government of Karnataka, vide G.O.No. UDD/279/SFC/2015, Bengaluru, dated 08.01.2016 and vide G.O.No. UDD/199/SFC/2016 (P-1), dated 21.06.2016 has accorded in Principle approval and sanctioned budget under Nagarothana Scheme for taking up of the works listed below.
2. The Bruhat Bangalore Mahanagara Palike (BBMP) has proposes the works of “Widening and Improvement of Sarjapur Main Road from Outer Ring Road near Iblur Junction to BBMP Limits (near Chikkanahalli ROB)” and “Construction of Grade Separator at the Junction of Sarjapura Road & Haralur Road” on Turnkey, Lump Sum, Fixed Price, No Variation contract basis based on Tenderer’s own Design on the basis of Parameters fixed by the BBMP (Alternate Proposal is permitted and is limited to only one). The Alternate Proposal submitted by the Tenderer (along with his Specific Experience) as part of Technical Bid shall conform to the Relevant Indian and International Standards satisfying the Key Parameters fixed by the BBMP and shall be approved by the BBMP.
3. The Executive Engineer, Road Infrastructure-Special Division, invites tenders on behalf of the Commissioner, BBMP, Bengaluru from eligible Tenderers for the construction of works detailed in the table below. The tenderers may submit tenders for works given in the table through e-procurement portal of the Government of Karnataka (viz <https://eproc.karnataka.gov.in>). The Tenderers are advised to note the minimum qualification criteria specified in Clause 3 of the Instructions to Tenderers to qualify for award of the contract.
4. Tender documents may be downloaded from the e-procurement portal of the Government of Karnataka from 17.08.2016.
5. Tenders must be accompanied by Earnest Money Deposit specified for the work in the table below. Earnest money deposit will have to be in any one of the forms as specified in the Tender document and shall have to be valid for 90 days beyond the validity of the tender
6. Tenders must be submitted online through e-procurement portal on or before 16.00 hours on 29.09.2016 and the opening of tenders will be as per the e-procurement portal guidelines.
7. Other details can be seen in the tender documents.

**TABLE**

Sl. No.	Name of the package	Appx. Amount put to tender (Rs. in lakhs)	EMD (Rs.in Lakhs)	Cost of Tender form in Rs. (Non-Refundable) inclusive of VAT	Period of Completion
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1.	Widening and Improvement of Sarjapur Main Road from Outer Ring Road near Iblur Junction upto BBMP Limits near Chikkanahalli ROB Ch 0.00 Km to 4.74 Kms	8950.00	Rs. 89.50 Lakhs (Rs. 1.00 Lakh through e-procurement & Rs. 88.50 Lakhs through BG)	As per e-Procurement Portal	24 Months
2	Construction of Grade Separator in Junction of Sarjapura - Haralur Road	1850.00	Rs. 18.50 Lakhs (Rs. 1.00 Lakh through e-procurement & Rs. 17.50 Lakhs through BG)	As per e-Procurement Portal	18 Months

**NOTE:**

1. Pre bid meeting will be held on 30.08.2016 at 16.00 hours in the office of the Chief Engineer (Road Infrastructure) to clarify the issue and to answer questions on any matter that may be raised at that stage as stated in "Instructions to Bidders" of the bidding document.
2. Technical Bids will be opened on the website <https://eproc.karnataka.gov.in> in the office of the Executive Engineer - Special Division on 01.10.2016 at 16.30 hours.
3. Aspiring Bidders/Contractors who have not registered in e-procurement should register before participating through the website <https://eproc.karnataka.gov.in>
4. Before submission of online bids, bidders must ensure that scanned copies of all the necessary documents have been attached with bid.
5. All the required information required for Bids must be filled and submit online.
6. Tenderers shall upload all the Signed, Sealed and Scanned Copies of Certificates pertaining to their Eligibility Criteria, Essential Conditional Criteria, Financial Criteria Documents, etc. No Physical Documents shall be considered. All the Participants shall produce all the Original Documents for Verification whenever necessary.
7. For those Tenderers whose Technical Bids do not satisfy the Eligibility Criteria as mentioned above, their Financial Bids will not be opened.
8. The BBMP reserves the right to reject any or all of the Tenders without thereby incurring any Liability or Obligation to inform the Tenderers of the Reasons for such action.
9. Tenderers may obtain further information at the Office of Executive Engineer, Road infrastructure-Special Division, Bruhat Bengaluru Mahanagara Palike, N.R. Square, Bangalore – 560002., Mobile: 9739625025 on all working days between working hours.
10. Corrigendum's / Modifications / Corrections, if any, will be published in the Website only.
11. For details, registration and e-payment visit GOK e-Procurement website <https://eproc.karnataka.gov.in> or contact e-Procurement Helpdesk at 080 – 22441076
12. This tender notice can also be seen on the BBMP website [www.bbmp.gov.in](http://www.bbmp.gov.in).

Sd/-  
Executive Engineer  
Road Infrastructure – Special Division  
Bruhat Bengaluru Mahanagara Palike

**Copy Submitted to the:**

1. Personnel Secretary to Worshipful Mayor to bring into the notice of Worshipful Mayor.
2. Personnel assistant to Deputy mayor to bring into the notice of Deputy Mayor.
3. Personnel assistant to Hon'ble Commissioner to bring into the notice of Hon'ble Commissioner.
4. Special Commissioner (Projects)/ Additional Commissioner(Projects) for kind information.
5. Engineer – in – Chief for kind information.
6. Council Secretary to bring into notice of the Standing Committee (Major Works).
7. Chief Engineer (Road Infrastructure)/Environment/Markets/ South zone/West zone/North zone/Rajarajeshwari Nagar zone /Bommanahalli zone/Dasarahalli zone/Mahadevapura zone/ Byatarayanapura zone/ (SWD) for kind information.
8. Superintending Engineer (Road Infrastructure) /Rajarajeshwari Nagar / Bommanahalli/ Dasarahalli /Mahadevapura / Byatarayanapura for kind information.
9. The Joint Secretary(UDD) and the State Tender Bulletin Officer for kind information with a request to publish the same in the State Tender Bulletin
10. The District Tender Bulletin Officer and the Deputy Commissioner, Bangalore Urban District with a Request to publish the same in the District Tender Bulletin.
11. CAO / Chief Auditor for kind information.
12. I. T. Advisor with a Request to publish the same in the BBMP Website.
13. All Executive Engineers with a Request to publish the same in the Display /Notice Boards.
14. ACF (RI) / Accounts Superintendent / Cashier for information for necessary action.
15. Public Relation Officer, BBMP for information and to publish in two leading National Newspapers in Kannada and English.
16. Notice board
17. Office Copy.

Executive Engineer  
(Road Infrastructure - Special Division)  
Bruhat Bangalore Mahanagara Palike

## SECTION 2: INSTRUCTIONS TO TENDERERS (ITT)

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### A. General

#### 1. Scope of Tender

- 1.1 The Bruhat Bangalore Mahanagara Palike (BBMP) (Referred to as Employer in these documents) invites Tenders following Two Cover Tender Procedure, from the Eligible Tenderers, for the Construction of Works (as defined in these documents and referred to as "the Works") detailed in the Invitation for Tenders (IFT). The Tenderers may submit Tenders for the same Work.

#### 2. Eligible Tenderers

- 2.1 Tenderers shall not be under a Declaration of Ineligibility for Corrupt and Fraudulent Practices issued by the Government of Karnataka
- 2.2 Tender from Joint Ventures / Consortia are not acceptable.

#### 3. Qualification of the Tenderer

- 3.1 All Tenderers shall provide the requested information accurately and in sufficient detail in Section 3: Qualification Information.
- 3.2 To qualify for award of this Contract, each Tenderer in its name should have in the last five years i.e. 2011 – 2012 to 2015 – 2016
- Achieved in at least two Financial Year each a minimum Financial Turnover (in all classes of Civil Engineering Construction Works only) of **Rs. 2467.00 Lakh**. Further, the Financial Turnover of the Previous Years shall be given a Weightage of 10% per year to bring them to the Price Level of 2015 – 16.
  - Successfully completed, as a Prime Contractor at least one Similar nature of Grade Separator Work and Value of the Work not less than Rs. **925.00 Lakh** in the last five Financial Years (2011 – 12, 2012 – 13, 2013 - 14, 2014 – 15 and 2015-16).
  - Executed in one single Financial Year, the following minimum Quantities of Work.

• Earthwork in Excavation	50000 Cum
• Reinforced/ PSC Cement Concrete (M-35)	8000 Cum
• Reinforcement of Steel	770 MT
• GSB / WMM	1700 Cum
• Bituminous work (BM/DBM/BC)	360 Cum
- 3.3 Each Tenderer should further demonstrate
- Availability by owning at least 50% of the following Key and Critical Equipment for this Work and the remaining 50% can be deployed on lease / hire basis for all Works provided the relevant Documents (Commitment Agreement, etc.) for Availability for this Work are furnished.

Sl. No.	Equipment	No's
1	Concrete Batch Mix Plant	5 Nos.
2	Hydraulic Excavators	1 Nos.
3	Vibratory Roller (Earth Compactor)	2 Nos.
4	Tippers, 10 Wheeler	5 Nos.

- Liquid Assets and / or availability of Credit Facilities of no less than Rs. **310.00 Lakh** (Letter of Credit from Nationalised / Scheduled Bank for meeting the Fund Requirement, etc.).
- In the case of the death of a Contractor after executing the Agreement / Commencement of the Work, his Legal Heir, if an Eligible Registered Contractor and willing, can execute and complete the work at the accepted Tender Rates irrespective of the Cost of the Work.

- 3.4 Tenderers having In – house Design Office or associated with Design Firms / Consulting Firms shall furnish the Details of the Design Experience of the Tenderer or the Associating Firm in the Design of Grade Separators. In case the Tenderer is associating with a Design Firm / Consulting Firm, Company Profile of the Firm and Consenting Letter for Association shall be enclosed.

**The Employer shall have the right to verify all the Men and Machinery Details / Documents submitted by the Tenderer at any point of time during Technical Evaluation of the Tender Document.**

- 3.5 To qualify for the Contract for which Tenders are invited in this IFT, the Tenderer must demonstrate having Experience and Resources to meet the Aggregate of the Qualifying Criteria for the Contract.
- 3.6 Sub Contractors' Experience and Resources shall not be taken into account in determining the Tenderers Compliance with the Qualifying Criteria.
- 3.7 Tenderers who meet the above specified minimum Qualifying Criteria, will only be qualified, if their available Tender Capacity is more than the total Tender Value. The available Tender Capacity will be calculated as under.

**Assessed available Tender Capacity = (A\*N\*1.5 – B)**

Where

A = Maximum Value of Civil Engineering Works executed in any One Year during the last Five years (updated to 2015 – 2016 Price Level) taking into account the Completed as well as Works in Progress.

N = Number of years prescribed for Completion of the Works for which Tenders are Invited i.e. 18 Months.

B = Value, at 2015 – 2016 Price Level on 10% Weightage per annum, of Existing Commitments and On Going Works to be completed during the next 18 months.

**Note:** The Statements showing the Value of Existing Commitments and On Going works as well as the Stipulated Period of Completion remaining for each of the Works Listed should be countersigned by the Employer in charge, not below the Rank of an Executive Engineer or equivalent.

- 3.8 Even though the Tenderers meet the above Criteria, they are subject to be disqualified if they have
- Made Misleading or False Representations in the Forms, Statements and Attachments submitted in Proof of the Qualification Requirements; and / or
  - Record of Poor Performance such as Abandoning the Works, not properly completing the Contract, Inordinate Delays in Completion, Litigation History, or Financial Failures etc.; and / or
  - Participated in the previous Tender for the same Work and had quoted unreasonably High Tender Prices and could not furnish rational justification.

#### **4. One Tender per Tenderer**

- 4.1 Each Tenderer shall submit only one Tender for the Project. A Tenderer who submits or participates in more than one Tender (other than as a Sub Contractor or in cases of alternatives that have been permitted or requested) will cause all the Proposals with the Tenderer's Participation to be disqualified.

#### **5. Cost of Tendering**

- 5.1 The Tenderer shall bear all Costs associated with the Preparation and Submission of his Tender, and the Employer will in no case be Responsible and Liable for those Costs.



## **6. Site Visit**

- 6.1 The Tenderer shall, prior to submitting his Tender for the Work, visit and examine the Site of Works and its surroundings at his own expense and obtain and ascertain for himself on his own responsibility all information that may be necessary for preparing his Tender and entering into the Contract, including, inter alia, the actual Conditions regarding the Nature and Conditions of the Site, Availability of Materials, Labour, probable Sites for Labour Camps, Stores, etc. and the Extent of Lead and Lift required for the Work in complete form over the entire duration of the Contract, Restrictions, Obstructions in Work, if any, allow for all such Extras likely to be incurred due to any such Conditions, Restrictions, Obstructions, etc. in the quoted Tender Price for the Work.
- 6.2 In addition, the Tenderers shall also satisfy themselves about the following other Factors.
- a. Site Conditions including Access to the Site, Existing and Required Roads and other Means of Transport / Communication for use by him in connection with the Work including Diversion and Rerouting of Services.
  - b. Ensuring that the Traffic Movement during the Construction of the Works is properly diverted, maintained and obstruction to the Traffic Movement is kept to the minimum during various Stages of Construction as planned and approved by the Employer. The Traffic Diversion with all Cost of Men and Materials is to be borne by the Tenderer.
  - c. Requirement and Availability of Land and other Facilities for his enabling Works, Colonies, Stores and Workshops, etc.
  - d. Ground Conditions including those bearing upon Transportation, Disposal, Handling and Storage of Materials required for the Work or obtained there from.
  - e. Source and Extent of Availability of Suitable Materials including Water, etc. and Labours (skilled and unskilled), required for the Work and Laws and Regulations governing their Use and Employment.
  - f. Geological, Meteorological, Topographical and other General Features of the Site and its Surroundings and are pertaining to and needed for the Performance of the Work.
  - g. The Limit and Extent of Surface and Sub Surface Water to be encountered during the Performance of the Work and the Requirement of Drainage and Pumping.
  - h. The Type of Equipment and Facilities needed, for and in the performance of the Work; and
  - i. All other Information pertaining to and needed for the Work including Information as to the Risks, Contingencies and other Circumstances, which may influence or affect the Work or the Cost thereof under this Contract.

The Tenderers shall note that Information, if any, in regard to the Local Conditions, as contained in these Tender Documents, have been provided for Guidance and is not warranted to be complete.

- 6.3 A Tenderer shall be deemed to have full Knowledge of the Site, whether he inspects it or not, and no extra charges consequent to any misunderstanding or otherwise shall be allowed.
- 6.4 The Tenderer and any of his Personnel or Agents will be granted permission by the Employer or his Authorised Nominee, on receipt of Formal Application in respect thereof a Week in Advance of the Proposed Date of Inspection of Site, to enter upon the Premises and Lands for Purpose of such Inspection, but only on the Express Condition that the Tenderer shall indemnify the Employer from and against all Liability in respect thereof and the Tenderer will be responsible for Personal Injury (whether fatal or otherwise), Loss or Damage to Property and any other Loss, Damage, Costs and Expenses however caused which, but for the Exercise of such Permission, would not have arisen.

## **B. Tender Documents**

### **7. Content of Tender Documents**

7.1 The Tender Document shall have all the Sections given in Page 2.

### **8. Clarification of Tender Documents**

8.1 Refer Clause No. 8.2 below.

#### **8.2 Pre Tender Meeting**

8.2.1 The Tenderer or his Authorized Representative is invited to attend a Pre Tender Meeting, which will take place at the Office of the Chief Engineer, Road Infrastructure, Bruhat Bangalore Mahanagara Palike, N.R. Square, Bangalore – 560002 on 30.08.2016 at 1600 hrs.

8.2.2 The Purpose of the Meeting will be to clarify Issues and to answer Questions on any matter that may be raised at that stage.

8.2.3 The Tenderer is requested to submit any Questions in Writing or by Cable to reach the Employer not later than last date of receipt of queries.

8.2.4 Minutes of the Meeting, including the Text of the Questions raised (without identifying the Source of Enquiry) and the Responses given will be displayed in the Website. Any Modification of the Tender Documents listed in Sub Clause 7.1 that may become necessary as a result of the Pre Tender Meeting shall be made by the Employer exclusively through the issue of an Addendum pursuant to Clause 9 and not through the Minutes of the Pre Tender Meeting and the same shall be displayed in the Website.

8.2.5 Non Attendance at the Pre Tender Meeting will not be a cause for Disqualification of a Tenderer.

### **9. Amendment of Tender Documents**

9.1 Before the Deadline for Submission of Tenders, the Employer may modify the Tender Documents by issuing Addenda.

9.2 Any Addendum thus issued shall be part of the Tender Documents and shall be displayed in the Website.

9.3 To give the Tenderers reasonable time in which to take an Addendum into account in preparing their Tenders, the Employer shall extend as necessary the Deadline for Submission of Tenders, in accordance with Sub Clause 16.2 below.

## **C. Preparation of Tenders**

### **10. Documents Comprising the Tender**

10.1 The Tender submitted by the Tenderers shall contain the Documents as follows.

#### **10.1.1 Technical Bid**

- a. Earnest Money Deposit (Details of Electronic Cash and Scanned Copy of Bank Guarantee).
- b. Qualification Information as per Formats given in Section 3.
- c. Detailed Design and Drawings, Detailed Description of Work and Specifications of Materials and Items.
- d. Initial Program showing the General Methods, Arrangements, Construction Methodology, Order and Timing for all the Activities in the Work.
- e. Biodata of Proposed Technical and Managerial Staffs to be deployed at Site for the Work.
- f. Number and Category of each type of Skilled Personnel to be deputed for this Work as per the Details mentioned in the Clause No. 50 of Special Condition of Contract.
- g. Details of Plants and Machineries to be deployed at Site for the Work as per the Details mentioned in the Clause No. 51 of Special Condition of Contract.
- h. Cash Flow Chart on month – to – month basis for the entire Period of Execution of the Work as

per the Details mentioned in the Clause No. 52 of Special Condition of Contract.

- i. Proposed Workshop Facility to be set up by the Tenderer as per the Details mentioned in Clause No. 53 of Special Conditions of Contract.
- j. Unpriced Bill of Quantities as per the Details mentioned in Clause No. 58 of Special Conditions of Contract.
- k. Report on the Aesthetic Aspect of the Structure as per the Details mentioned in Clause No. 2.3 of Section 6 – Scope of Work and Design Criteria.

#### 10.1.2 Financial Bid

- a. The Tender (in the Format indicated in Section 4).
- b. Priced Financial Bid (Section 10);  
and any other Materials required to be completed and submitted by the Tenderers in accordance with these Instructions. The Documents Listed under Sections 4, 7 and 10 shall be filled in without exception.

### 11. Tender Prices

- 11.1 The Contract shall be Turn Key Lump Sum Contract based on Tenderer's own Design for the Whole Works as described in Sub Clause 1.1.
- 11.2 The Tenderer shall fill in the Lump Sum Price (both in Figures and in Words) for the Whole Works. Corrections, if any, shall be made by crossing out, initialing, dating and rewriting.
- 11.3 The Price quoted by the Tenderer shall be for the Whole Works as noted in the Schedule, Specifications and elsewhere in this Document and shall hold good till the Completion of Work. They shall be inclusive of all Taxes, Duties and Levies including Sales Tax, Municipal Taxes, Local Taxes, Octroi, ESI, all Royalties, Patent Rights, other Incidental Charges, etc. The Rate shall also include the Cost of all Labours, Materials, Plant, Machinery, Equipments, Carriage and other Inputs involved in the Execution and Completion of the Work.
- 11.4 The Contractor will have to make his own Arrangements for Water, Electricity, Place for Storage of Construction Materials, Casting Yards, Labour Camps, etc. required for Construction and shall use his own Plant and Machinery, which may be required for the Speedy Execution of the Work.
- 11.5 During Traffic Diversion, the Contractor shall provide necessary Signages, Signals, Lighting Arrangements, etc. The Quoted Rate shall also be inclusive of Providing Skilled Personnel for Traffic Diversion as per the Requirements of the City Traffic Police.

### 12. Tender Validity

- 12.1 Tenders shall remain valid for a period not less than one hundred and eighty (180) days after the Deadline Date for Tender Submission specified in Clause 16. A Tender valid for a Shorter Period shall be rejected by the Employer as Non Responsive.
- 12.2 In Exceptional Circumstances, prior to expiry of the Original Time Limit, the Employer may request that the Tenderers may extend the Period of Validity for a Specified Additional Period. The Request and the Tenderers' Responses shall be made in Writing or by Cable. A Tenderer may refuse the Request without forfeiting his Earnest Money Deposit. A Tenderer agreeing to the Request will not be required or permitted to modify his Tender, but will be required to extend the Validity of his Earnest Money Deposit for a Period of the Extension, and in compliance with Clause 13 in all respects.

### 13. Earnest Money Deposit

- 13.1 The Tenderer shall furnish, as part of his tender, Earnest Money Deposit (EMD) in the amount as mentioned in IFT for this particular Work. Further, out of the total EMD Amount only **Rs. 1.00 Lakh (Rupees One Lakh only)** shall be paid in the e – procurement portal using any of the following modes and the Balance Amount shall be in the form of Bank Guarantee from any Nationalised / Scheduled Bank.

- Credit Card.
- Direct Debit.
- National Electronic Fund Transfer (NEFT).
- Over the Counter (OTC).

#### **NEFT Payment Procedure**

If a Tenderer chooses to make Payment of EMD / Tender Processing Fee using Reserve Bank of India's (RBI) National Electronic Fund Transfer (NEFT) System, the Tenderer will need to log into e – Procurement System, access the Tender for which Bid is being created and then select the NEFT Option under the Payment Section and print the Challan shown in that Section. The Printed Challan will have the Unique Bid Reference Number, Account Details of Government of Karnataka and the Amount to be remitted. The Tenderer shall submit the Printed Challan to its Bank Branch (NEFT enabled) and request for an Account – to – Account Transfer, wherein the money will get transferred from the Tenderer's Bank Account to GOK's Bank Account. The Tenderer shall ensure that NEFT Transfer Instructions are executed and the Funds are wired to the Government of Karnataka's Principal Account before the Last Date for Bid Submission and preferably 24 hours before the Last Date for Bid Submission. If the Tenderer's Bank transfers / wires the money after the Last Date for Bid Submission, the Tenderer's Bid will be liable for rejection. Upon executing the Transfer, the Tenderer's Bank will provide a Reference Number generated by NEFT Software as Confirmation of Transfer, which has to be input by the Tenderer in the Payment Section of its Bid as Payment Confirmation before the Bid is submitted i.e. as a pre requisite for Bid Submission. The Account Number from which the Funds were transferred shall be input in the e – Procurement System as part of its Bid also.

#### **OTC Payment Procedure**

If a Tenderer chooses to make Payment of EMD / Tender Processing Fees Over The Counter (OTC) in any of the designated Axis Bank Branches listed in the e – Procurement Website ([www.eproc.karnataka.gov.in](http://www.eproc.karnataka.gov.in)), the Tenderer will need to log into e – Procurement System, access the Tender for which Bid is being created and then select the OTC Option under the Payment Section and print the Challan shown in that Section. The Printed Challan will have the Unique Bid Reference Number and the Amount to be remitted along with the Challan. The Tenderer can choose to make the Payment either in the form of Cash or in the form of Demand Draft. Cheque Payments will not be accepted. The Tenderer is requested to specifically inform the Bank Officer to input the Unique Bid Reference Number printed in the Challan in the Banking Software. Upon successful Receipt of the Payment, the Bank will provide a 16 Digit Reference Number acknowledging the Receipt of Payment. This 16 Digit Reference Number has to be input by the Tenderer in the Payment Section of its Bid as Payment Confirmation before the Bid is submitted i.e. as a pre requisite for Bid Submission.

- 13.2 EMD Amount shall be submitted by the Tenderer taking into account of the following Conditions.
- a. EMD for Rs. 1.00 Lakh shall be accepted only in the form of Electronic Cash (and not through Demand Draft or Bank Guarantee) and will be maintained in the Government's Central Pooling Account at Axis Bank until the Work is awarded and EMD for the Balance Amount shall be in the Form of Bank Guarantee from any Nationalised / Scheduled Bank valid for a period of not less than two hundred and ten (210) days after the Deadline Date for Tender Submission specified in Clause 16. Further, the Original Bank Guarantee shall be submitted to the Office of the Executive Engineer (Road Infrastructure – Special Division), Bruhat Bangalore Mahanagara Palike, N. R. Square, Bangalore – 560 002 by 29 – 09 – 2016 within 1600 hrs.
  - b. The Tenderer's Bid will be evaluated only on Confirmation of Receipt of the Payment of EMD as indicated in Sub Clauses 13.1 and 13.2.

- 13.3 Any Tender not accompanied by an acceptable EMD and not secured as indicated in Sub Clauses 13.1 and 13.2 above shall be rejected by the Employer as Non Responsive.
- 13.4 The Earnest Money Deposit of the Unsuccessful Tenderers will be returned within 30 days of the end of the Tender Validity Period as specified in Sub Clause 12.1.
- 13.5 The Earnest Money Deposit of the Successful Tenderer will be discharged only when the Tenderer has signed the Agreement and furnished the required Performance Security.
- 13.6 The Earnest Money Deposit may be forfeited
- If the Tenderer withdraws the Tender after Tender Opening during the Period of Tender Validity;
  - If the Tenderer does not accept the Correction of the Tender Price, pursuant to Clause 24; or
  - In the case of a successful Tenderer, if the Tenderer fails within the specified time limit to
    - Sign the Agreement; or
    - Furnish the required Performance Security.
- 14. Format and Signing of Tender**
- 14.1 The Electronic Tendering System for the Construction of Work comprises of two Stages (i) Technical Bid and (ii) Financial Bid. The Tenderers are required to submit the Tender Documents in two stages electronically.
- 14.2 The Tender shall contain no Alterations or Additions, except those to comply with instructions issued by the Employer that are duly incorporated.
- 14.3 Each Page uploaded shall be duly signed and sealed by the Tenderer or a Person or Persons duly authorised to sign on behalf of the Tenderer. Such Authorisation shall be indicated by a Written Power – of – Attorney accompanying the Tender. The Corrections, if any, shall be made by striking of and shall be initialed with date.

#### **D. Submission of Tenders**

- 15. Sealing and Marking of Tenders**
- 15.1 The Tenderer shall access Tender Documents, fill them and submit the Completed Tender Document as stated in Clause 10 through Website of e – Procurement itself ([www.eproc.karnataka.gov.in](http://www.eproc.karnataka.gov.in)). The Signed, Sealed and Scanned Copy of all the Documents as stated in Clause 10 shall be attached to the e – Tender Document, failing which the Bid will not be considered. It is the Responsibility of the Tenderer to submit all the Documents pertaining to Eligibility Criteria / Qualification Information / Design Details with due diligence. All the Pages of the Document shall be serially numbered with an Index for ready reference.
- 15.2 No Physical Documents shall be considered. However, all the participating Tenderers shall produce all the Original Documents / Hard Copy of the Scanned Documents uploaded in the Portal for Verification whenever asked by the Employer.
- 16. Deadline for Submission of the Tenders**
- 16.1 Tenders must be received by the Employer at the Website Address specified above no later than 29-09-2016 upto 1600 hrs.
- 16.2 The Employer may extend the Deadline for Submission of Tenders by issuing an Amendment in accordance with Clause 9, in which case all Rights and Obligations of the Employer and the Tenderers previously subject to the Original Deadline will then be subject to the New Deadline.
- 17. Late Tenders**
- 17.1 Any Tenderer trying to submit the Tender after Deadline will not be accepted in the e – Procurement.
- 18. Modification and Withdrawal of Tenders**
- 18.1 Tenderers may modify Contents of Technical Bid or Financial Bid before the Deadline prescribed

- in Clause 16.
- 18.2 Tenderers may withdraw their Tenders by canceling his Bid on the Website only before the Deadline prescribed in Clause 16.
- 18.3 No Tender may be modified and withdrawn after the Deadline for Submission of Tenders.
- 18.4 Withdrawal or Modification of a Tender between the Deadline for Submission of Tenders and the Expiration of the Original Period of Tender Validity specified in Clause 12.1 above or as extended pursuant to Clause 12.2 may result in the Forfeiture of the Earnest Money Deposit pursuant to Clause 13.
- 18.5 Tenderers may only offer Discounts to, or otherwise modify the Prices of their Tenders by submitting Tender Modifications in accordance with this Clause, or include in the Original Tender Submission.

## **E. Tender Opening and Evaluation**

### **19. Opening of Technical Bid of all Tenders and Evaluation to determine Qualified Tenderers**

- 19.1 The Employer will open the Technical Bids of all the Tenders received in the presence of the Tenderers or their Representatives who choose to attend at 1630 hrs. on 01 – 10 – 2016 at Office of the **Executive Engineer** (Road Infrastructure – Special Division), Bruhat Bangalore Mahanagara Palike, N. R. Square, Bangalore – 560 002. In the event of the Specified Date of Tender Opening being declared a Holiday for the Employer, the Tenders will be opened at the Appointed Time and Location on the Next Working Day.
- 19.2 The Tenderers' Names, the Presence or Absence of Earnest Money Deposit (Amount, Format and Validity), the Submission of Qualification Information and such other Information as the Employer may consider Appropriate will be announced by the Employer at the Opening.
- 19.3 The Employer shall prepare Minutes of the Tender Opening, including the Information Disclosed to those present in accordance with Sub Clause 19.2.
- 19.4 The Employer will evaluate and determine whether each Tender (a) is accompanied by the Required Earnest Money Deposit as per stipulations in ITT Clause 13.1 and (b) meets the Minimum Qualification Criteria stipulated in ITT Clause 3 and (c) contains the Tenderer's Designs and Drawings on the basis of the Parameters fixed in the Tender Document. The Employer will draw out a List of Qualified Tenderers.

### **20. Opening of Financial Bids of the Qualified Tenderers and Evaluation**

- 20.1 The Employer will inform all the Qualified Tenderers the Time, Date and Venue fixed for the Opening of the Financial Bid containing the Priced Financial Bid. The Employer will open the Priced Financial Bids of Qualified Tenderers at the Appointed Time and Date in the presence of the Tenderers or their Representatives who choose to attend. In the event of the Specified Date of Financial Bid Opening being declared a Holiday for the Employer, the Financial Bid will be opened at the Appointed Time and Location on the Next Working Day.
- 20.2 The Tenderers' Names, the Tender Prices, the Total Amount of each Tender, any Discounts, and such other Details as the Employer may consider Appropriate, will be announced by the Employer at the opening. No Tender shall be rejected at Tender Opening.
- 20.3 The Employer shall prepare Minutes of the Priced Financial Bid Opening, including the Information disclosed to those present in accordance with Sub Clause 20.2.

### **21. Process to be Confidential**

- 21.1 Information relating to the Examination, Clarification, Evaluation, and Comparison of Tenders and Recommendations for the Award of a Contract shall not be disclosed to Tenderers or any other persons not officially concerned with such Process until the Award to the Successful Tenderer has been announced. Any effort by a Tenderer to influence the Employer's Processing of Tenders or Award Decisions may result in the Rejection of his Tender.

**22. Clarification of Tenders**

- 22.1 To assist in the Examination, Evaluation and Comparison of Tenders, the Employer may, at his discretion, ask any Tenderer for Clarification of his Tender, including Breakdowns of Unit Rates. The Request for Clarification and the Response shall be in Writing or by Cable, but no change in the Price or Substance of the Tender shall be sought, offered, or permitted except as required to confirm the Correction of Arithmetic Errors discovered by the Employer in the evaluation of the Tenders in accordance with Clause 24.
- 22.2 Subject to Sub Clause 22.1, no Tenderer shall contact the Employer on any Matter relating to its Tender from the time of the Tender Opening to the Time the Contract is awarded. If the Tenderer wishes to bring Additional Information to the Notice of the Employer, it should do so in Writing.
- 22.3 Any effort by the Tenderer to influence the Employer in the Employer's Tender Evaluation, Tender Comparison or Contract Award Decisions may result in the rejection of the Tenderers' Tender.

**23. Examination of Tenders and Determination of Responsiveness**

- 23.1 Prior to the Detailed Evaluation of Tenders, the Employer will determine whether each Tender; (a) has been properly signed; and (b) is substantially Responsive to the Requirements of the Tender Documents.
- 23.2 A Substantially Responsive Tender is one which conforms to all the Terms, Conditions and Specifications of the Tender Documents, without Material Deviation or Reservation. A Material Deviation or Reservation is one (a) which affects in any Substantial Way the Scope, Quality or Performance of the Works; (b) which limits in any Substantial Way, inconsistent with the Tender Documents, the Employer's Rights or the Tenderer's Obligations under the Contract; or (c) whose Rectification would affect Unfairly the Competitive Position of other Tenderers presenting Substantially Responsive Tenders.
- 23.3 If a Tender is not Substantially Responsive, it will be rejected by the Employer, and may not subsequently be made responsive by Correction or Withdrawal of the Non Conforming Deviation or Reservation.

**24. Correction of Errors**

- 24.1 Tenders determined to be Substantially Responsive will be checked by the Employer for any Arithmetic Errors. Errors will be corrected by the Employer as follows.
- (a) Where there is a Discrepancy between the Rates in Figures and in Words, the lower of the two will govern.
- 24.2 The Amount stated in the Tender will be adjusted by the Employer in accordance with the above Procedure for the Correction of Errors and, with the Concurrence of the Tenderer, shall be considered as binding upon the Tenderer. If the Tenderer does not accept the Corrected Amount the Tender will be rejected, and the Earnest Money Deposit may be forfeited in accordance with Sub Clause 13.6 (b).

**25. Evaluation and Comparison of Tenders**

- 25.1 The Employer will evaluate and compare only the Tenders determined to be Substantially Responsive in accordance with Clause 23.
- 25.2 In evaluating the Tenders, the Employer will determine for each Tender the evaluated Tender Price by adjusting the Tender Price as follows.
- a. Making any Correction for Errors pursuant to Clause 24 and
- b. Making Appropriate Adjustments to reflect Discounts or other Price Modifications offered in accordance with Sub Clause 18.5.
- 25.3 The Employer reserves the right to accept or reject any Variation, Deviation or Alternative Offer. Variations, Deviations and Alternative Offers and other Factors, which are in excess of the requirements of the Tender Documents or otherwise result in Unsolicited Benefits for the Employer, shall not be taken into account in Tender Evaluation.

- 25.4 Deleted.
- 25.5 If the Tender of the Successful Tenderer is seriously Unbalanced in relation to the Employer's Estimate of the Cost of the Work to be performed under the Contract, the Employer may require the Tenderer to produce Detailed Price Analyses for any or all Items of the Financial Bid, to demonstrate the Internal Consistency of those Prices with the Construction Methods and Schedule Proposed. After Evaluation of the Price Analyses, the Employer may require that the Amount of the Performance Security set forth in Clause 29 be increased at the expense of the Successful Tenderer to a level sufficient to protect the Employer against Financial Loss in the event of Default of the Successful Tenderer under the Contract.

#### **F. Award of Contract**

##### **26. Award Criteria**

- 26.1 Subject to Clause 27, the Employer will award the Contract to the Tenderer whose Tender has been determined to be Substantially Responsive to the Tender Documents and who has offered the Lowest Evaluated Tender Price, provided that such Tenderer has been determined to be Eligible in accordance with the Design and Drawings submitted by the Tenderer as per the Scope of Work, Design Criteria (as detailed in Section 6) and Tender Drawings as Criteria.

##### **27. Employer's Right to accept any Tender and to reject any or all Tenders**

- 27.1 Notwithstanding Clause 26, the Employer reserves the right to accept or reject any Tender, and to cancel the Tender Process and reject all Tenders, at any time Prior to the Award of Contract, without thereby incurring any Liability to the Affected Tenderer or Tenderers or any Obligation to inform the Affected Tenderer or Tenderers of the Grounds for the Employer's Action.

##### **28. Notification of Award and Signing of Agreement**

- 28.1 The Tenderer whose Tender has been accepted will be notified of the Award by the Employer prior to Expiration of the Tender Validity Period by Cable, Telex, e – mail or Facsimile confirmed by Registered Letter. This Letter (hereinafter and in the Conditions of Contract called the "Letter of Acceptance") will state the Sum that the Employer will pay the Contractor in consideration of the Execution, Completion and Maintenance of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Contract called the "Contract Price").
- 28.2 The Notification of Award will constitute the Formation of the Contract, subject only to the furnishing of Security Deposit in accordance with the provisions of Clause 29.
- 28.3 The Agreement will incorporate all Agreements between the Employer and the Successful Tenderer. It will be kept ready for Signature of the Successful Tenderer in the Office of Employer within 20 days following the Notification of Award along with the Letter of Acceptance. Within 20 days of Receipt, the Successful Tenderer will sign the Agreement and deliver it to the Employer.
- 28.4 Upon furnishing by the Successful Tenderer the Performance Security, the Employer will promptly notify the other Tenderers that their Tenders have been unsuccessful.

##### **29. Performance Security**

- 29.1 Within 20 days of receipt of the Letter of Acceptance, the Successful Tenderer shall deliver to the Employer a Performance Security in any of the forms given below for an Amount equivalent to 5% of the Contract Price plus Additional Security for Unbalanced Tenders in accordance with Sub Clause 25.5 of ITT and Clause 43 of the Conditions of Contract.
- Banker's Cheque / Demand Draft / Pay Order in favour of The Commissioner, BBMP, Bangalore payable at Bangalore or
  - Bank Guarantee in the Form given in Section 11.
  - Specified Small Saving Instruments pledged to The Commissioner, BBMP, Bangalore.



- 29.2 If the Security Deposit is provided by the Successful Tenderer in the form of a Bank Guarantee, it shall be issued either by a Nationalized / Scheduled Bank.
- 29.3 The Security Deposit if furnished in Demand Draft can, if requested, be converted to Interest Bearing Securities at the Cost of the Contractor.
- 29.4 Failure of the Successful Tenderer to comply with the Requirements of Sub Clause 29.1 shall constitute Sufficient Grounds for Cancellation of the Award and Forfeiture of the Earnest Money Deposit.
- 29.5 The Security Deposit will be discharged in the Stages as mentioned in **Clause 65 of Special Conditions of Contract**.
- 30. Advance Payment**
- 30.1 The Employer will provide an Advance Payment on the Contract Price as stipulated in the Conditions of Contract, subject to the Maximum Amount as stated in Contract Data.
- 31. Corrupt or Fraudulent Practices**
- 31.1 The Employer requires that the Tenderers / Suppliers / Contractors, observe the Highest Standard of Ethics during the Procurement and Execution of such Contracts. In pursuance of this Policy, the Employer
- a. Will reject a Proposal for Award if it determines that the Tenderer recommended for Award has engaged in Corrupt or Fraudulent Practices in competing for the Contract in Question.
  - b. Will declare a Firm Ineligible, either Indefinitely or for a Stated Period of Time, to be awarded a BBMP Contract if it at any time determines that the Firm has engaged in Corrupt or Fraudulent Practices in competing for, or in executing, a GOK Contract.
- 31.2 Furthermore, Tenderers shall be aware of the Provision stated in Sub Clause 50.2 of the Conditions of Contract.

### **SECTION 3: QUALIFICATION INFORMATION**

The information to be filled in by the Tenderer hereunder will be used for purposes of computing Tender Capacity as provided for in Clause 3 of the Instructions to Tenderers. This information will not be incorporated in the Contract.

1.1 Constitution or Legal Status of Tenderer [Attach Copy]

Place of Registration [Attach Copy]

Principal Place of Business

1.2 Total Value of Civil Engineering Construction Works executed and Payments received in the last five years (in Rs. Lakh)

2011 – 12	_____
2012 – 13	_____
2013 – 14	_____
2014 – 15	_____
2015 – 16	_____

[Attach Certificate from Chartered Accountant]

1.3 Work performed as Prime Contractor (in the same name) on Works of Similar Nature over during the Five Years specified in 1.2 above.

Project Name	Name of Employer	Description of Work	Contract Number	Value of Contract in Rs. Lakh	Date of Issue of Work Order	Specified Period of Completion	Actual Date of Completion	Remarks explaining Reasons for Delay in Completion of Work
1	2	3	4	5	6	7	8	9

1.4 Quantities of Work Executed as Prime Contractor (in the same name) during the Last Five Years specified in 1.2 above.

Year	Name of Work	Name of Employer	Quantity of Work Performed <sup>1</sup>					Remarks (Indicate Contract Reference)
			Reinforced Cement Concrete (Cum)	GSB/ WMM (Cum)	BDM/ BC (Cum)	Mastic Asphalt (Sq.m)	Reinforcement Steel (MT)	
2011 – 12								
2012 – 13								
2013 – 14								
2014 – 15								
2015 – 16								

<sup>1</sup> Items of Work for which Data is requested should tally with that specified in ITT Clause 3

- 1.5 Information on Works for which Tenders have been submitted and Works which are yet to be Completed as on the Date of this Tender.

(A) Existing Commitments and On Going Works

Description of Work	Place and State	Contract No. and Date	Name and Address of the Employer	Value of Contract (Rs. Lakh)	Stipulated Period of Completion	Value of Works <sup>2</sup> remaining to be Completed (Rs. Lakh)	Anticipated Date of Completion
1	2	3	4	5	6	7	8

<sup>2</sup> Attach Certificates from Engineer – in – Charge.

(B) Works for which Tenders already submitted

Description of Work	Place and State	Name and Address of the Employer	Estimated Value of Works (Rs. Lakh)	Stipulated Period of Completion	Date when Decision is Expected	Remarks, if any
1	2	3	4	5	6	7

- 1.6. The following Items of Equipment are considered Essential for successfully carrying out the Works. The Tenderer should furnish all the information listed below.

Item of Equipment	Requirement <sup>3</sup>			Owned and Available		Remarks
	No.	Capacity	Owned	No. / Capacity	Age / Condition	

<sup>3</sup> The Item of Equipment, Required Number and Capacity should match with those specified in ITT Clause 3.3 (a).

- 1.7 Reports on the Financial Standing of the Tenderer, such as Profit and Loss Statements and Auditor's Reports for the last Five Years.
- 1.8 Qualification and Experience of the Key Technical and Management Personnel in Permanent Employment with the Tenderer and those that are proposed to be Deployed on this Contract, if awarded.
- 1.9 Name, Address, Telephone, Telex and Fax Numbers of the Tenderers' Bankers who may provide References if contacted by the Employer.
- 1.10 Evidence of Access to Financial Resources to meet the Qualification Requirement specified in ITT Clause 3.3 (b): Letter of Credit. List them below and attach Certificate from the Banker in the suggested Format as under.

**SECTION 4: FORMS OF TENDER, LETTER OF ACCEPTANCE, NOTICE TO PROCEED WITH THE  
WORK AND AGREEMENT FORM**

**Form of Tender**

Description of the Works: **THE TURN KEY LUMP SUM FIXED PRICE NO VARIATION CONTRACT  
BASED ON TENDERER'S OWN DESIGN FOR THE WORK OF "Construction  
of Underpass On Sarjapura Road at Harlur Cross Road Junction, Bangalore".**

To  
The Executive Engineer (RI – Spl)  
Bruhat Bangalore Mahanagara Palike  
N. R. Square  
Bangalore – 560 002

Dear Sir

We \_\_\_\_\_ offer to construct and maintain during the Defects Liability Period the Works described above in accordance with the Terms and Conditions, Scope of Work, Conditions of Contract accompanying this Tender for the Lump Sum Fixed No Variation Contract Price of \_\_\_\_\_ [in figures] (\_\_\_\_\_) [in letters].<sup>4</sup>

This Tender and your Written Acceptance of it shall constitute a Binding Contract between us. We understand that you are not bound to accept the lowest or any Tender you receive.

We undertake that, in competing for (and, if the award is made to us, in executing) the above contract, we will strictly observe the Laws against Fraud and Corruption in Force in India namely "Prevention of Corruption Act 1988".

We hereby confirm that this Tender complies with the Tender Validity and Earnest Money Deposit required by the Tender Documents.

We attach herewith our Current Income Tax Clearance Certificate.

Yours faithfully  
Authorized Signature:

Name and Title of Signatory:  
Name of Tenderer:  
Address:

<sup>4</sup> To be filled in by the Tenderer, together with his Particulars and Date of Submission at the Bottom of the Form of Tender.

**Letter of Acceptance**  
**(Letter Head Paper of the Employer)**

Date:

To: [Name and Address of the Contractor]

Dear Sirs

This is to notify you that your Tender dated \_\_\_\_\_ for execution of the **TURN KEY LUMP SUM FIXED PRICE NO VARIATION CONTRACT BASED ON TENDERER'S OWN DESIGN FOR THE WORK OF "Construction of Underpass On Sarjapura Road at Harlur Cross Road Junction, Bangalore", No. BBMP / EE(RI-Spl) / TEND / 06 / 2016 – 17 dated 27.07.2016** for the Contract Price of Rupees (\_\_\_\_\_) [amount in both Words and Figures], as corrected and modified in accordance with the Instructions to Tenderers is hereby accepted by us.

You are hereby requested to furnish Security Deposit Plus Additional Security for Unbalanced Tenders in Terms of Sub Clause 25.5 of ITT, in the form detailed in Clause No. 29.1 of ITT for an amount of Rs. \_\_\_\_\_ within 20 days of the Receipt of this Letter of Acceptance valid upto 30 days from the Date of Expiry of Defects Liability Period of 24 months i.e. upto \_\_\_\_\_ and sign the Contract, failing which action as stated in Clause No. 29.4 of ITT will be taken.

Yours faithfully

Authorized Signature

Name and Title of Signatory

Name of Agency

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**Issue of Notice to Proceed with the Work**  
**(Letter Head of the Employer)**

Date:

To: [Name and Address of the Contractor]

Dear Sirs

Pursuant to your furnishing the requisite Security Deposit as stipulated in ITT Clause 29.1 and signing of the Contract Agreement for the **TURN KEY LUMP SUM FIXED PRICE NO VARIATION TENDERS BASED ON TENDERER'S OWN DESIGN FOR THE WORK OF "Construction of Underpass On Sarjapura Road at Harlur Cross Road Junction, Bangalore"** for a Tender Price of Rs. \_\_\_\_\_, you are hereby instructed to proceed with the execution of the said works in accordance with the Contract Documents.

Yours faithfully

(Signature, Name and Title of Signatory authorized to sign on behalf of Employer)

**Agreement Form**

This Agreement, made on the \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_, between \_\_\_\_\_ [Name and Address of Employer] (hereinafter called “the Employer”) of the one part and \_\_\_\_\_ [Name and Address of Contractor] (hereinafter called “the Contractor”) of the other part.

Whereas the Employer is desirous that the Contractor execute **TURN KEY LUMP SUM FIXED PRICE NO VARIATION TENDERS BASED ON TENDERER’S OWN DESIGN FOR THE WORK OF “Construction of Underpass On Sarjapura Road at Harlur Cross Road Junction, Bangalore”, No. BBMP / EE (RI-Spl) / TEND / 06 / 2016 – 17 dated 27.07.2016** (hereinafter called “the Works”) and the Employer has accepted the Tender by the Contractor for the execution and completion of such Works and the remedying of any defects therein at a Contract Price of Rupees \_\_\_\_\_.

NOW THIS AGREEMENT WITNESSETH as follows.

1. In this Agreement, Words and Expression shall have the same Meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to, and they shall be deemed to form and be read and construed as part of this Agreement.
2. In consideration of the Payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any Defects therein in conformity in all aspects with the Provisions of the Contract.
3. The Employer hereby covenants to pay the Contractor in consideration of the Execution and Completion of the Works and Remedying the Defects wherein the Contract Price or such other Sum as may become payable under the Provisions of the Contract at the times and in the manner prescribed by the Contract.
4. The following Documents shall be deemed to form and be read and construed as part of this Agreement, viz.
  - i. Letter of Acceptance.
  - ii. Notice to proceed with the Works.
  - iii. Contractor’s Tender.
  - iv. Contract Data.
  - v. Conditions of Contract (including Special Conditions of Contract).
  - vi. Specifications.
  - vii. Drawings.
  - viii. Financial Bid.
  - ix. Minutes of Meeting of Pre Tender Meeting and
  - x. Any other Document listed in the Contract Data as forming part of the Contract.

In witness whereof the Parties thereto have caused this Agreement to be executed the day and year first before written.

The Common Seal of \_\_\_\_\_  
was hereunto affixed in the Presence of  
Signed, Sealed and Delivered by the said \_\_\_\_\_  
in the Presence of:  
Binding Signature of Employer \_\_\_\_\_  
Binding Signature of Contractor \_\_\_\_\_

## SECTION 5: CONDITIONS OF CONTRACT

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## Conditions of Contract

### A. General

#### 1. Definitions

- 1.1 Terms which are defined in the Contract Data are not also defined in the Conditions of Contract but keep their Defined Meanings. Bold Letters are used to identify Defined Terms.

**Financial Bid** means the Priced and Completed Financial Bid forming part of the Tender.

**Compensation Events** are those defined in Clause 38 hereunder.

The **Completion Date** is the Date of Completion of the Works as certified by the Employer in accordance with Sub Clause 46.1.

The **Contract** is the Contract between the Employer and the Contractor to execute, complete and maintain the Works. It consists of the Documents listed in Clause 2.2 below.

The **Contract Data** defines the Documents and other Information, which comprise the Contract.

The **Contractor** is a Person or Corporate Body whose Tender to carry out the Works has been accepted by the Employer.

The **Contractor's Tender** is the Completed Tender Document submitted by the Contractor to the Employer.

The **Contract Price** is the Price stated in the Letter of Acceptance.

**Days** are Calendar Days; **Months** are Calendar Months.

A **Defect** is any Part of the Works not completed in accordance with the Contract.

The **Defects Liability Period** is the Period named in the Contract Data and calculated from the Completion Date.

The **Employer** is the Party or his Representative who will employ the Contractor to carry out the Works.

**Equipment** is the Contractor's Machinery and Vehicles brought temporarily to the Site to construct the Works.

The **Intended Completion Date** is the Date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date is specified in the Contract Data. The Intended Completion Date may be revised only by the Employer by issuing an Extension of Time.

**Materials** are all Supplies, including Consumables, used by the Contractor for incorporation in the Works.

**Plant** is any Integral Part of the Works which is to have a Mechanical, Electrical, Electronic or Chemical or Biological Function.

The **Site** is the Area defined as such in the Contract Data.

**Specification** means the Specification of the Works included in the Contract and any Modification or Addition made or approved by the Employer.

The **Start Date** is given in the Contract Data. It is the date when the Contractor shall commence Execution of the Works. It does not necessarily coincide with any of the Site Possession Dates.

A **Subcontractor** is a Person or Corporate Body who has a Contract with the Contractor to carry out a Part of the Work in the Contract which includes Work on the Site.

A **Variation** is an Instruction given by the Employer which varies the Works.

The **Works** are what the Contract requires the Contractor to construct, install, and turn over to the Employer, as defined in the Contract Data.

#### 2. Interpretation

- 2.1 In interpreting these Conditions of Contract, Singular also means Plural, Male also means Female or Neuter, and the other way around. Headings have no Significance. Words have their Normal Meaning under the Language of the Contract unless specifically defined. The Employer will provide Instructions clarifying Queries about the Conditions of Contract.

- 2.2 The Documents forming the Contract shall be interpreted in the following Order of Priority.

- i. Agreement.
- ii. Letter of Acceptance, Notice to proceed with the Works.
- iii. Contractor's Tender.
- iv. Contract Data.
- v. Conditions of Contract.
- vi. Specifications.
- vii. Drawings.
- viii. Financial Bid.
- ix. Minutes of Meeting of Pre Tender Meeting and
- x. Any other Documents listed in the Contract Data as forming Part of the Contract.

**3. Law Governing Contract**

- 3.1 The Law Governing the Contract is the Laws of India supplanted by the Karnataka Local Acts.

**4. Employer's Decisions**

- 4.1 Except where otherwise specifically stated, the Employer will decide Contractual Matters between the Employer and the Contractor.

**5. Delegation**

- 5.1 The Employer may delegate any of his Duties and Responsibilities to other people after notifying the Contractor and may cancel any Delegation after notifying the Contractor.

**6. Communications**

- 6.1 Communications between Parties which are referred to in the Conditions are effective only when in writing. A Notice shall be effective only when it is delivered (in terms of Indian Contract Act).

**7. Subcontracting**

Deleted.

**8. Other Contractors**

- 8.1 The Contractor shall cooperate and share the Site with other Contractors, Public Authorities, Utilities and the Employer.

**9. Personnel**

- 9.1 The Contractor shall employ the Technical Personnel (of Number and Qualifications) as may be stipulated by the Employer from time to time during the Execution of the Work. The Technical Staff so employed shall be available at Site as may be stipulated by the Employer.
- 9.2 If the Employer asks the Contractor to remove a person who is a member of the Contractor's Staff or his Work Force stating the Reasons, the Contractor shall ensure that the Person leaves the Site within Seven Days and has no further Connection with the work in the Contract.

**10. Employer's and Contractor's Risks**

- 10.1 The Employer carries the Risks which this Contract states are Employer's Risks, and the Contractor carries the Risks which this Contract states are Contractor's Risks.

**11. Employer's Risks**

- 11.1 The Employer is responsible for the Excepted Risks, which are
- a. Rebellion, Riot Commotion or Disorder unless solely restricted to Employees of the Contractor or his Sub Contractors arising from the Conduct of the Works; or
  - b. Deleted; or
  - c. Any Operation of the Forces of Nature (in so far as it occurs on the Site) which an Experienced Contractor

- i. Could not have reasonably foreseen; or
- ii. Could reasonably have foreseen, but against which he could not reasonably have taken at least one of the following Measures
  - Prevent Loss or Damage to Physical Property from occurring by taking Appropriate Measures or
  - Insure against such Loss or Damage.

**12. Contractor's Risks**

- 12.1 All Risks of Loss or Damage to Physical Property and of Personal Injury and Death, which arise during and in consequence of the performance of the Contract other than the Excepted Risks, are the Responsibility of the Contractor.
- 12.2 A Cause due solely to the Contractor's Design.

**13. Insurance**

- 13.1 The Contractor shall prior to commence the works, effect and thereafter maintain Insurances, in the Joint Names of the Employer and the Contractor (cover from the First Working Day after the Start Date to the End of Defects Liability Period) in the Amounts stated in the Contract Data:
- a. For Loss or Damage to the Works, Plants and Materials and the Contractor's Equipment;
  - b. For Liability of both Parties for Loss, Damage, Death and Injury to Third Parties or their Property arising out of the Contractor's Performance of the Contract including the Contractor's Liability for Damage to the Employer's Property other than the Works and
  - c. For Liability of both Parties and of any Employer's Representative for Death and Injury to the Contractor's Personnel except to the Extent that Liability arises from the Negligence of the Employer, any Employer's Representative or their Employees.
- 13.2 Policies and Certificates for Insurance shall be delivered by the Contractor to the Employer for his Approval before the Start Date. All such Insurances shall provide for Compensation to be payable to rectify the Loss or Damage incurred. All Payments received from Insurers relating to Loss or Damage shall be held jointly by the Parties and used for the Repair of the Loss or Damage or as Compensation for Loss or Damage that is not to be repaired.
- 13.3 If the Contractor fails to effect or keep in force any of the Insurances referred to in the previous Sub Clauses or fails to provide Satisfactory Evidence, Policies or Receipts, the Employer may without Prejudice to any other Right or Remedy, effect Insurance for the Cover relevant to such Default and pay the Premiums due and recover the same as a Deduction from any other Monies due to the Contractor. If no Payment is due, the Payment of the Premiums shall be a Debt Due.
- 13.4 Alterations to the Terms of Insurance shall not be made without the Approval of the Employer.
- 13.5 Both Parties shall comply with any Conditions of the Insurance Policies.

**14. Site Investigation Report**  
**Deleted.**

**15. Queries about Contract Data**  
**Deleted.**

**16. Contractor to construct the Works**

- 16.1 The Contractor shall construct the Works in accordance with the Specifications and Drawings.

**17. The Works to be completed by the Intended Completion Date**

- 17.1 The Contractor may commence Execution of the Works on the Start Date and shall carry out the Works in accordance with the Program submitted by the Contractor, as updated with the approval of the Employer, and complete them by the Intended Completion Date.

**18. Approval by the Employer**

- 18.1 The Contractor shall submit Specifications and Drawings showing the proposed Permanent and Temporary Works to the Employer, who is to approve them if they comply with the Specifications and Drawings.
- 18.2 The Contractor shall be responsible for the Design of Permanent and Temporary Works.
- 18.3 The Employer's approval shall not alter the Contractor's Responsibility for Design of the Permanent and Temporary Works.
- 18.4 The Contractor shall obtain Approval of Third Parties for the Design of the Permanent and Temporary Works where required.
- 18.5 All Drawings prepared by the Contractor for the Execution of the Permanent or Temporary Works, are subject to prior Approval by the Employer before their use.

**19. Safety**

- 19.1 The Contractor shall be Responsible for the Safety of all Activities on the Site.

**20. Discoveries**

- 20.1 Anything of Historical or other Interest or of Significant Value unexpectedly Discovered on the Site is the Property of the Employer. The Contractor is to notify the Employer of such Discoveries and carry out the Employer's Instructions for dealing with them.

**21. Possession of the Site**

Refer Clause 17 of Special Conditions of Contract.

**22. Access to the Site**

- 22.1 The Contractor shall allow the Employer and any Person authorized by the Employer Access to the Site, to any Place where Work in connection with the Contract is being carried out or is intended to be carried out and to any Place where Materials or Plant are being manufactured / fabricated / assembled for the Works.

**23. Instructions**

- 23.1 The Contractor shall carry out all Instructions of the Employer which comply with the Applicable Laws where the Site is located.

**24. Procedure for Resolution of Disputes**

- 24.1 If the Contractor is not satisfied with the Decision taken by the Employer, the Dispute shall be referred by either Party to Arbitration within 30 days of the notification of the Employer's Decision.
- 24.2 If neither Party refers the Dispute to Arbitration within the above 30 days, the Employer's Decision will be final and binding.
- 24.3 The Arbitration shall be conducted in accordance with the Arbitration Procedure stated in the Special Conditions of Contract.

## **B. Time Control**

### **25. Program**

- 25.1 Within the Time stated in the Contract Data, the Contractor shall submit to the Employer for Approval a Detailed Program showing the General Methods, Arrangements, Order and Timing for all the Activities in the Works.
- 25.2 The Employer's Approval of the Program shall not alter the Contractor's Obligations. The Contractor may revise the Program and submit it to the Employer again at any time. A revised Program is to show the Effect of Compensation Events.

### **26. Extension of the Intended Completion Date**

- 26.1 The Employer shall extend the Intended Completion Date if a Compensation Event occurs, which makes it impossible for Completion to be achieved by the Intended Completion Date.
- 26.2 The Employer shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Employer for a Decision upon the Effect of a Compensation Event and submitting Full Supporting Information.

### **27. Delays ordered by the Employer**

- 27.1 The Employer may instruct the Contractor to delay the Start or Progress of any Activity within the Works.

### **28. Management Meetings**

- 28.1 The Employer may require the Contractor to attend a Management Meeting. The Business of a Management Meeting shall be to review the Progress Achieved and the Plans for Remaining Work.
- 28.2 The Responsibility of the Parties for Actions to be taken is to be decided by the Employer either at the Management Meeting or after the Management Meeting and stated in writing to be distributed to all who attended the Meeting.

## **C. Quality Control**

### **29. Identifying Defects**

- 29.1 The Employer shall check the Contractor's Work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's Responsibilities. The Employer may instruct the Contractor to search for a Defect and to uncover and test any Work that the Employer considers may have a Defect.

### **30. Tests**

- 30.1 If the Employer instructs the Contractor to carry out a Test not Specified in the Specification to check whether any Work has a Defect and the Test shows that it does, the Contractor shall pay for the Test and any Samples. If there is no Defect the Test shall be a Compensation Event.

### **31. Correction of Defects**

- 31.1 The Employer shall give Notice to the Contractor of any Defects before the End of the Defects Liability Period, which begins at Completion and is defined in the Contract Data. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.
- 31.2 Every time Notice of a Defect is given, the Contractor shall correct the Notified Defect within the Length of Time specified by the Employer's Notice.

### **32. Uncorrected Defects**

- 32.1 If the Contractor has not corrected a Defect within the Time Specified in the Employer's Notice, the Employer will assess the Cost of having the Defect corrected, and the Contractor will pay this

Amount.

#### **D. Cost Control**

##### **33. Financial Bid**

- 33.1 The Financial Bid shall contain Items for the Construction, Installation, Testing and Commissioning Work to be done by the Contractor.
- 33.2 Deleted.

##### **34. Variations**

- 34.1 The Tenderer shall submit his Offer, which shall comply fully with the Basic Requirements of the Tender Documents as indicated in Drawings, Specifications, Terms and Conditions of the Tender.
- 34.2 All Tenderers are cautioned that no Conditional Offers, Variations or Deviations by the Tenderers in respect of any Items included in the Tender shall be entertained or considered. Furthermore, any Variations from Contract Conditions, Particular Specifications or other Requirements stipulated in the Tender Documents other than those specially clarified / amended shall be liable to be rejected as Non Responsive.

##### **35. Payment for Variations**

Deleted.

##### **36. Submission of Bills for Payment**

Refer Clause 18 of Special Conditions of Contract.

##### **37. Payments**

- 37.1 Payments shall be adjusted for deductions for Advance Payments, other than Recoveries in terms of the Contract and Taxes at source as applicable under the Law. The Employer shall pay the Contractor within 60 days of Submission of the Bill. The Contractor shall be liable to pay Liquidated Damages for Shortfall in Progress. For Progress beyond the Agreed Programme, Payment is subject to Availability of the Grants.
- 37.2 Items of the Works for which no Rate or Price has been entered in, will not be paid for by the Employer and shall be deemed covered by other Rates and Prices in the Contract.

##### **38. Compensation Events**

Refer Clause 19 of Special Conditions of Contract.

##### **39. Tax**

- 39.1 The Rates quoted by the Contractor shall be deemed to be inclusive of all Taxes, Duties and Levies including Sales Tax, Municipal Taxes, Local Taxes, Octroi, ESI, all Royalties, Patent Rights, other Incidental Charges, etc. that the Contractor will have to pay for the Performance of this Contract. The Employer will perform such Duties in regard to the Deduction of such Taxes at Source as per Applicable Law. The Rate shall also include the Cost of all Labours, Materials, Plant, Machinery, Equipments, Carriage and other Inputs involved in the Execution and Completion of the Work.

##### **40. Price Adjustment**

Deleted.

##### **41. Liquidated Damages**

- 41.1 The Contractor shall pay Liquidated Damages to the Employer at the Rate per day stated in the Contract Data for each day that the Completion Date is later than the Intended Completion Date for the whole of the Works as stated in the Contract Data. The Total Amount of Liquidated

Damages shall not exceed the Amount defined in the Contract Data. The Employer may deduct Liquidated Damages from Payments due to the Contractor. Payment of Liquidated Damages does not affect the Contractor's Liabilities.

- 41.2 If the Intended Completion Date is extended after Liquidated Damages have been paid, the Employer shall correct any Overpayment of Liquidated Damages by the Contractor by adjusting the Next Payment of Bill.

**42. Advance Payments**

**Refer Clause No. 59 of Special Conditions of Contract.**

**43. Securities**

- 43.1 The Security Deposit (including Additional Security for Unbalanced Tenders) shall be provided to the Employer no later than the Date Specified in the Letter of Acceptance and shall be issued in an Amount and Form acceptable to the Employer. The Security Deposit shall be valid until a date 30 days from the Date of Expiry of Maintenance Period of 36 months plus Claim Period of 6 months and the Additional Security for Unbalanced Tenders shall be valid until a date 30 days from the Date of Issue of the Certificate of Completion.

**44. Cost of Repairs**

- 44.1 Loss or Damage to the Works or Materials to be incorporated in the Works between the Start Date and the End of the Defects Correction Periods shall be remedied by the Contractor at the Contractor's Cost if the Loss or Damage arises from the Contractor's Acts or Omissions.

**E. Finishing the Contract**

**45. Completion**

- 45.1 The Contractor shall request the Employer to issue a Certificate of Completion of the Works and the Employer will do so upon deciding that the Work is completed.

**46. Taking over**

- 46.1 The Employer shall take over the Site and the Works within seven days of issuing a Certificate of Completion.

**47. Final Account**

- 47.1 The Contractor shall supply to the Employer a Detailed Account of the Total Amount that the Contractor considers Payable under the Contract before the End of the Defects Liability Period. The Employer shall issue a Defect Liability Certificate and certify any Final Payment that is due to the Contractor within 90 days of receiving the Contractor's Account if it is Correct and Complete. If it is not, the Employer shall issue within 90 days a Schedule that states the Scope of the Corrections or Additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Employer shall decide on the Amount Payable to the Contractor and make Payment within 60 days of receiving the Contractor's Revised Account.

**48. As Built Drawings**

- 48.1 If "As Built" Drawings are required, the Contractor shall supply them by the Dates stated in the Contract Data.
- 48.2 If the Contractor does not supply the Drawings by the Dates stated in the Contract Data, or they do not receive the Employer's Approval, the Employer shall withhold the Amount stated in the Contract Data from Payments due to the Contractor.



#### **49. Termination**

- 49.1 The Employer may terminate the Contract if the other Party causes a Fundamental Breach of the Contract.
- 49.2 Fundamental Breaches of Contract include, but shall not be limited to the following.
- a. The Contractor stops work for 45 days when No Stoppage of Work is shown on the Current Program and the Stoppage has not been authorized by the Employer.
  - b. The Contractor becomes Bankrupt or goes into Liquidation other than for a Reconstruction or Amalgamation.
  - c. The Employer gives Notice that Failure to correct a Particular Defect is a Fundamental Breach of Contract and the Contractor fails to correct it within a Reasonable Period of Time determined by the Employer.
  - d. The Contractor does not maintain a Security which is required.
  - e. The Contractor has delayed the Completion of Works by the Number of Days for which the Maximum Amount of Liquidated Damages can be paid as defined in the Contract data; and
  - f. If the Contractor, in the judgment of the Employer has engaged in Corrupt or Fraudulent Practices in competing for or in Executing the Contract.

For the purpose of this paragraph “**Corrupt Practice**” means the Offering, Giving, Receiving or Soliciting of any thing of Value to influence the Action of a Public Official in the Procurement Process or in Contract Execution. “**Fraudulent Practice**” means a Misrepresentation of Facts in order to influence a Procurement Process or the Execution of a Contract to the Detriment of the Borrower and includes Collusive Practice among Tenderers (prior to or after Tender Submission) designed to establish Tender Prices at Artificial Non Competitive Levels and to deprive the Borrower of the Benefits of Free and Open Competition.

- 49.3 When either Party to the Contract gives Notice of a Breach of Contract to the Employer for a Cause other than those Listed under Sub Clause 49.2 above, the Employer shall decide whether the Breach is Fundamental or not.
- 49.4 Notwithstanding the above, the Employer may terminate the Contract for Convenience.
- 49.5 If the Contract is terminated, the Contractor shall stop work immediately, make the Site Safe and Secure and leave the Site as soon as reasonably possible.

#### **50. Payment upon Termination**

- 50.1 If the Contract is terminated because of a Fundamental Breach of Contract by the Contractor, the Employer shall prepare Bill for the Value of the Work done Less Advance Payments received upto the Date of the Bill, Less other Recoveries Due in Terms of the Contract, Less Taxes due to be deducted at Source as per Applicable Law and Less the Percentage to apply to the Work not completed as indicated in the Contract Data. Additional Liquidated Damages shall not apply. If the Total Amount due to the Employer exceeds any Payment due to the Contractor, the Difference shall be a Debt payable to the Employer.
- 50.2 If the Contract is terminated at the Employer's Convenience or because of a Fundamental Breach of Contract by the Employer, the Employer shall prepare Bill for the Value of the Work done, the Reasonable Cost of Removal of Equipment, Repatriation of the Contractor's Personnel employed solely on the Works and the Contractor's Costs of protecting and securing the Works and Less Advance Payments received upto the Date of the Certificate, Less other Recoveries due in Terms of the Contract and Less Taxes due to be deducted at Source as per Applicable Law and make Payment accordingly.

#### **51. Property**

- 51.1 All Materials on the Site, Plant, Equipment, Temporary Works and Works are deemed to be the

Property of the Employer, if the Contract is terminated because of a Contractor's Default.

**52. Release from Performance**

- 52.1 If the Contract is frustrated by any Event entirely Outside the Control of either the Employer or the Contractor, the Employer shall certify that the Contract has been frustrated. The Contractor shall make the Site Safe and stop work as quickly as possible after receiving this Certificate and shall be paid for all Work carried out before receiving it and for any work carried out afterwards to which Commitment was made.

**F. Special Conditions of Contract**

The following Special Conditions of Contract shall be read in conjunction with the General Conditions of Contract and Instructions to Tenderers as an Extension and not in Limitation of the Obligations of the Contract. In case of Discrepancy between these Special Conditions of Contract and the General Conditions of Contract, the decision of the Employer shall be final and binding on the contractor.

1. The Eligible Tenderer shall submit his Tender for the Work on Turn Key Lump Sum Basis based on his own Design. In this connection, **Section 6** on the "Scope of Work" may be referred.
2. Work shall not be sub let.
3. The Contractor is not to vary or deviate from the Drawings, Specifications, Stipulation, Conditions of Contract or Instructions to execute any work of any kind whatsoever unless so authorized by the Employer in writing.

**4. Setting out**

The Contractor is to set out the whole of the Work in conjunction with an Officer to be deputed by the Employer and during the Progress of the Works to amend on the requisition of the Employer any errors, which may arise therein and provide all the necessary Labour, Materials and Equipments for doing so. The Contractor is to provide all Tools, Plant, Machinery, Labour, and Materials, which may be necessary and required for the Work. All Materials and Workmanship shall conform to the Relevant Specifications mentioned in the Tender Documents.

**5. Labour**

The Contractor shall make his own Arrangements for the Engagement of all Staff and Labour, Local or Other, and for their Payment, Housing, Feeding and Transport.

The Contractor shall, if required by the Employer, deliver to the Employer a Return in Detail, in such Form and at such Intervals as the Employer may prescribe, showing the Staff and the Numbers of the Several Classes of Labour from time to time employed by the Contractor on the Site and such other Information as the Employer may require.

**6. Compliance with Labour Regulations**

During Continuance of the Contract, the Contractor shall abide at all times by all existing Labour Enactments and Rules made there under, Regulations, Notifications and Bye Laws of the State or Central Government or Local Authority and any other Labour Law (including Rules), Regulations, Bye Laws that may be passed or Notification that may be issued under any Labour Law in future either by the State or the Central Government or the Local Authority. The Contractor shall keep the Employer Indemnified in case any action is taken against the Employer by the Competent Authority on Account of Contravention of any of the Provisions of any Act or Rules made there under, Regulations or Notifications including Amendments. If the Employer is caused to pay or reimburse, such Amounts as may be necessary to cause or observe, or for Non Observance of the

Provisions Stipulated in the Notifications / Bye Laws / Acts / Rules / Regulations including Amendments, if any, on the part of the Contractor, Employer shall have the Right to deduct any Money due to the Contractor including his Amount of Security Deposit. The Employer shall also have Right to recover from the Contractor any Sum required or estimated to be required for making Good the Loss or Damage suffered by the Employer. The Employees of the Contractor in no case shall be treated as the Employees of the Employer at any point of time.

7. **Protection of Environment**

The Contractor shall take all Reasonable Steps to protect the Environment on and off the Site and to avoid Damage or Nuisance to Persons or to Property of the Public or others resulting from Pollution, Noise or other Causes arising as a Consequence of his Methods of Operation. During Continuance of the Contract, the Contractor shall abide at all times by all Existing Enactments on Environmental Protection and Rules made there under, Regulations, Notifications and Bye Laws of the State or Central Government, or Local Authorities and any other Law, Bye Law, Regulations that may be passed or Notification that may be issued in this respect in future by the State or Central Government or the Local Authority.

8. **Taxes and Duties**

The Lump Sum (L.S.) Amount for which the Tender is approved shall be inclusive of all Expenses for the proper and entire Completion of the Work and shall be inclusive of all Taxes, Duties and Levies including Sales Tax, Municipal Taxes, Local Taxes, Octroi, all Royalties, Patent Rights, other Incidental Charges, etc. The Tenderer may consider Taxes, Duties, Royalties, etc. for the Purpose of Tendering prevailing one month earlier to the Date of Submission of the Tender. Subsequent Changes affected either by Government of Karnataka or Government of India, the Employer may consider Reimbursement of such Increase in the Taxes, Duties, Royalties, etc. upon proper Certification from Appropriate Tax Authorities. Any Reduction in Taxes, Levies, Royalties, etc. either by Government of Karnataka or Government of India, the Tenderer shall reimburse difference in such reduction to the Employer.

9. **Site Visit**

The Tenderer shall, prior to submitting the Tender for the work, examine the Drawings, Conditions of Contract and Specifications of Work. He shall visit the Site and ascertain and satisfy himself regarding Actual Climate and Physical Conditions of the Site, Nature, Extent and Practicability of Work, Means of Communication and Access to Site, Availability of Materials, the Extent of Leads and Lifts involved in the Work over the entire Duration of the Contract including Local Conditions, Probable Site for Labour Camps, Stores, Godowns, Casting Yard, Traffic Diversion, etc. The Tenderer's Offer shall take into Consideration all such Factors. The Tenderer shall himself obtain all necessary Information at his Risk, Contingencies and other Circumstances, which may affect or influence his Tender. No Extra Charges consequent of any Misunderstanding or otherwise shall be allowed. The expression 'Site' as stated above shall include the Construction Site of the Grade Separators including all Components described in the Scope of Work.

10. **Arbitration (Clause 24)**

10.1 The Procedure for Arbitration shall be as follows.

- a. In case of Dispute or Difference arising between the Employer and the Contractor relating to any Matter arising out of or connected with this Agreement it shall be settled in accordance with the Arbitration and Conciliation Act 1996. The Disputes or Differences shall be referred to a Sole Arbitrator. The Sole Arbitrator shall be appointed by Agreement between the Parties; failing such Agreement, by the Appointing Authority (any one of the Organizations as per list enclosed in **Annexure A**).
- b. Arbitration Proceedings shall be held at Bangalore, Karnataka, India.
- c. The Cost and Expenses of Arbitration Proceedings will be paid as determined by the

Arbitrator. However, the Expenses incurred by each Party in connection with the Preparation, Presentation, etc. shall be borne by each Party itself.

- d. Performance under the Contract shall continue during the Arbitration Proceedings and Payments due to the Contractor by the Employer shall not be withheld, unless they are the Subject Matter of the Arbitration Proceedings.

11. Type of the Foundation shall be of suitable type (Pile Foundation / Open Foundation). However, there may be Instances where Pile Foundation is not Feasible (e.g. due to Presence of Rock at Shallow Depth or, Presence of a Utility), in which case he may be asked to redesign that Foundation as an Open Foundation.

In case of Failure of any Pile in the Routine Load Test, the Additional Cost on account of Remedial Measures including the Consultant's Fee for suggesting Remedial Measures shall be borne by the Contractor and no claim shall be entertained on this account.

12. The Tender Documents loaded in the e – Procurement Portal, Tender Terms arrived at during Process of Clarifications together with the Letter of Acceptance thereof, shall constitute a Binding Contract between the Successful Tenderer and the Employer and shall form the Foundation of the Rights and Obligation of both the Parties.
13. The Several Documents forming the Contract are to be taken as mutually explanatory of one another, Detailed Drawings being followed in preference to Small Scale Drawings and Figured Dimensions in preference to the Measured Ones. Special Conditions shall be followed in preference to General Conditions / Clauses of the Contract. Particular Specifications shall be followed in preference to General Specifications applicable to the Contract.
14. In case of Discrepancy / Inconsistency between the Description in the Scope of Works, Specifications, Nomenclature of Items and / or the Drawings, Conditions of Contract, Pre Qualification Document and if there are Varying or Conflicting Provisions made in any Document forming Part of the Contract, the Employer shall be the Deciding Authority with regard to the Intention / Interpretation of the Document and his Decision shall be final and binding on the Contractor without any reservations.
15. The Right to carry out the Work either in Conformity with or in a Manner entirely different from the Terms of this Tender Document that may be considered most suitable before or subsequent to the Receipt of Tenders due to Exigencies of Work is reserved with the Employer.
16. Any Error in Description or any Omissions there from, shall not vitiate the Contract or release the Contractor from the Execution of the whole or any part of the Works comprised therein according to Drawings and Specifications or from any of his Obligations under the Contract.
17. **Possession of the Site (Clause 21)**  
The Employer shall give the possession of the Site to the Contractor based on the mutually agreed Construction Schedule between the Employer and the Contractor. If Possession of a Part is not given as per the mutually agreed Schedule then the Employer will assess the Probable Delay that may arise due to non availability of that particular part of Site to the Contractor.
18. **Submission of Bills for Payment (Clause 36)**
- 18.1 The Intermediate Billing Schedule shall be decided and mutually agreed upon by the successful Tenderer and the Employer on the basis of the Priced Bill of Quantities to be submitted by the successful Tenderer and shall be in accordance with **Annexure B** within Reasonable Alteration. Intermediate Payments shall be made on the Basis of Work assessed by the Employer which will

- be made on the basis of Quantum of total Work involved as per Intermediate Billing Schedule and Quantum of Work actually executed at a particular Point of Time (within that stage) for such items. The Decision of the Employer shall be final and binding for this Purpose.
- 18.2 The Contractor shall submit to the Employer Running Bills based on the Value of the Work completed as per the Percentage of Break up of Lump Sum Cost less the Cumulative Amount Paid previously amounting not less than Rs. 1000.00 Lakh net.
- 18.3 The Employer shall check the Contractor's Bill and determine the Value of the Work executed which shall comprise of Value of the Bill of Quantities based on the Percentage of Break up of Lump Sum Cost Completed.
- 18.4 The Employer may exclude any Item paid in a Previous Bill or reduce the Proportion of any Item previously Paid in the Light of Later Information.
- 18.5 It shall be accepted as a Condition of the Contract that the Payment of the Final Bill of the Contractor, less the Withheld Amount and his Acceptance thereof shall constitute a Full and Absolute Release of the Employer from all further Claims by the Contractor under the Contract.
- 18.6 All Bills shall be prepared by the Contractor for submission, in the Prescribed Format or Typed Forms viz. Form 33A and 33B of PWD, which have to be procured by the Contractor and got approved by the Employer before presenting the same.
19. **Compensation Events (Clause 38)**
- 19.1 The following are the Compensation Events for Time Extension only unless they are caused by the Contractor. In any case, these Compensation Events shall not entitle the Contractor to claim financially whatsoever.
- The Employer does not give Access to a Part of the Site as per the mutually agreed Construction Schedule between the Employer and the Contractor.
  - The Employer orders a Delay or does not approve Drawings, Specifications or Instructions Required for Execution of Works on time.
  - The Employer instructs the Contractor to uncover or to carry out Additional Tests upon work which is then found to have no Defects.
  - The Employer gives an Instruction for dealing with an Unforeseen Condition, caused by the Employer, or Additional Work required for Safety or other Reasons.
  - The Effect on the Contractor of any of the Employer's Risks.
  - The Employer unreasonably delays issuing a Certificate of Completion / Scheduled Payment.
  - Other Compensation Events listed in the Contract Data or mentioned in the Contract.
- 19.2 If a Compensation Event would prevent the Work being completed before the Intended Completion Date, the Intended Completion Date may be extended. The Employer shall decide whether and by how much the Intended Completion Date shall be extended.
- 19.3 The Contractor shall not be entitled to Compensation to the Extent that the Employer's Interests are adversely affected by the Contractor not having given Early Warning or not having cooperated with the Employer.
20. Time is the Essence of the Contract and it shall be clearly understood that the Contractor is bound to complete the Work in every respect within the Intended Completion Period as stated in the Contract Data.
21. Within ten days from the Date of Signing the Agreement, the Contractor shall submit to the Employer for his Approval, a Time and Progress Chart in direct relation to the Intended Completion Period stated in the Contract Data for Completion of the Items or Groups of Items of Work and for the Contract as a whole. It shall indicate the Procedure and Method in which the Work is proposed to be carried out, the Forecast of the Dates of Commencement and Completion of Various Grades or Sections and the Arrangements regarding Constructional Plant and Temporary Works, which the Contractor intends to make. The Programme of Work may be amended as and

when necessary by agreement between the Employer and the Contractor within the Limitations of Time imposed by the Contract Documents.

- a. The Total Work to be executed shall be divided into seven to ten Milestones on mutually agreed Schedule between the Employer and the Contractor. These Milestones shall be based on Financial Progress in concurrence with respective Physical Progress. Progress of Work will be reviewed monthly / at the end of each Milestone. In case the Progress achieved falls short by more than 25% of the Cumulative Programme, the Reasons for such Shortfall shall be examined and a Record made thereof apportioning the Responsibilities for the Delay between the Contractor and the Employer. This Record shall be signed in full and dated by both the Employer and the Contractor.
- b. In respect of the Shortfall in Progress (reviewed monthly / at the end of the each Milestone), assessed as due to the Delay on the Part of the Contractor, the Contractor shall be Liable to pay as Penalty an Amount equal to **1%** of the Estimated Cost of the Balance Work assessed according to the Programme, for every day that the due Quantity of the Work remains incomplete provided always that the Total Amount of Penalty to be paid under the Provisions of this Clause shall not exceed **10%** of the Lump Sum Contract Value as quoted by the Contractor. In case the Contractor picks up the Progress and completes all Works as per Tender within the Intended Completion Period, the Entire Amount so recovered above will be returned back to the Contractor without any Interest. The Time of Completion is to be certified by the Committee formed for this Purpose by the Employer.

22. On the basis of Project Scheduling, the Contractors shall also supply Monthly Bar Chart for Completion of each Item of Work and other necessary Information for monitoring the Progress of the Work. The Contractor shall also supply suitably Updated Monthly Bar Charts, etc. incorporating inter alia the Decision taken during Site Inspections / Review Meetings.

23. The Approval of the above Programme by the Employer shall not absolve or relieve the Contractor of any of his Responsibilities to complete the whole of the Works by the Intended Completion period or Extended Completion Period, if any.

24. **Progress of Work**

The Contractor shall give the Employer on the 4<sup>th</sup> Day of each Month a Progress Report of the Work done during the Previous Month.

The Progress of Work will be reviewed periodically by the Employer with the Contractor and Shortfalls, if any sorted out, the Contractor shall thereupon take such Action as may be necessary to bring back his Work to Schedule without any Additional Cost to the Employer by employing Overtime Operations, increasing the Number of Shifts, Capacity of the Equipment or otherwise as directed by the Employer and nothing shall be paid extra.

25. **Drawings to be kept at Site**

The Required Sets of the Drawings as approved by the Employer shall be kept by the Contractor at the Site and the same shall at all reasonable time be available for Inspection and Use by the Employer and his approved Representative and any other person authorized by the Employer in writing.

26. **Inspection of Works**

In addition to the Provisions of Relevant Clauses of the Contract, the Work shall also be open to Inspection by the Employer and his approved Representative. The Contractor shall at all times during the Usual Working Hours and at all times at which Reasonable Notices of the Intention of

the Employer or his approved Representative as stated above to visit the Works shall have been given to the Contractor, either himself be present to receive the Orders and Instructions or have a responsible Site Engineer duly accredited in writing, to be present for that Purpose.

**27. Foreign Exchange**

It shall be clearly understood that no Foreign Exchange shall be made available for the Purpose of Equipment, Plants, Machinery or Materials of any kind or any other Items / Purposes required to be carried out in Execution of the Work. It shall be clearly understood that no Foreign Exchange required for importing Equipments, Materials for Tools, Plants and Machinery, etc. that may be required in carrying out the Work, even from the Rupee Payment Country will be made available.

**28. Night Work**

For Completing the Work well within the Intended Completion Period, the Contractor might be required to work in two or more Shifts (including Night Work) and no Claim whatsoever shall be entertained on this account, notwithstanding, the Fact that the Contractor will have to pay to the Labours and other Staff engaged directly or indirectly on the Work according to the Provisions of the Labour Regulations and the Agreement entered into and for Extra Amounts towards any other Reason. None of the Permanent Works shall be carried out during Night or on Authorized Public Holidays without the permission in writing of the Employer except when Work is unavoidable or absolutely necessary for the Safety of Life, Property or Work in which case the Contractor shall immediately advise the Employer accordingly, provided that the Provisions of this Condition shall not be Applicable in the case of any Work which is customary to carry out by Rotation or in Double Shift.

**29. Existing Services**

Existing Drains, Pipes, Cables, Overhead Wires, Sewer Lines, Water Lines and similar Services encountered in the Course of the Execution of the Work shall be protected / maintained against the Damage by the Contractor. The Contractor shall not store Materials or otherwise occupy any part of the Site in a manner likely to hinder the Operation of such Services. In case Temporary Shifting of such Services is required to facilitate the Work, the Contractor at no Extra Cost shall do the same.

30. No Work shall be covered or put out of View without the Approval of the Employer or his approved Representative and the Contractor shall afford Full Opportunity for Examination of such Services before these are permanently installed or extended thereof as per Site Requirement.

31. No Accommodation is available at the Site of Work for Office, Residence, Labour, Store, etc. and the Contractor has to make his own Arrangement and no Claim whatsoever on this account shall be entertained.

32. The Contractor shall make his own arrangement for the Disposal of the Spoils from the Works to such Place where the same shall not cause Nuisance and shall be acceptable to the Authorities concerned.

33. The Execution of any Items of Work where any Incidental Work is actually required but not specifically stated in the Tender Document, it is to be understood that the Amount quoted by the Contractor shall cover such Charges also and nothing extra on account of such Incidental Charges, if any, shall be paid.

34. The Contractor shall make his own arrangement at his own Cost for the Provision of Telephone Facilities at the Site of Works or at any other place.

35. The Electric and Water Connections to be obtained for use of the Work under the Contract are subject to the following Conditions.
- The Contractor shall make his own arrangement for Electricity and Water Supply. However, the Employer will assist the Contractor to get Power from the concerned Department at the Contractor's Cost.
  - The Employer shall in no way be Responsible for any Delay in getting the Electric Connection and Water and no Claim on this account whatsoever, shall be entertained. It shall be clearly understood that the Contractor has to make his own Arrangement for Generators for use before the Electric Connection is made available and also to be used as a Standby Arrangement in case of Power Failure, etc. or in the case of Disconnection of Electric Supply by the concerned Department for any reason.
36. No Payment will be made to the Contractor for Damage caused by Rains, or other Natural Calamities or Accidents or Acts of God, during the Execution of the Works and no such Claim on this account will be entertained.
37. The Contractor is required to submit Rates of all Items he has used to derive the Tendered Price inclusive of Cost of all Labour, Materials, Plant, Machinery, Equipments, Carriage and other Inputs, Taxes, Royalties, etc.
38. The Contractor shall maintain in Good Condition all Work till the Completion of entire Work allotted to him. From the Commencement of the Work to the Completion of the same, the Work is to be under the Contractor's Charge. The Contractor is to be held Responsible for and to make good all Injuries, Damages and Repairs, rendered necessary by Fire, Rain, Traffic, Floods or other Causes. The Employer shall not be held Responsible for any Claims for Injuries to Personal Workmen or for Structural Damage to Property happening from any Neglect, Default, Want of Proper Care or Misconduct on the Part of the Contractor or of any other of his authorized Representatives in his Employment during the Execution of the Work. The Compensation, if any, shall be paid directly to the Department / Authority / Persons concerned by the Contractor at his own Cost.
39. The Contractor will take all Necessary Measures for the Safety of Traffic and Workers during Construction and provide, erect and maintain such Barricades, including Signs, Markings, Flags, Lights and Skilled Flagmen, as necessary, all around the Excavation / Construction Area and at such Intermediate Points, as directed by the Employer including the Proper Identification of the Construction Areas. He shall be Responsible for all Damages and Accidents on account of Construction and other Relevant Activities. Nothing shall be paid extra on account of above.

The Temporary Warning Signs / Lamps shall be installed at all Barricades during the Hours of Darkness and kept lit there at all times during these hours and nothing shall be paid extra.

Barricading and Safety Requirements are very Important Aspects at this Portion of the Road. The above Provisions shall be followed strictly and at no time the Construction / Excavation Areas are to be left Unbarricaded or without Red Lamps during the Hours of Darkness. Failure to comply with the Requirements mentioned in the Preceding Paragraphs shall be deemed to be a Breach of Contract on the Part of the Contractor for which the Contractor shall be Liable to action under Relevant Clauses / Conditions of the Agreement.

In addition to other Actions being taken for such Breach of Contract, the Contractor shall be liable to pay compensation @ Rs.1000/- per Sqm of Area left Unbarricaded.

The Employer shall give Notice to the Contractor for such Barricade and the Contractor shall



comply with the same within one day of such Notice failing which he shall be liable to pay the above Compensation and Actions for the said Breach of Contract. The Decision of the Employer in respect of the above shall be final and binding.

The Contractor shall use every Reasonable Means to prevent any of Roads, Bridges communicating with or on the Routes to the Site from being damaged by any Traffic of the Contractor or any of his Sub Contractors and in particular, shall select Routes and Vehicles to avoid such Unnecessary Damages.

40. All Arrangements for Traffic Diversion during Construction including Maintenance thereof (within the Battery Limits) shall be considered as Incidental to the Work and Contractor's Responsibility. The Contractor shall obtain Necessary Approval of the Diversion Plans from the concerned Authorities. The Contractor's Turn Key Lump Sum Quoted Rate shall also be inclusive of any Incidental Work required for providing Adequate Carriageway Width to Traffic as acceptable to the Authorities.

41. **Safety of Workers**

In respect of all Labour directly or indirectly employed in the Work for the Performance of the Contractor's Part of this Agreement, the Contractor shall at his own Expense arrange for the Safety Provisions as per Indian Standard Safety Codes (Latest Edition) shown below and shall at his own Expense provide all Facilities in connection there with. In case, the Contractor fails to make Arrangement and provide Necessary Facilities as aforesaid, he shall be liable to pay **Rs. 10000/-** per Day for each day of Delay from the Date of Notice issued to the Contractor in this regard and in addition the Employer shall be at liberty to make Arrangement and provide Facilities as aforesaid and recover the Cost incurred on that behalf from the Contractor, and no Claims whatsoever shall be entertained.

- |       |  |  |
|-------|--|--|
| i.    | IS: 3696 (Part I)  | Safety Code for Scaffolds and Ladders                                  |
| ii.   | IS: 3696 (Part II)   | Safety Code for Scaffolds and Ladders, Part II Ladders                 |
| iii.  | IS: 3764   | Safety Code for Excavation Work  |
| iv.   | IS 4081  | Safety Code for Blasting and Drilling Operations                       |
| v.    | IS: 4138   | Safety Code for Working in Compressed Air                              |
| vi.   | IS: 5121   | Safety Code for Piling and other Deep Foundations                      |
| vii.  | IS: 5916   | Safety Code for Construction involving Use of Hot Bituminous Materials |
| viii. | IS: 7293   | Safety Code for Working with Construction Machinery                    |
| ix.   | IS: 7969   | Safety Code for Storage and Handling of Building Materials             |
| x.    | Any other Code and / or as per Directions of the Employer. |  |

42. The Employer shall have full powers to send Workmen and employ on the Premises to execute Fittings and other Work not included in the Contract. For whole Operations, the Contractor is to afford every Reasonable Facility during Ordinary Working Hours provided that such Operations shall be carried on in such a manner so that not to impede the Progress of the Work included in this Contract in the opinion of the Employer.

43. The Contractor shall conduct his Work so that not to interfere with or hinder the Progress or Completion of the Work being performed by other Contractors, Piece Workers or by the Employer and shall as far as possible arrange his Work and shall place and dispose the Operations of the other Contractors, Piece Workers, or of the Employer. The Contractor shall arrange his Work with that of the others in an Acceptable Manner and shall perform it in Proper Sequence to the complete Satisfaction of the Employer at the Contractor's own Cost.

44. The Contractor shall assume all Liabilities, Financial or otherwise in connection with his Contract and shall protect and save the Employer from any and all Damages and Claims that may arise because of the Presence and Operations of others working on or near the Site. The Contractor shall assume all Responsibilities for all Work not completed or accepted because of the Presence and Operations of other Contractors or Piece Workers or of the Employer.
45. At the time of Construction, the Contractor shall embed all Electrical / other Fixtures like Base Plates, Brackets, Conduits, etc. for Street Lighting, etc. as per the Directions of the Employer. Nothing Extra whatsoever will be payable on this account.
46. For execution of any Items of Work where Incidental Works such as Bailing out Water, Shoring, etc. are actually required but not specifically stated in the Tender, it is to be understood that the Lump Sum Amount quoted by the Contractor shall cover such Charges also and nothing Extra on account of such Incidental Charges, if any, shall be paid.
47. **No Waiving of Legal Rights and Powers**  
The Employer shall not be precluded or stopped from taking any Measurements and Framing of Estimates or Detaining any Certificates made either before or after the Completion and Acceptance of the Work and Payment, from showing the True Amount and Character of the Works Performed and Materials furnished by the Contractor and from showing that any such Measurements, Estimates or Certificates Untrue or incorrectly made and that the Employer shall not be precluded or stopped from recovering from the Contractor and such Damages as it may be sustained by Reasons of his Failure to comply with the Terms and Conditions of the Contract. Neither the Acceptance by the Employer nor any Payment for Acceptance of the whole or any part of the Work nor any Extension of Time nor any Possession taken by the Employer shall operate as a Waiver of any Portion of the Contract or any Power herein reserved or of any Risk to Damage. A Waiver of any Breach of the Contract shall not be held to be a Waiver of any other or subsequent Breach.
48. The Contractor shall provide and bear all Expenses and Charges for Special or Temporary Service Roads required by him in Connections with Access to the Site at no Extra Charges and his Lump Sum Offer shall deem to include the same. He shall alter, adopt or maintain the same as required from time to time or as directed by the Employer. The Employer shall have Right of Way to this at all times and will not entitle the Contractor to claim Extra on this account.
49. The Tenderers shall also mention with their Tender Documents the Name of their Project Managers, Work Managers, Graduate Engineers who shall be engaged in this Work. The Biodata of such Engineers / Managers are to be enclosed with the Tender Documents.
50. The Tenderers may specify the Number and Category of each type of Skilled Personnel to be deputed by the Contractors. It may clearly be stated that whether such Skilled Persons are under the Employment of the Tenderers or are still to be appointed by them. The Number of Skilled and Unskilled Persons to be employed shall be in agreement with the Programme of Work submitted by the Tenderers and discussed elsewhere in the Tender Documents.
51. The Tenderers shall specify the Details of Plant and Machinery to be deployed by them for the Work. The Details to be supplied by them shall be in respect of the following.
- i. Source of Ready Mix Concrete (RMC) Suppliers and their rated Capacity in cum / hr.
  - ii. Loaders.
  - iii. Tippers with adequate Capacity to suit Site Conditions and Construction Schedule.
  - iv. Dumpers.
  - v. Trucks.

- vi. Transit Mixers.
- vii. Vibrators (Needle, Surface and Shutter).
- viii. Compressors.
- ix. Multistrand Pre Stressing Jacks.
- x. Grouting Equipment and Accessories.
- xi. Hydraulic Jacks (Capacity and Nos.).
- xii. Concrete Pumps (expected total Capacity – 50 cum / hr. of 2 Nos.)
- xiii. Hydraulic Rotary Rig of minimum 1000mm diameter.
- xiv. Cranes (expected minimum 1 No. of 50T Capacity).
- xv. Excavators (expected total Capacity – 200 cum / hr., Capacity, Nos.).
- xvi. Road Construction Machinery.
- xvii. Batch Mix Plant (expected minimum 1 No. of 100 – 120 TPH Capacity).
- xviii. Generators.
- xix. Water Pumps – Number and their Capacity.
- xx. Trailer Trucks and any other Equipment.

52. The Tenderers shall furnish a Cash Flow Chart on month – to – month basis for the entire Period of Execution of the Work. The Cash Flow Chart shall indicate specifically the Investments on Items such as Plant and Machinery, Shuttering and Staging, Materials mentioning Various Items like other Pre Stressing Materials, Sand, Grit and other Consumables. The Cash Flow shall indicate in Detail, the Inputs to be mobilized by the Contractor from his own Sources e.g. own Capital, Bank Loans, etc. and Resources to be supplemented by the Employer like Mobilization Advance and Interim Payments against the Work done by the Contractor.

The above mentioned Cash Flow shall have Direct Relation with the Programme of Work and it shall be in consonance thereto. Any Inconsistency between the Inputs / Outputs of this Cash Flow and Programme of the Work may lead to the Disqualification of the Tenderer on this account.

Similarly, after Award of the Contract also the Contractor shall submit Similar Cash Flow Programmes and update such Details at monthly intervals for monitoring of the Project by the Employer.

53. The Contractor is expected to have a Workshop Facility available at Site for Fabrication / Additions and Alterations to the Shuttering, Pre Stressing Works and or other Allied Works. It may please be indicated that whether the Workshop Facilities shall be provided in house or is proposed to be subcontracted locally. In both the cases, the Tenderer is to give the Details and Number of Equipments to be installed in the Workshop for above mentioned Work.
54. The Employer might deploy Project Management Consultant (PMC) for Design Checking and Approval, Supervision, Quality Control, Progress Monitoring, etc. The Contractor shall abide by the Instructions / Suggestions given by the PMC for the successful completion of the Project.
55. **Interference with Traffic and Adjoining Properties**
- a. All Operations necessary for the Execution and Completion of the Works and the Remedying of any Defects therein shall, so far as Compliance with the Requirements of the Contract Permits, shall be carried out so that not to interfere unnecessarily or improperly with the following.
    - i. The Convenience of the public, or
    - ii. The Access to, Use and Occupation of Public or Private Roads and Footpaths or of Properties whether in the Possession of the Employer or of any other person.
  - b. In case any Operation connected with the Traffic necessitates Diversion, Obstruction or Closure of any Road, Railway or any other Right of Way, the Approval of the Employer and the

Concerned Authorities shall be obtained well in advance by the Contractor.

**56. Avoidance of Damage to Roads**

The Contractor shall use every Reasonable Means to prevent any of the Roads, Bridges communicating with or on the Routes to the Site from being damaged, injured by any Traffic of the Contractor or any of his Sub Contractors and in particular, shall select Routes, choose and use Vehicles and restrict and distribute Loads so that any such Extraordinary Traffic as will inevitably arise from the Moving of Materials, Plant, Contractor's Equipment or Temporary Works from and to the Site shall be limited, as far as reasonably possible, and so that no Unnecessary Damage or Injury may be occasioned to such Roads and Bridges.

**57. Transport of Contractor's Equipment or Temporary Works**

- a. The Contractor shall be Responsible for and shall pay the Cost of Strengthening any Bridges or altering or improving any Road communicating with or on the Routes to the Site to facilitate the Movement of Contractor's Equipment or Temporary Works and the Contractor shall indemnify and keep indemnified the Employer against all Claims for Damage to any such Road or Bridge caused by such movement, including such Claims as may be made directly against the Employer, and shall negotiate and pay such Claims arising solely out of such Damage.
- b. If it is found necessary for the Contractor to move one or more Loads of Heavy Constructional Plant and Equipment, Materials or Precast Units or Parts of Units of Work over Roads, Highways, Bridges on which such Oversized and Overweight Items are not normally allowed to be moved, the Contractor shall obtain Prior Permission from the Concerned Authorities. Payments for complying with the Requirements, if any, for Protection of or Strengthening of the Roads, Highways or Bridges shall be made by the Contractor and such expenses shall be deemed to be included in his Contract Price.

**58. Unpriced Bill of Quantities**

- i. The Contractor shall furnish Unpriced Bill of Quantities along with the Technical Bid in order to ascertain the Scope of Work, to enable Technical Acceptability and to ensure Completion of Work within the Stipulated Time Schedule.
- ii. The Contractor shall carry out all the Items required for the Construction of Underpass at Harlur Junction and Allied Works shall include all such Items in the Unpriced Bill of Quantities.
- iii. The Unpriced Bill of Quantities will be considered only for the General Assessment of the Tender and it shall not be deemed to contain all the Items necessary for the Successful Completion of the Project Corridor and Allied Works.
- iv. During Execution, Items other than indicated in the Unpriced Bill of Quantities, but required for Construction of Project Corridor and Allied Works shall be executed by the Contractor and the Employer shall not be liable for any Additional Payment in this regard.

**59. Advance Payments (Clause 42)**

- i. The Employer shall make Payment to the Contractor of the Amounts stated in the Contract Data by the Date stated in the Contract Data, against provision by the Contractor of an Unconditional Bank Guarantee in a form acceptable to the Employer issued by a Nationalized / Scheduled Bank in Amounts equal to the Advance Payment. The Guarantee shall remain Effective until the Advance Payment has been repaid, but the Amount of the Guarantee shall be progressively reduced by the Amounts repaid by the Contractor. The Advance payment Amount will be recovered by the Employer in five (5) equal Installments from the Running Account Bill of the Contractor. Interest will not be charged on the Advance Payment.
- ii. The Contractor is to use the Advance Payment only to pay for Mobilization Expenses required specifically for execution of the Works. The Contractor shall demonstrate that Advance Payment has been used in this way by Supplying Copies of Invoices or other Documents to the

Employer.

**60. Personal Protective Equipment**

The Contractor shall at all times keep and maintain an adequate supply of suitable Personal Protective Equipment, which shall be readily available for use at all times on the site and would include but not to be limited to the following Items.

- Safety Helmets.
- Hearing Protection.
- Respiratory Protection.
- Eye Protection.
- Protective Gloves.
- Safety Footwear.
- High Visibility Clothing conforming to BS EN 471 Class 3 Standards.

All Sites shall be designated as HARD HAT and SAFETY BOOTS SITES and as such an adequate supply of Safety Helmets and Safety Boots shall be kept available for use by all Staffs, Workers and Authorised Visitors to the Sites.

The Contractor shall remove from the Site any worker who consistently refuses to wear the appropriate Personal Protective Equipment.

All Workmen at Site shall be provided with Safety Helmets and Yellow / Orange Jackets. Workmen required on Site during night hours shall be provided with Fluorescent Yellow Jackets with Reflective Lopes. Workers employed on mixing Asphaltic Materials, Cement, Lime Mortars, Concrete, etc. shall be provided with Protective Footwear, Protective Goggles. Those engaged in handling any Material, which is injurious to the eyes, shall be provided with Protective Goggles. Those engaged in Welding Works shall be provided with Welder's Protective Eye Shield. Stone Breakers shall be provided with Protective Goggles and Protective Clothing and seated at sufficiently safe intervals.

**61. First Aid**

The Contractor shall maintain, at every Work Place, in a readily accessible place First Aid Appliances including an adequate supply of Sterilised Dressings, Bandages, Sterilised Cotton Wool, Eye Irritation Sterile Solution, Disposable Gloves, Ointments for Burns / Cuts, Pressure Dressings, Paper Towels, General Purpose Medicines, etc. as prescribed in the Factory Rules of the State in which the Work is being carried out. The Appliances shall be kept in good order and in large work places. They shall be placed under the charge of the Safety Officer deputed by the Contractor for this Work and the Safety Officer shall be readily available during Working Hours. In each Site Office and Location one Person, suitably trained in First Aid, shall be available at all Working Hours for the purpose of attending to emergencies.

**62. Fire Precautions**

The Contractor shall be responsible for supplying and maintaining adequate Fire Precaution Facilities on all the Work Sites. The following minimum Standards shall be adhered to.

- The Contractor shall ensure that specially trained personnel are available to deal with fires due to Electrical Causes, Gas Explosions, etc.
- A Good Standard of Housekeeping shall be maintained at all times on the Sites.
- No Accumulations of Rubbish shall be allowed to gather.
- Combustible Scrap and other Construction Debris shall be disposed off site on day – to – day basis. If Scrap is to be burnt on site, the burning site shall be specified and located at a distance no less than 50m from any Construction Work or any other Combustible Materials.

- Signage shall be erected at prominent positions showing the correct use of Portable First Aid Fire Extinguishers.
- Emergency Plans and Fire Evacuation Plans shall be prepared and issued. Mock Drills shall be held on a regular basis to ensure the Effectiveness of the Arrangements.

**63. Fire Fighting Equipment**

At various locations around the Site, clearly visible Fire Points shall be established for use in an Emergency and each Fire Point should have available as a minimum the following type of Equipment.

- Dry Powder Extinguisher.
- Water Type Extinguisher.
- Bucket of Sand.

Recharging of Fire Extinguishers and their Proper Maintenance should be ensured and as a minimum should meet Indian National Standards.

The Telephone Number of the Local Fire Brigade along with other Emergency Numbers (Hospital, Police Stations, Ambulance, etc.) shall be displayed near each telephone on Site. Supervisors and Workmen at the Site should be trained in the Use of Fire Fighting Equipment provided at the Site.

**64. Storage of Flammable Liquid**

All Flammable Liquids shall be kept in a Secure Fire Resistant Store protected from Electrical Sparks, Welding Sparks, Open Flames and Smoking.

Only such amounts of Flammable Liquids shall be issued as are required for immediate use.

Cans for carrying Flammable Liquids shall be leak proof and properly stoppered and clearly marked "Flammable Liquid".

Rags soaked in Paints, Kerosene and other Flammable Liquids shall be disposed of daily under supervision. Large quantities of such rags shall not be allowed to accumulate.

All Diesel Fuel Storage Tanks shall be bunded around in order to control any Spillage or Leakage that may occur.

"No Smoking" Signs shall be prominently displayed at all areas where Flammable Materials are stored.

**65. Release of Performance Security**

50% of Performance Security shall be released only after satisfactory completion of Defect Liability Period of 24 Months and the balance 50% shall be released only after satisfactory completion of Maintenance Period of further 36 Months after Defect Liability Period.

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**Annexure A:**

**LIST OF ORGANIZATIONS WHO ARE CONSIDERED AS APPOINTING AUTHORITY  
FOR APPOINTMENT OF ARBITRATORS**

1. Indian Council of Arbitration, New Delhi.
2. International Centre for Alternative Disputes Resolution (India).
3. Indian Roads Congress.
4. Indian Building Congress.
5. Indian Institute of Bridge Engineers.
6. Indian Institute of Public Health Engineers.
7. Institute of Water Works.

## SECTION 6: SCOPE OF WORK AND DESIGN CRITERIA

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## 1.0 Scope of Work

### 1.1 General

Bruhat Mahanagara Palike (BBMP) has proposed “**Construction of Underpass On Sarjapura Road at Harlur Cross Road Junction, Bangalore**” on Turnkey, Lump Sum, Fixed Price, No Variation basis based on Tenderer’s own Design on the basis of Parameters fixed by the BBMP (Alternate Proposal is permitted and is limited to only one). The Alternate Proposal submitted by the Tenderer shall conform to the Relevant Indian and International Standards satisfying the Key Parameters fixed by BBMP and shall be approved by the Technical Advisory Committee, BBMP. The Location of the Site is described in 1.2.

**Tenderers shall submit only one Proposal. Additional Proposal / s shall result in the Disqualification of the Tenderer.**

The Turn Key, Lump Sum, Fixed Price, No Variation, Tender based on Tenderer’s Own Design shall be inclusive of Cost of Topographic Survey, Subsoil Investigation and any other Ancillary Works and Cost of all Labours, Materials, Casting Yard, Tools and Plants and Machinery required for completing the Construction of Drains including Junction Improvement and Road Works like Preparation of Sub Base, Base, Riding Surface; Construction of Medians, Islands, Road Side Kerbs, Culverts, Temporary and Permanent Retaining Structures, etc. The Works shall include all Civil, Electrical, Mechanical, all Safety Aspects and any other Works required for the Construction and Completion of the Works in all respects and to the satisfaction of the Employer. The Quoted Amount shall be inclusive of all Taxes such as Sales Tax, VAT, Octroi, Toll, Royalty, P.F., ESI, Incidental Charges, Local Taxes, Income Tax and any other Taxes wherever applicable and no Claim whatsoever on this Account shall be entertained by the Employer.

### 1.2 Site

The Harlur Road is the main road connecting Sarjapur Road and Electronic City via Kodlu Main Road. There are number of residential apartments in this road. Harlur Junction is the major junction in Sarjapur Main Road. This junction is a 3-legged (T-Type) junction without signal. The project scope of work is construction of underpass at Haralur junction (From 0+250Km to 0+660Km). The Location of the Project is indicated in **Drawing No. IS / 1402 / HIG / PL - 001**.

### 1.3 Works to be carried out

The Works to be carried out under this Turn Key, Lump Sum, Fixed Price, No Variation Contract shall include

- a. Preliminary Works like Setting out, Establishing and Maintenance of Permanent Benchmarks, Reference Points and Centre Lines of the Project Corridor and Drainage Facilities and all other Items of the Work.
- b. Clearing of Site before Commencement of Work including Dismantling and Site Clearance in the Acquired Property, if any.
- c. Topographical Survey and Setting out of Works.
- d. **Geotechnical Investigations and taking Trial Bores:** The Tenderer shall make his own Assessment and his Lump Sum Offer is for the whole Item of the Work, (All the Items described in this Tender Document and Drawings) and for any Variations observed at Site in respect of Levels and Soil Particulars, etc. The Tenderer’s offer is deemed to have been made considering the Actual Ground Conditions at Site and he shall not be eligible for any claim whatsoever. During Execution of the Work, the Contractor shall carry out Geotechnical Investigation as per IRC: 78 at Covered Portion of Underpass and at any other Locations required for the Design of the Works in conformity to the Prevailing Norms and Codal Provisions.

- e. The Successful Tenderer, on Award of Work, shall map all the Existing Service Lines, above and below the ground level within the Battery Limit, such as Water Supply, Underground Drainage, Electrical, Telephone, Optical Fibre Cables, etc. Mapping of the Service Lines below the Ground Level shall be carried out using Ground Penetrating Radar (GPR) Equipment. Mapping shall be got approved by all the respective Service Departments at the Risk and Cost of the Successful Tenderer.
- f. Relocation of Services and Tree Transplantation Works including the Cost shall be the responsibility of the Contractor. Further, all the Utility and Service Lines such as Water Supply, Underground Drainage, Electrical, Telephone, Optical Fibre Cables, etc. those are incidental and obstructing, are to be permanently diverted in an acceptable manner to the Concerned Service Departments so that not to hinder the Services of the Lines at the Cost of the Contractor. The Supervision Charges / Deposits, if any, to be payable to the Concerned Departments shall be borne by the Contractor. The Employer will only help in Liaisoning with the Concerned Authorities regarding the Need to shift the Service Lines in case of requirement. Based on his own Investigations as mentioned in the above Clause the Contractor shall make his own Plan for Provision / Diversion of the Service Lines and ascertain the entire Scope of Work and other Required Details by himself and the Employer shall not take any responsibility other than Liaisoning with the Concerned Departments as stated above. The Time Schedule of 18 (Eighteen) Months is inclusive of the Period of Utility Shifting also and no Extension of Time would be granted due to Delay in this Work. No Monetary Claim in whatsoever manner shall be entertained separately.
- g. Removal and Relocation of Existing Bus Shelters within the Battery Limit, if any, to the Location within or beyond the Battery Limit as approved by the Employer.
- h. The work includes identifying, measuring, marking, surveying, dismantling, leveling, transporting and dumping at suitable locations with all lead and lift of all existing structures including, buildings, drains, poles, walls, etc. within the proposed RoW (45.0m) as approved by the Employer.
- i. Removal and Relocation of Existing Traffic Signages and Signals within the Battery Limit, if any, to the Location within or beyond the Battery Limit as approved by the Employer.
- j. Removal and Relocation of Existing Hoardings, Advertisement Boards and Appurtenant Structures within the Battery Limit, if any, to the Location within or beyond the Battery Limit as approved by the Employer.
- k. Dismantling and Disposal of Earth / Debris of existing RCC and Masonry Structures, PCC, existing Road Pavements, RCC / SSM Drainage Structures, Tree Roots, Culverts, Medians, Kerbs, Traffic Islands, Earth Retaining Structures, Ducts, Hoarding and Advertisement Boards and Appurtenant Structures, etc. required for the Execution of the Work.
- l. Construction of Temporary and Permanent Earth Retaining Structures, Compound, Barricade, Fencing, Dewatering, Drainage Facilities and all Temporary Structures wherever required during Construction.
- m. Regrading of existing Ground Levels to achieve the required Vertical Clearance for Underpass, Drainages, etc. including Disposal of Excavated Earth and Debris to the Location identified by the Contractor where the same shall not cause Nuisance and shall be acceptable to the Authorities concerned, Construction of Temporary and Permanent Retaining Walls as per the Approval of the Employer.
- n. **Traffic Diversion:** The Contractor shall ensure that the Traffic Movement during the Construction of the Works is properly diverted, maintained and obstruction to the Traffic Movement is kept to the minimum. The Traffic Diversion with all Cost of Men and Material is to form part of the Turn Key Lump Sum Contract. The Traffic Diversion shall include but not be limited to the following.
  - Prepare Traffic Diversion Plan for different Phases of Construction and got approved from the concerned Police Department by the Contractor.

- All Necessary Arrangements required for Diversion of Traffic, Erection of Sign Boards, Cautionary Boards and Illumination, etc.
  - Provide Road Markings, Drainage System, Footpath for the Diversion Roads.
  - Provide Skilled Flagmen for Traffic Diversion as per the Requirement of Concerned Department.
  - Provide Traffic Barricades with Blinkers, Reflective Tapes, Road Delineators, Traffic Cones, Portable Signages, Reflective Lights and other necessary Traffic Signage as required, as directed by the Concerned Authorities and as per the Specification.
  - Provide required Sub Grade and Surface Treatments for the Diversion Roads based on IRC Standards before Traffic Diversion and maintain for the Smooth Flow of Traffic throughout the Construction Period as directed by the Employer.
  - After Completion of the Work, the Diversion Roads are to be rehabilitated as per IRC Standards and provided with 40mm Bituminous Concrete irrespective of other Treatments provided earlier during Pre Construction and Construction Period of the Work.
  - It is the responsibility of the Contractor to work out the actual Traffic Diversion Schedule in concurrence with the Requirements of the Concerned Department and execute the same during different phases of Construction.
  - Pedestrian Facilities shall be provided for Diverted Roads and the Plan for Pedestrian Facilities shall be got approved from the concerned Police Department by the Contractor.
- o. **Barricade around the Construction Area**
- The Contractor shall be required to keep the Site as Safe and Secure as possible at all times, including the Erection of Site Perimeter Hoarding, which shall also deter trespassers both adult and children alike, as per the Approval of the Employer.
  - The Contractor shall provide a solid two-meter-high securely erected Barricade including Lights over Barricades at night around the perimeter of the Site as per the Approval of the Employer, with Agreed and Guarded Access and Egress Points for both personnel and vehicles.
  - At each entrance to the Site, the Contractor shall erect a large Billboard warning all persons who enter the Site that they are required to wear the Appropriate Personal Protective Clothing and that no Unauthorised Access is allowed.
  - Wherever the Barricade borders on Pedestrian Footpath, Lightings shall be provided to illuminate the Pedestrian Routes. The Positioning of the Barricade Line shall not reduce the Width of Pedestrian Footpath to less than 900mm.
  - Site Perimeter Barricade shall be washed at least once a month and repainted at least annually.
  - The Site Barricade shall need to be inspected on a regular basis in order to ensure that the Integrity of the Fencing is maintained at all times as far as practicable.
- p. Providing and Erecting Project Information Display Board (minimum size 2.5m X 1.5m) at different locations in and around the Project Area as approved by the Employer.
- q. The Successful Tenderer, on Award of Work, shall coordinate with KPWD, NHAI, Traffic Police, BDA, BESCOM, BSNL, BWSSB, BMRCL, KPCL, BBMP and other Agencies associated with the Construction of Works and comply with their Requirements. The Employer will provide assistance only.
- r. Construction of Underpass including Covered Portion, Retaining Walls, Approach Arms, Drainage for Underpass including Catch Drain, Backfill and Soil Stabilisation behind Retaining Walls, Filter Media, Kerbs, Crash Barriers, Wearing Coat, Water Proofing, Footpath, Hand Rails to Crash Barriers and Footpath, Expansion Joints, Painting, Illumination inside the Underpass, Approach Arms and at Grade, etc. complete in all respects as per MoRT&H / IRC / BIS Specifications

- s. Construction of Slip Roads and other Roads at Grade Level including Widening of Carriageway; Junction Improvements; Construction of Retaining Wall; Construction of Compound; Footpath with Heavy Duty Cobble Stone 60mm thick Interlock Pavers of Approved Size, Shape and Colour with a minimum Compressive Strength of 281 kg / Sqm; Hand Rails; Drains; Medians; etc. complete in all respects as per MoRT&H / IRC / BIS Specifications. The Scope shall include all the above Works within the Battery Limit. The Battery Limits for the Junctions are indicated in **Drawing No. IS / 1402 / HIG / PL - 001** for Harlur Junction.
- t. Providing Gantry, Traffic Signals, Traffic Signages, Road Marking and Granite Tablets along with necessary Pedestals, Foundation Stone, Stone for Inauguration Ceremony as per Specifications and as per the Approval of the Employer.
- u. Necessary Drainage Arrangement as per Specification. The Levels and Dimension Details for Drainage Arrangement shown in the Tender Drawing are only indicative. The Contractor shall carry out the required Hydraulic Study and work out the Levels and Dimension Details for Drainage Arrangement based on the Hydraulic Study and get the Drawing approved by the Employer before Execution.
- v. Set up of Field Laboratory.
- w. Adequate Street Lighting / Junction Lighting Arrangements as approved by the Employer during Construction.
- x. Removal / Disposal: Removal / Disposal of Excess / Disused Earth, Soils, Debris and Materials from the Construction Site. Further, it is the responsibility of the Contractor to identify the Dumping Yard Location and to dispose the Excess / Disused Earth, Soils, Debris and Materials to the same identified Dumping Yard where the same shall not cause Nuisance and shall be acceptable to the Authorities concerned.
- y. Dewatering in Foundation, Trenches, Drainages, wherever required, and pumping out to Locations as directed by the Employer.
- z. All Necessary Safety Measures / Precautions to be adopted at Site as per the Instructions of the Employer.
- aa. Providing and maintaining Furnished Site Office for the Supervisory Staff of the Employer and his approved Representative.
- bb. Making good the Road Surface as per IRC Standards, which are damaged / worn out during Construction of the Work and restoring the same to the Original Status.
- cc. Any other Items of Works, which are not specifically enumerated in the Tender Document, but required for Functioning of all the Infrastructures Developed and as per the Directions of the Employer.
- dd. Construction of Architectural Features required for Good Aesthetics of the Infrastructure developed.
- ee. Painting with Approved Colour, Shade, Make and Type shall be provided for the various Elements as per the Specifications given in the Tender Document.
- ff. The Contractor shall ensure Cleanliness of the Work Area and its surroundings by deploying Man Power for the same. The Contractor shall have to ensure proper Brooming, Cleaning and Washing of Work Area till the Currency of the Contract including Disposal of Sweepage. Nothing extra shall be payable on this account.
- gg. Cleaning of the Site after Execution and before handing over the Project to the Employer.
- hh. Maintenance of all the Infrastructural Facilities developed for a Defect Liability Period of 24 months, which will run concurrently from the Date of the Physical Completion of the Project and on issuance of Completion Certificate by the Competent Authority and for a Maintenance Period of 36 months, which will run concurrently from the next day of Completion of Defect Liability Period and on issuance of Defect Liability Completion Certificate by the Competent Authority.

## **2.0 Design Criteria**

### **2.1 General and Approach to Work Site**

The General Site Particulars are shown in the Topographical Map. Refer Tender Drawings from **Drawing No. IS / 1402 / HIG / PL - 001.**

### **2.2 Benchmarks and Setting out of Works**

- a. The Standard Benchmark and its Reduced Level with reference to which the Work shall be carried out is the GTS Benchmark available nearest to the Site. The Employer does not take the responsibility about the Correctness of the Levels indicated in the Drawings. The Contractor has to establish at least fifteen Benchmarks in the Site of Works with Reduced Levels clearly marked on them. The Contractor shall be solely responsible for the accuracy of the Benchmark Levels and for maintaining the same throughout the Contract Period.
- b. The Works shall be set out in accordance with the Drawings approved by the Employer.
- c. The Contractor shall be responsible for the True and Proper Setting out of the Works and for the Correctness of the Positions, Levels, Dimensions and Alignments of all Parts of the Works and for the Provision of all Necessary Instruments, Appliances and Labours in connection therewith. The Contractor shall give at least 48 hours notice to the Employer of his intention to set out or give Levels.
- d. If at any time during the Progress of the Work, any Error appears or arises in the Positions, Levels, Dimensions and Alignments of any part of the Work, the Contractor shall at his own expenses and risk, rectify such Errors to the satisfaction of the Employer.
- e. The Checking of any setting out of any line or level by the Employer or his approved Representative shall not relieve in any way the Contractor of his responsibility for the Correctness thereof and he shall carefully protect and preserve all the Benchmarks, Site Rails, Pegs and other Things used in the setting out of Works.
- f. All Duties concerning Establishment of a Set of Benchmarks, Permanent Stations, Centre Line Pillars, etc. for performing all the Functions necessary at the Commencement and during the Progress of Work till the Physical Completion of all the Items of the Work in question, shall be carried out by the Contractor at his own risk and cost.
- g. The Centre Line of the Underpass Walls, Surface Levels Roads/ Slip Roads, Drainage Facilities and the Foundations shall be established by Total Station Equipment and the Centre Line Marks shall be engraved on smoothly finished masonry or concrete pillars of such dimensions and constructed at such intervals and places as may be directed by the Employer or his approved Representative and shall be maintained in proper manner throughout the Period of Construction. The Contractor shall submit a Drawing showing the Underpass Walls, Surface Levels Roads/ Slip Roads and Drainage Facilities within 15 (fifteen) days from the Date of Signing of Agreement.
- h. He shall also keep proper Record of such Permanent Benchmarks established denoting therein their Correct Levels.
- i. The Work of Establishment of all such Benchmarks shall be carried out by only experienced and skilled staff of the Contractor with the help of precise instruments suitable for this type of Work. The instruments used shall be checked for their accuracy and for permanent adjustments before the commencement of the Work and also at frequent intervals during the progress of the Work.
- j. All such Benchmarks established by the Contractor shall be subject to check and approval of the Employer or his approved Representatives. If any Variations noticed in the Work as result of improper establishment or maintenance of such Benchmarks, it shall be rectified at the Contractor's own Risk and Expense.

## 2.3 Design Requirements

The alignment, plan and profile shall be followed as per **Drawing No. IS / 1402 / HIG / PP – 001**. The finished road levels shall be maintained as a minimum as given in the plan-profile drawings.

The cross sections schedules shall be as per **Drawing No. IS / 1402 / HIG / TCS – 001** to **Drawing No. IS / 1402 / HIG / TCS – 002**

In order that the Tenderer's Proposal qualifies as an Alternative Design, it shall generally fulfill the following Requirements.

- a. It shall ensure Soundness of the Structure, its Durability and Aesthetics as a whole in harmony with the surroundings. A Report on the Aesthetic Aspect shall be compulsorily in the Technical Bid.
- b. It shall ensure Speedy and Practicable Construction.
- c. It shall lead to Appreciable Economy in the Design.
- d. It shall be accompanied by Detailed Drawings and Detailed Description of Work and Specification of Materials and Items. If called upon, the Tenderer shall explain his Proposal through Power Point Presentation during Tender Evaluation Stage before Opening of Financial Bid.
- e. At the time of Detailed Design, the Contractor shall not deviate from the Basic Scheme proposed by him for the purpose of Tender. At the same time, it is mandatory on the part of the Contractor to strictly adhere to all the Geometric Details indicated in the Tender Drawing. The Length of the Ramp could marginally change based on his Structural Scheme and Designs after Approval by the Employer.
- f. The Alignment of the Underpass, Surface Level Road and Drainage Facilities shown in the Drawings appended with the Tender Document shall be followed by all the Tenderers.
- g. The Tenderer shall note that it is a Requirement for Qualification that the Works warrant that the Structure proposed shall be aesthetically pleasing and easy to maintain considering the Importance of the Work Location.

## 2.4 Specifications for Design and Codes to be followed

The Design Components of all the Works shall conform to the Relevant Specifications and Criteria laid down in the following Latest Indian Road Congress Publications with Amendments / Revisions issued upto the Date of Issue of Notice Inviting Tenders.

The Hierarchy for the following Codes of Practice is as follows:

IRC: 5	General Features of Design
IRC: 6	Loads and Stresses
IRC: 15	Construction of Concrete Roads
IRC: 22	Composite Construction (Limit State Design)
IRC: 24	Steel Road Bridges
IRC: 35	Road Markings
IRC: 37	Design of Flexible Pavements
IRC: 38	Design of Horizontal Curves for Highways and Design Tables
IRC: 44	Cement Concrete Mix Design for Pavements
IRC: 54	Lateral and Vertical Clearances at Underpasses for Vehicular Traffic
IRC: 58	Design of Plain Jointed Rigid Pavements for Highways
IRC: 67	Road Signs
IRC: 78	Foundation and Substructure
IRC: 79	Road Delineators
IRC: 83	
(Part I)	Metallic Bearings

IRC: 83 (Part II)	Elastomeric Bearings
IRC: 83 (Part III)	POT, POT cum PTFE, PIN and Metallic Guide Bearings
IRC: 86	Geometric Design Standards for Urban Roads in Plains
IRC: 92	Design of Interchanges in Urban Areas
IRC: 103	Pedestrian Facilities
IRC: 112	Concrete Road Bridges
IRC: SP: 23	Vertical Curves for Highways
IRC: SP: 42	Road Drainage
IRC: SP: 50	Urban Drainage
IRC: SP: 56	Steel Pedestrian Bridges
IRC: SP: 57	Quality Systems for Road Construction
IS: 2911 (All Parts)	Pile Foundations

**The Latest Revision of the above Codes shall be followed.**

- b. Any IRC Standard Specifications and Codes of Practice or Criteria for Road Bridges other than "a" above, but published upto the Last Date of the Issue of Notice Inviting Tender.
- c. For any Item not covered by "a" and "b" above, MoRT&H Specifications for Road and Bridge Works published by Ministry of Surface Transport (Roads Wing), Government of India (Latest Edition).
- d. For Items not covered by any of the "a", "b" and "c" above, Standards and Specifications, Provisions of Bureau of Indian Standard (BIS) Codes of Practice.
- e. IRC: SP: 33 Guidelines on Supplemental Measures for Design, Detailing and Durability of important Bridge Structures (if applicable).
- f. For Items not covered by any of the above Standards and Specifications, Sound Engineering Practice and Provisions of Relevant Codes of other Nations shall be referred. In this regard, Decision of the Employer shall be final and binding on the Contractor.

Construction works shall be The General Technical Specifications shall be the "SPECIFICATIONS FOR ROAD AND BRIDGE WORKS (FIFTH REVISION, 2013)" issued by the Ministry of Shipping, Road Transport & Highways (formerly the Ministry of Surface Transport), Government of India and published by the Indian Roads Congress.

## **2.5 Order of Precedence in case of Conflict**

In Case of Conflict between difference parts of Tender Document, the following Order of Precedence shall prevail.

1. Design Criteria as specified in Tender Document.
2. Instructions to Tenderers.
3. Special Conditions of Contract.
4. General Conditions of Contract.
5. MoRT& H / IRC Specifications.
6. Codes of Practice.

## **2.6 Soil Investigation to be carried out by the Contractor**

The Contractor shall carryout complete Soil Investigation at his own risk and cost. The Boreholes shall be taken at the Final Locations at Selected Points of Retaining Wall and at any other Locations required for the Design of the Works prior to the Commencement of the Work to ascertain the Levels of Rock and its Quality, to obtain SBC at different Depths, Soil Stratification, Ground Water Table, etc. The Termination Level of the Borehole shall be determined by

conducting SPT Tests. Three consecutive SPT Tests at an interval of 1.5m each with 'N' values greater than 100 shall be carried out before termination. If rock is encountered, Drilling shall continue upto 3m in rock with Rock Samples taken for Testing. All the Soil / Sub Soil Investigations and its Frequency shall be strictly in accordance with the Relevant Codal Provisions.

- a. During Execution of the Work, the Samples from the Bore taken at each Foundation shall be tested and analysed in the Laboratory approved by the Employer for establishing Design Parameters. Tests such as Standard Penetration Test, Compression and Shear Test on Undisturbed Soil Samples, Pressure Meter Test, Crushing Strength of Rock, California Bearing Ratio (CBR) Test, Plate Load Test, etc. shall be carried out in conformity with the MoRT&H Specifications. The Contractor shall submit the entire Data to the Employer along with his own / Laboratory Recommendations and obtain approval for the Design Parameters. Necessary Interpretation of the Result of Tests shall be furnished to the Employer for scrutiny of Design of Foundations.
- b. The Cost of these Tests and Interpretation of the Test Results shall be considered, as incidental to the Main Work and the same shall be included in the Tendered Amount.
- c. While checking the Stresses at the Base of Foundations, it shall be ensured that under the Worst Combination of Forces no Tension is permitted. The Safe Bearing Capacity at the Foundation Level shall be verified during Construction so that to ensure that the Stresses imposed on the Foundation Strata are within Permissible Limits.

## 2.7 Restrictions on Type of Structures

The following Types of Structural Arrangements shall not be permitted.

- a. Structures, which require imported material of major quantity for which foreign exchange will have to be arranged by the Employer.
- b. A Design in which Stability of one or more Span is endangered due to the Failure of some other Span / Spans.
- c. Concrete Structures with Hinges / Half Joints / Articulations.
- d. Super Structures with Joints at the tips of long cantilevers with Hinges including Pendulum Type Bearings, Gap Slab, etc.
- e. Transversely Continuous Wide Deck resting on separate Foundations at Support Locations.
- f. Piers in the form of Multiple Columns or "Y" Columns.

## 2.8 Underpass

### 2.8.1 Structural Components

The Structural Components of the 2 lanes unidirectional Underpass at Junction with minimum Carriageway Width and raised Lateral Clearance on either side of the Carriageway are shown in **Drawing No. IS / 1402 / HIG / TCS - 002** for Harlur Junction.

The Covered Portion of the Underpass shall be of RCC Closed Box Section. In the Approaches, Open Box Section and Conventional RCC Retaining Structure shall be adopted.

Extra Widening of Carriageway and Super Elevation at Curve Portion as per IRC: 86 with Design Speed of 40 kmph shall be provided.

The Covered and Open Portions of the Underpasses are shown in **Drawing No. IS / 1402 / HIG / TCS – 001 and Drawing No. IS / 1402 / HIG / UP - 001** for Junction.

The Works of the Underpasses to be carried out under this Contract shall include the following.

- a. Designing of Underpass including all necessary Items duly related to Underpass.
- b. Construction of Covered and Open Portions of the Underpass, Wearing Course, Grill Work over Deck Slab, RCC Crash Barriers with Employer's Emblem as per the Approval of the Employer,



Expansion Joint, Construction Joints, Water Proofing, Painting, etc. as per Specifications mentioned in the Tender Document.

- c. Construction of Approaches for the Underpass including Open Box Section and Retaining Walls, Preparation of Sub Grade, Road Crust complete with Kerbs, RCC Crash Barriers with Employer's Emblem as per the Approval of the Employer, Painting, etc. as per Specifications mentioned in the Tender Document.
- d. Necessary Drainage Arrangement as per Relevant IRC Codes and shall be of Gravity Flow.
- e. Necessary Electrical Arrangement as per relevant IS Codes.

## 2.8.2 Restrictions on Type of Structures for Underpass

### Thickness

- |   |        |
|---|--------|
| a. Minimum Thickness of Structural Retaining Walls  | 300 mm |
| b. Minimum Thickness of Drain Walls                 | 150 mm |
| c. Minimum Thickness of Footpath / Drain Cover Slab | 125 mm |
| d. Minimum Thickness of Foundation                  | 500 mm |
| e. Minimum Thickness of Slab                        | 300 mm |
| f. Minimum Thickness of Counterforts, if provided   | 300 mm |

The Covered Portion of the Underpass shall be only of Box type.

### Cover

Clear Cover to any Reinforcement for Foundations and other Structures in contact with Earth shall be 75mm and for other Structural Members shall be 40mm.

### Other Features

Other Features like Gradients and Design Speed are obligatory. All Utility, Service Requirements, Crash Barriers, Railing and Approach Slabs shall be provided.

### Water Table

The Underpass shall be designed and executed 1.5m above the Water Table, if encountered, during Investigation.

### Water Tightness

The Structural Elements of Underpass shall be designed with Crack Width less than 0.2mm for Water Tightness.

### Foundations for Retaining Walls

The Retaining Walls for the Approaches shall be of Reinforced Cement Concrete. The minimum Depth of the Foundation shall be 1.5m below the Formation Level.

## 2.8.3 Design Data

Basic Design Data is included in this Section. The Tenderer is Responsible for Design and Construction of Underpass strictly in accordance with Codal Provisions of IRC and Specifications of MoRT&H.

### a. Location

The Locations of the Underpasses are given in the Drawings as mentioned in Clause No. 1.2 of this Section.

### b. Road Geometrics

The Standards for Road Geometrics to be adopted in the Design of the Underpasses and Approaches shall be as per IRC: 92 "Guidelines for the Design of Interchanges in Urban Areas" and IRC: 54 "Lateral and Vertical Clearances at Underpasses for Vehicular Traffic" and the Salient Features of the Underpasses are as follows.

Number of Lane	4 lanes bidirectional
Minimum Carriageway Width	7.5m
Length of Covered Portion	50.00m
Vertical Clearance	5.5m
Maximum Vertical Gradient	4% (1 in 25)
Length of Approach Ramp towards Outer Ring Road	155.00m
Length of Approach Ramp towards Sarjapura	205.00m
Minimum Width of Slip Road on southern side at Grade Level	5.5m
Minimum Width of Footpath on either at Grade Level	1.8m

- **Vertical Gradient**

Maximum allowable Vertical Gradient for all Entry and Exit Ramps shall be 4% (1 in 25).

- **Horizontal Curves**

The Requirements of Horizontal Curves shall be as per IRC Guidelines.

- **Vertical Curves**

The Requirements of Vertical Curves shall be as per IRC Guidelines.

- **Clearances**

- Minimum Vertical Clearance between the Formation Level of the Underpass and the bottom level of the Soffit of the Deck is **5.5m**.
- Minimum Lateral Clearance from any Structure to the Edge of Carriageway is as shown in the Tender Drawings.

The Standards for Road Geometric to be adopted in the Design of the Underpass and Approaches shall be as per the following Codes.

- IRC: 92 "Guidelines for the Design of Interchanges in Urban Areas".
- IRC: 54 "Lateral and Vertical Clearances at Underpass for Vehicular Traffic".

#### 2.8.4 Structural Arrangement

The Structural Arrangement of Underpasses shall be as per the **Drawing No. IS / 1402 / HIG / UP / - 001** for Junction.

#### 2.8.5 Supplementary Data

Any Supplementary Data required for the Design can be obtained from the below mentioned Data.

- ❖ Design Speed 65 kmph
- ❖ Chemical Contents of Subsoil and Subsoil Work
  - Sulphate Content in Soil
  - Sulphate Content in Water
  - Chloride Content in Soil
  - Chloride Content in Water
 } Contractor shall verify the Conditions
- ❖ Temperature Range  $\pm 17^{\circ}\text{C}$

#### 2.8.6 Description of Work and Obligatory Provisions for Alternative Proposals

##### a. Alignment and Location

The Alignment, Longitudinal Section of the Underpasses, Approaches, etc. shall be as shown in the **Drawing No. IS / 1402 / HIG / PL / 001** for Junction.

b. **Layout of Underpass**

The Layout of Underpasses shall satisfy the following Criteria as indicated in the enclosed Drawing and Supplementary Data (2.9.5 of Section 6).

- i. Minimum Vertical and Horizontal Clearance in the Covered Portions of the Underpass.
- ii. Ruling Gradient.
- iii. Minimum Length of Summit Curve as 30.00m and Valley Curve as 30.00m shall be adhered to.
- iv. Any other Criteria as shown on the Drawing and Supplementary Data (2.8.5 of Section 6).

c. **Road Level in the Underpass and Roadway Particulars**

- i. Road Particulars and Carriageway Width shall be as shown in the **Drawing No. IS / 1402 / HIG / TCS - 001** for Junction.
- ii. The Vertical Profile of the Finished Surface of Deck Slab and Wearing Course shall be in the form of a Smooth Curve where Change in Gradient occurs. The Design of Curves (Vertical / Horizontal) shall be approved by the Employer.

**2.8.7 Design Loads**

a. **Live Load**

The Underpasses shall be designed as per IRC: 6 (Latest Edition). The Superstructure of the Underpasses shall have the Provision to accommodate the Service Lines running across the Alignment.

b. **Seismic Force**

The Underpasses shall be designed for Appropriate Seismic Forces as per the Provisions of IRC: 6 (Latest Edition).

c. **Earth Pressure**

- i. The Soil Properties for Embankment shall be in accordance with MoRT&H Specifications. The Properties of Embankment like Dry Density of Soil 1.85 T / cum., Saturated Density 2.00 T / cum.,  $\phi = 30^\circ$  and  $C = 0$  shall be considered for Design Purpose.
- ii. Saturated Density of the Backfill (minimum 2T / cum) shall be considered for calculating Active Earth Pressure.
- iii. For Passive Pressure, Procedure given in Appendix 4 of IRC: 78 shall be followed.
- iv. Passive Relief for Socketing shall not be permitted for Foundations resting on Rock.
- v. Cohesion of Backfill Earth shall not be considered in Calculating Earth Pressure.
- vi. No Skin Friction shall be taken into account for the Calculation of any Relief for Vertical Load upto Rock Level. The Angle of Wall Friction in no case shall exceed  $2/3$  of Angle of Internal Friction of Soil in Embankment.

d. **Temperature Range**

- i. For Design of Structure to account for Temperature in formula  
Movement (DL) =  $\alpha L t$   
The value of "t" shall be as given in **2.9.5 of Section 6**.
- ii. The Superstructure shall also be designed for Effects of Distribution of Temperature across the Deck Depth as per the Relevant Codal Provisions. For Calculation of Thermal Force Effect, 'E' Value of Concrete shall be taken as 50% of the Instantaneous Value so that to account for the Effects of Creep on Thermal Strains.

**2.8.8 Durability**

- a. Minimum Grade of Concrete shall be as below.

PCC for Levelling Course	M15
RCC for Open Foundation, Sub Structure and Super Structure	M35

- b. **Minimum Cement Content, Diameter of Bar and Cover Requirements**

For Plain Cement Concrete (PCC), Reinforced Cement Concrete (RCC) and Pre Stressed Concrete (PSC), the Value given below regarding Minimum Cement Content and Maximum Water Cement Ratio shall be followed.

Plain Concrete		RCC / PSC	
Minimum Cement Content Kg / cum.	Maximum Water Cement Ratio	Minimum Cement Content Kg / cum.	Maximum Water Cement Ratio
240	0.45	390 / 400	0.45 / 0.40

- c. The Minimum Nominal Diameter of Reinforcement shall be 8mm.

## 2.8.9 Joints

### 2.8.9.1 Expansion Joint

Expansion Joint in Covered Portion of the Underpasses shall be provided at every 30m interval with size 12mm X 25mm with Gun Grade Polysulphide Elastomeric Joint Sealant [like NITOSEAL 215(I) of FOSROC or equivalent] over a Bitumen Pad fixed in the Joints, applying the Joints with NITOSEAL Primer or equivalent, including Preparation of Surface, Primer Coat, Finishing Cost of all Materials, Labour including Cost of Bitumen Pad.

### 2.8.9.2 Contraction Joint

Contraction Joint will be provided along the Pavement in the Underpass as per the Design approved by the Employer.

## 2.8.10 Crash Barriers

Concrete Crash Barriers shall conform to Clause 809 of MoRT&H Specifications. The Tenderer may propose Alternate Type of Crash Barrier in the Technical Bid. It will be necessary to provide a 50mm dia MS Tube Hand Rail 300mm above the Crash Barrier and supported at Suitable Intervals. No Welding shall be done for Connections. Crash Barriers shall be provided with Employer's Emblem as per the Approval of the Employer.

## 2.8.11 Drainage

The Drainage of Water collected in the Underpasses shall conform to Clause 309 of MoRT&H Specifications for Road and Bridges (Latest Edition). The Tenderer shall indicate the Drainage Arrangements and the Existing Road Drains in the Drawings submitted with the Technical Bid. The Contractor is also required to make Provisions for Ducts for Cables, Pipe Lines, etc. to cater to Service Lines, etc. Care shall be taken not to result in an Unsightly Appearance in the System adopted. At ground level, Catch Water Drain with MS Gratings shall be provided. The Drains shall be connected to the nearest Storm Water Drain. The Drainage Arrangements shall be based on Gravity Flow. The Lump Sum Cost shall include all these Items. During the Construction, the water, which is met with, shall be pumped into the Roadside Drains. At no point it shall be pumped into BWSSB Sewer / Sanitary Lines. The Levels and Dimension Details for Drainage Arrangement shown in the Tender Drawing are only indicative. The Contractor shall carry out the required Hydraulic Study and work out the Levels and Dimension Details for Drainage Arrangement based on the Hydraulic Study and get the Drawing approved by the Employer before Execution.

## 2.8.12 Wearing Coat

A Bituminous Wearing Coat of Uniform Thickness shall be provided for Smooth Riding Surface and shall conform to Clause 2702.1 of MoRT&H Standard Specifications for Road and Bridge

Works (Latest Edition). The Cross Sections indicated in the **Drawing No. IS / 1402 / HIG / TCS - 001** for Junction shall be strictly adhered to.

#### 2.8.13 Approach Slab

The Approach Slab shall conform to Clause 2704 of MoRT&H Standard Specifications for Road and Bridge Works (Latest Edition).

#### 2.8.14 Electrical Works

The Tenderer shall include the Cost of Lighting within the Covered and Open Portions of Underpasses, Junction at Surface Level above the Underpasses, etc. in his Turn Key Lump Sum Tender and shall carry out all the Electrical Works as per relevant Codal Provision. The Tenderer shall indicate the proposed Lighting Arrangements as per relevant IS Codes and the existing Street Lights in the Drawings submitted with the Technical Bid. The Lumination shall be average of 40 lux throughout.

#### 2.8.15 Painting

Painting with Approved Colour, Shade, Make and Type shall be provided for various Elements as follows.

i.	Covered and Open Portions of Underpasses, Retaining Wall	Anti-Carbonate Painting as per Specifications.
ii.	Kerbs for Medians, Footpath, etc. and Guard Railings, Grills and other MS Items, wherever required.	Two Coats of approved Enamel Paint over Two Coats of Zinc Phosphate Grey Primer.
iii.	MS Hand Rails over Crash Barrier	Two Coats of Epoxy Paint over a Compatible Primer after Cleaning the Surface with Sand Blasting.

#### 2.9 Load Test

- a. In Case a Structure or a Component of Structures proposed by the Contractor in the opinion of the Employer is of Unusual Nature, then the Employer shall have the Right to call upon the Contractor to carry out Model Testing and / or Load Testing of the Structure or Component to prove its Suitability. The Cost of such Test shall be borne equally by the Contractor and the Employer if the Test Results are Satisfactory. In case the Test Results are not satisfactory, the Cost of Testing shall be entirely borne by the Contractor.
- b. If required by the Employer, the Contractor shall have to carry out a Load Test on anyone Unit of the Bridge Structure for the Design Static Loads or their equivalent and in a manner as may be decided by the Employer.
- c. The Employer may also instruct that a Load Test shall be made on any part of the Bridge Structure if in his opinion such a Test be deemed necessary for anyone or more of the Reasons specified below.
  - i. The Work Test Cubes failing to attain the Specified Strength.
  - ii. Shuttering being prematurely removed.
  - iii. Concrete being improperly cured.
  - iv. Any other Circumstance(s) attributable to the Negligence on the part of the Contractor which in the Opinion of the Employer results in the Structure or part thereof being of less than the expected Strength.
  - v. Any Reasons in case of Doubtful Quality or Soundness of Structure.
- d. If the Load Test is to be made
  - i. For anyone or more Reasons mentioned in (b) above, the Cost of the same shall be Reimbursable to the Contractor at the rate tendered by him, provided the Test Results

- thereof are found to be Satisfactory.
- ii. Wholly or partly for the Reasons given in (c) above, the Test shall be carried out by the Contractor, at no extra Cost to the Employer.
- e. In the Event of Load Testing being ordered by the Employer, the Contractor shall
- i. Prepare well in time all Necessary Calculations and Details of Arrangements for such Load Testing, e.g. the Magnitude of the Test Load, Mode and Method of Carrying out the Test, the Application of Loads, Duration of Keeping the Load, the Equipments to be provided and Observations to be made during and after Placing the Loads in Position, etc.
  - ii. Make all Necessary Arrangements for Observations, Centering, Equipments, etc. that may be needed for Measuring the Settlement, Deflections, etc. required for the Test, to the entire Satisfaction of the Employer and
  - iii. Provide Labour and make all Observations during the Test.
- f. After the Test, the Contractor shall submit a Report on the Results of the Tests. The Employer shall then communicate as to whether the Test has been satisfactory or not. Any Further Tests or Reconstruction or Strengthening as may be necessary shall be decided.
- g. Any Defect noticed in the Structure or any Damage done to the Bridge, at the Time of Testing, which affects or is likely to affect the Strength of the Bridge, shall be rectified by the Contractor at his own Cost by Remedial Measures or Replacement as approved by the Employer.
- h. When the Tests are declared by the Employer as having been completed, the Contractor shall remove all Loading, which might still be on the Bridge as well as on the surroundings.
- i. Only Design Load is to be superimposed for Prestressed Concrete Superstructure. IRC: SP: 37 shall be followed for Load Testing. Necessary Correction for Variation in Deflection due to Temperature Variation throughout the day shall be applied.

## 2.10 Junction Improvements

The Work of Junction Improvements to be carried out under this Contract is indicated in **Drawing No. IS / 1402 / HIG / PL – 001** for Junction at Ch: 0+430Km. Improvements shall also include all the Cross Roads upto 100m length from the Corridor, the cross road details are shown in **Drawing No. IS / 1402 / HIG / PP – 001**.

**The work of development of junctions** shall include the following.

- a. Widening and Resurfacing of Existing Roads; Dismantling of Existing Structures coming on the Carriageway such as Compound, Drains, Footpaths, Kerbs, Medians, Parapet Walls; Construction of new Culverts / Bridges; etc.
- b. Construction of Footpath along with Road Side Drain and Utility Duct covered with 125mm thick RC Precast Slab and providing Heavy Duty Cobble Stone 60mm thick Interlock Pavers of Approved Size, Shape and Colour with a minimum Compressive Strength of 281 kg / Sqm in the Additional Width of Footpath i.e. leaving the Width of Road Side Drain and Utility Duct ; Medians; Kerbs, Railing on Footpath including Construction of Compound, Storm Water Drains, Drain Cover Slabs, Traffic Signages, Overhead Gantry, Road Marking such as Lane Marking, Pedestrian Marking, Direction Marking, STOP and STOP Lines, etc. as per the Specifications given MoRT&H and Kerb Painting as per the Specifications mentioned in this Tender Document.
- c. The Construction of Medians, Kerbs and Footpath shall conform to Clause 407, 408 and 409 of the MoRT&H Specifications for Road and Bridge Works (Latest Edition) and shall be shown in the Drawings submitted with the Technical Bid.
- d. Dismantling and Reconstruction of Compound, Gates, Grills, etc.
- e. Guard Rails shall be provided to separate the Carriageway from the Footpath all along the length within the Battery Limit as per Clause 808 of MoRT&H Specifications for Road and Bridges (Latest Edition).

## 2.11 Traffic Signs, Markings and other Road Appurtenances

Traffic Signs, Markings and other Road Appurtenances shall conform to Clause 800 of the MoRT&H Specifications for Road and Bridges (Latest Edition) and shall be shown in the Drawings submitted with the Technical Bid. Road Markings shall conform to IRC: 35 (Latest Revision) and Road Signs shall conform to IRC: 67 (Latest Revision). The Tenderer shall submit the Detailed Drawings of the Signages required as per the relevant IRC Specifications. Overhead Gantry by indicating Destinations as per the Approval of the Employer shall be provided at the Approved Location. Signages shall be provided with Retro Reflective, Micro Prismatic Reflectionised Stickers. Advanced Direction Boards with similar Specifications as above shall be provided at Locations mandated by IRC and as directed by the Employer.

## 2.12 Drainage System

The Contractor shall carry out Hydraulic Study in the entire Catchment Area, which is having influence on the proposed RoW of the Project, in order to assess the Quantity of Runoff to be drained off from the proposed RoW. For this purpose, the Contractor shall map the Storm Water Drainage System, which passes through the proposed RoW. He shall calculate total Quantity of Runoff, which precipitates on the proposed RoW Area and enters the proposed RoW Area. The Contractor shall work out a Comprehensive Drainage System for Disposal of Runoff collected on Surface Road by Gravity Flow only and the Drain shall be connected to the nearest Natural Storm Water Drain and as per the Approval of the Employer.

All Drainage System shall conform to Clause 309 of MoRT&H Specifications for Road and Bridges (Latest Edition).

The Tentative Drainage Arrangement Details for the project corridor are given in **Drawing No. IS / 1402 / HIG / PP - 001**. However, the Levels and Dimension Details for Drainage Arrangement shown in the Drawings are only indicative. The Contractor shall carry out the required Hydraulic Study and work out the Levels and Dimension Details for Drainage Arrangement based on the Hydraulic Study and get the Drawing approved by the Employer before Execution.

The Tenderer shall indicate a Comprehensive Drainage Arrangement System in the Drawings to be submitted with the Technical Bid.

The Lump Sum Cost quoted by the Tenderer shall include all the above Items. During the Construction, the Water, which is met with, shall be pumped into the Roadside Drains. At no point it shall be pumped into BWSSB Sewer / Sanitary Lines.

## 2.13 Improvement Works

- a. The Stretches of Corridor to be improved under this Work are as indicated below.
  - Ch 250.00 to ch 660.00

It shall also include all the major junctions and Cross Roads upto 100m length from the Corridor, all the Junctions and Slip Roads/ Service Roads. The General Site Particulars are shown in the Topographical Map. Refer Tender Drawings from **Drawing No. IS / 1402 / HIG / PP – 001**.

- b. The Quantities shall be executed in the Locations as per the Instructions of the Employer / his Representatives.
- c. The Contractor shall prepare Inventory of existing Materials and Proposal for Disposal and Stacking of the Materials and the same shall be approved by the Employer / his Representatives.
- d. The Items proposed for Improvements as a part of this Works are
  - Carriageway.

- Footpath.
- Shoulder Drain along with Catch Drain.
- Road Side Drain.
- Illumination.
- Traffic Signage and Marking.

#### 2.11.1 Construction of new RCC Drain, Providing and Fixing with RC Precast Cover Slab

This involves Construction of RCC Drain of minimum Dimension 0.6m Width X 1.0m Depth along with RC Precast Slab of minimum 125mm thick.

The above Work shall involve the following Items.

- i. Earthwork Excavation for Drain.
- ii. Disposal of the Disused Materials.
- iii. Providing and laying minimum 100mm thick PCC M15 with OPC Cement @ 240 kg / cum, 40mm Downsize Graded Granite Metal Coarse Aggregate @ 0.84 cum / cum and Fine Aggregates @ 0.56 cum / cum in Open Foundation and complete as per MoRT&H Specifications.
- iv. Providing Open Box Type RC Wall of minimum thickness 150mm with Design Mix M20 with minimum OPC Cement @ 320 kg / cum, with 20mm Downsize Graded Granite Metal Coarse Aggregates @ 0.69 cum / cum and Fine Aggregates @ 0.46 cum / cum with Superplasticiser @ 3 litres for each cum of Concrete conforming to IS: 9103 including all necessary Dewatering, Centering, Shuttering, etc. as per the Approved Design.
- v. Backfilling and Compaction behind the Side Walls with Approved Earth.
- vi. Providing and fixing of Precast Perforated RC Slab of minimum 125mm thick in Cement Concrete 1:1.5:3 using Graded Granite Jelly 20mm and Downsize with Steel Reinforcement, including Formwork, Curing and Concrete Finished Surfaces on both sides, etc. and complete as per the Instructions of the Employer / his Representatives.

The Contractor shall carry out **construction of Drain for Length of 2460.00m.**

#### 2.11.2 Kerb and median

The Works of providing and fixing Kerb Stones to be carried out under this Turn Key, Lump Sum, Fixed Price, No Variation Contract shall include

Providing and fixing of Precast Solid Concrete Kerb Stones of Size 450 length, 400mm height and 165 mm bottom width made out of CC 1:2:4 and finished with CM 1:3 Plastering and Finishing, Cutting, etc. at the median which includes filling of soil in the median between two Krebs, the construction of kerb is for a total **Length of 1640.00m** as per the Instructions of the Employer / his Representatives.

#### 2.11.3 Footpath

The Works to be carried out under this Turn Key, Lump Sum, Fixed Price, No Variation Contract shall include the following two types of Works.

- i. Providing and fixing Interlocking Cobble Stone Paver over  
This Work shall include the following Items.
  - Required Earthwork Excavation.
  - Disposal of Disused Materials.
  - Surface Levelling.
  - Providing and fixing Cement Concrete Solid Band at the edge of proposed Pavement Area where there is no Kerb of Size 40 X 10 X 20cm with CM 1:4 conforming to IS: 2185 and complete as per the Instructions of the Employer / his Representatives.



- Providing and laying minimum 50mm thick Sand Bed.
- Providing and laying Heavy Duty Cobble Stones 75mm thick Interlock Pavers over an **Area of 574.00 Sqm**, using Cement and Coarse Sand for Manufacture of Blocks of Approved Size, Shape and Colour with a minimum Compressive Strength of 281 kg per Sqm over 50mm thick Sand Bed, 150mm Granular Sub Base, 150mm Wet Mix Macadam and compacting with Plate Vibrator having 3 Tons Compaction Force thereby forcing Part of Sand underneath to come up in between joints, final compaction of Paver Surface Joints into its final level and complete as per the Instructions of the Employer / his Representatives.

#### 2.11.4 Illumination

The Illumination Works to be carried out under this Turn Key, Lump Sum, Fixed Price, No Variation Contract shall include following two types of Works.

- i. Fabrication, supplying and erection of 8 Mtrs long hot dip Galvanized Octagonal pole with two coats of enamel paint of approved quality and colour and complete as per the Instructions of the Employer / his Representatives. **(Double Arm)**
- ii. Supplying of **Light Emitting Diode (LED)** Street Light with die cast aluminum body with optimal heat sink for better thermal dissipation as per the Instructions of the Employer / his Representatives. Luminaire manufacturer should have in house facility accredited by NABL/CPRI & any Government certified agency & Design & Development facility certified by ISO 9001:2008. Housing with supplier word mark/ name shall be Engraved / Embossing on the die cast housing / Body part. Warranty of 5 years against any manufacturing defect working under standard electrical conditions suitable for B1/B2 Roads as per IS 1944 Part I & Part II
- iii. Supplying, providing and connecting with required electrical cables, fittings and all accessories required for the illumination of 694 poles.

The Contractor shall carry out the above Items with **17 poles** as per the Instructions of the Employer / his Representatives.

#### 2.11.5 Traffic Signage

The Work to be carried out under this Turn Key, Lump Sum, Fixed Price, No Variation Contract shall include Providing and erecting retro - reflectorized cautionary, mandatory and informatory sign as per revised IRC : 67-2012 made of high intensity grade sheeting vide clause 800.1.3, fixed over aluminum sheeting, 1.5mm thick supported on a mild steel single iron post 75 mm x 75 mm x 6 mm firmly fixed to the ground by means of properly designed foundation with M 15 grade cement concrete 45 cm x 45 cm x 60 cm, 60 cm below ground level as per approved drawing as per specifications. MORTH Specification No 801.

The Sign Boards shall include the following.

- ❖ 80mm x 60mm rectangular of **5 Nos.**: Warning Sign Board.
- ❖ 90cm Equilateral Triangle of **5 Nos.**: Pedestrian Crossing Sign Board, No Pedestrian Crossing Sign Board.
- ❖ 90 cm high Octagon of **5 Nos.**: Informatory Sign Board.
- ❖ 2 overhead gantry sign boards at each end of the project road

#### 2.11.6 Painting

The Work to be carried out under this Turn Key, Lump Sum, Fixed Price, No Variation Contract shall include Painting of Kerb Stones, barricades, metal grills, etc., in two coats after filling the Surface with Synthetic Enamel Paint in approved shades on new Plastered Concrete Surfaces as per MoRT&H Specifications for the entire Stretch of Corridor / Bus Bays / Service Roads and Connecting Roads.

#### 2.11.7 Carriageway Improvement Works

The Works to be carried out under this Turn Key, Lump Sum, Fixed Price, No Variation Contract shall include the following one types of Works.

- Construction of **Service Road and Minor Junction** by using Selected Sub Grade, Granular Sub

Base, Wet Mix Macadam, Dense Graded Bituminous Macadam and Bituminous Concrete

- Construction of **Covered Portion** by using Mastic Asphalt and Bituminous Concrete

#### **2.11.7.1 Construction of Service Road by using Selected Sub Grade, Granular Sub Base, Wet Mix Macadam, Dense Graded Bituminous Macadam and Bituminous Concrete**

This Work shall include the following Items.

- i. Excavation for road way in all types of soil by mechanical means including cutting and pushing the earth to site of embankment including trimming bottom and side slopes in accordance with requirements of lines, grades and cross sections complete as per specifications.
- ii. Construction of Sub-Grade of thickness 500mm with approved material Gravel / Murrum with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of Table No. 300-2 complete as per specifications (including cost of earth, watering charges & compaction by vibratory roller.
- iii. Construction of Granular Sub-Base of thickness 200mm by providing coarse graded material, mixing in a mechanical mix plant at OMC, carriage of mixed material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desire density, complete as per specifications and complete as per the Instructions of the Employer / his Representatives. As per Table 400- 1, coarse graded granular sub-base
- iv. Providing, laying, spreading and compacting graded stones aggregate to wet mix macadam of thickness 250mm specifications including pre mixing the material with water at OMC in mechanical mix plant carriage of mixed method of tipper to site, laying in uniform layers with paver in sub-base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density complete as per specifications and complete as per the Instructions of the Employer / his Representatives, As per Table 400-13
- v. Providing and applying primer coat with S. S bitumen emulsion on prepared surface of granular base such as WBM, WMM including clearing of road surface and spraying primer at the rate of 0.60 kg/ sqm using mechanical means and complete as per the Instructions of the Employer / his Representatives
- vi. Providing and applying Tack Coat on Granular Base such as WMM Surfaces Hot Bitumen primed at 2.5 kg per 10 Sqm, heating Bitumen in Boiler fitted with Spray Set (excluding Cleaning of Road Surface) and complete as per the Instructions of the Employer / his Representatives.
- vii. Providing and laying dense bituminous macadam of thickness 50mm using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10 complete in all respects complete as per specifications using 100/120 TPH capacity HMP with sensor paver Gr-II (50mm to 75mm) with 4.5% VG-30 Bitumen.
- viii. Providing and applying tack coat using 80/100 grade bitumen(VG10) in boiler fitted with spray set distributor at the rate of 0.20 kg per sqm on the existing prepared bituminous surface cleaned with mechanical broom. complete as per specifications using Bitumen 80/100 (VG-10) on primed surfaces.

- ix. Providing and laying bituminous concrete 40mm thick with hot mix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 500.7, table 500-17 complete in all respects as per specifications using 40/60 TPH capacity HMP with sensor paver Gr-II (30mm to 40mm) with 5.4% VG-30 Bitumen.
- x. **Road Marking with Hot Applied Thermo Plastic Compound with Reflectorising Glass Beads on Bituminous Surface along Edge Line near Footpath and Median, Centre Broken Line and Zebra Crossing near Junctions as per the Instructions of the Employer / his Representatives:** Providing and laying of Hot Applied Thermoplastic Compound 2.5mm thick including Reflectorising Glass Beads at 250gms per Sqm area, whereas Thickness of 2.5mm is exclusive of Surface Applied Glass Beads as per IRC: 35 (Latest Edition) of Width 150mm. The Finished Surface shall be level, uniform and free from Streaks and Holes and shall be completed as per MoRT&H Specifications.
- xi. Providing and fixing of Road Stud of Size 100 X 100mm, die cast in Aluminium, Resistant to Corrosive Effect of Salt and Grit, fitted with Lens Reflectors, installed in Concrete or Asphaltic Surface by Drilling Hole 30mm upto a Depth of 60mm and bedded in a suitable Bituminous Grout or Epoxy Mortar, all as per Specifications of BS: 873, Part 4 along Edge Line near Footpath and Median, Centre Broken Line and Zebra Crossing near Junctions as per the Instructions of the Employer / his Representatives.

All the above Items shall be carried out for an **Area of 4510.00 Sqm**

#### **2.11.7.2 Construction of Covered Portion by using Mastic Asphalt and Bituminous Concrete**

This Work shall include the following Items.

- i. Providing and applying primer coat with S. S bitumen emulsion on prepared surface of granular base such as WBM, WMM including clearing of road surface and spraying primer at the rate of 0.60 kg/ sqm using mechanical means and complete as per the Instructions of the Employer / his Representatives
- ii. Providing and applying Tack Coat on Granular Base such as WMM Surfaces Hot Bitumen primed at 2.5 kg per 10 Sqm, heating Bitumen in Boiler fitted with Spray Set (excluding Cleaning of Road Surface) and complete as per the Instructions of the Employer / his Representatives.
- iii. Providing and laying bituminous concrete 40mm thick with hot mix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 500.7, table 500-17 complete in all respects as per specifications using 40/60 TPH capacity HMP with sensor paver Gr-II (30mm to 40mm) with 5.4% VG-30 Bitumen.
- vi. Providing and laying 25 mm thick mastic asphalt wearing course with paving grade bitumen meeting the requirements given in table 500-29, prepared by using mastic cooker and laid to

required level and slope after cleaning the surface, including providing antiskid surface with bitumen precoated fine grained hard stone chipping of 13.2 mm nominal size at the rate of 0.005cum per 10 sqm and at an approximate spacing of 10 cm center to center in both directions, pressed into surface when the temperature of surfaces is not less than 100°C, protruding 1 mm to 4 mm over mastic surface, complete as per clause 500.1 5 as per specifications. MORTH Specification no. 515.

All the above Items shall be carried out for an **Area of 1000.00 Sqm**

### **3.0 Documentation, Instrumentation, etc.**

- a. All Drawings shall be made in Latest Version of AutoCAD and the Soft Copies on CDs and ten Hard Copies of Prints of all Approved Drawings and "As Built" Drawings shall be supplied by the Contractor to the Employer at Free of Cost as per the Agreed Programme.
- b. CDs and ten Hard Copies of all Approved Design Calculations shall be submitted by the Contractor to the Employer at Free of Cost as per Agreed Programme.
- c. Five Video CDs of 180 minutes duration each of the Elements covering the Different Phases of Construction from Start to Finish shall be supplied by the Contractor to the Employer at Free of Cost.
- d. Three Copies of "Maintenance Manual" describing Access Arrangements, Important Obligatory Precautions from the Point of View of Structural Safety and Procedure for Minor and Major Repairs of each Component of the Elements, Renewals of Finishes and Treatments periodically including Guarantee / Warranty Certificates shall be supplied by the Contractor to the Employer at Free of Cost.
- e. Three Copies of "Quality Assurance Manual" covering Designs and Drawings, Mix Designs, Materials, Testing, Soil and Rock Properties, Statistical Quality Control, etc. shall be prepared by the Contractor and submitted to the Employer at Free of Cost well before Starting the Work.
- f. Three Copies of "Safety Manual" covering necessary Safety and Precautions to be adopted by the Contractor as per Requirements and as per Standards during execution of the Work.
- g. Three Copies of "Construction Manual" covering Various Aspects of Construction Methods, Difficulties faced and how they are overcome during Execution, etc. shall be supplied by the Contractor to the Employer at Free of Cost at the Time of Finalisation of Work.
- h. The Contractor shall install Fixtures and Fastenings provided by the Employer for housing any Instrumentation that may be useful for the Employer at Contractor's Cost.
- i. Fixing Arrangement for Internal and External Lighting shall be approved by the Employer and executed by the Contractor.

### **4.0 Programme of Submission and Approval of Designs and Drawings**

The Programme for submission of Designs and Drawings is as listed out below.

Details	Time from Award of Work
Award of Work	0
Submission of Topographic Survey Drawing along with the Soil Investigation Report, Hydraulic Study Report, Details of Utility Mapping	4 Weeks
Horizontal and Vertical Geometrics, GAD and Construction Methodology and Schedule	5 Weeks
Traffic Diversion Schemes / Traffic Management Schemes during Construction, Quality Assurance Manual, Safety Manual, Physical Model of the Project	5 Weeks
Inception Report and Detailed Design Parameters	7 Weeks
Design and Construction Drawings of all Foundations and Preliminary Design of whole Structure	10 Weeks
Design and Construction Drawing of Underpasses (Covered and Open Portions), Abutments and Retaining Walls in Approaches, all Piers and Abutments of Flyover	15 Weeks
Design and Construction Drawing of all Superstructures	17 Weeks
Design and Construction Drawing of Balance Items of Work	20 Weeks
Submission of As Built Drawings, Video CD, Maintenance Manual, Construction Manual	4 Weeks after Completion of Work

The Total Period available for Submission of all Detailed Design and Drawings from the Date of Award of Work is 20 Weeks, which will be submitted in accordance with the Approved Construction Schedule.

The Design shall be submitted in Sufficient Details and as lucidly as possible so that to enable Quick Proof Checking by the Employer or his approved Representative. All the Design Calculations along with Corresponding Construction Drawings marked as "Good for Construction" will be submitted. The Corrected Designs are to be submitted as Record Designs within 15 Days of Approval of the Drawings. If the Record Designs are not submitted within this Time Frame then a Penalty at the rate of **Rs. 100000/-** per day shall be charged for every day of Delay in Submission of the Record Designs. The Corrected Designs and Drawings would be cleared within 3 weeks of submission subject to Compliance of all Points. Any other Component, which requires Redesigning on Account of Exigencies of the Site like Redesigning the Foundations for Utilities, etc. during the Duration of the Works, shall be approved as expeditiously as possible. Such Designs shall be submitted within 10 days of taking a Decision to redesign the Component. Analysis and Design shall be done using Computer with Recognised Software. The Contractor shall submit with Design, the Detailed Description of Method of Analysis with Explanatory Notes and submit Sample Manual Calculations for adequate number of Typical Cases. The Computer Programme as submitted will be further tested by Comparison with Solutions of Worked Examples. Drawings and Designs shall be in SI Units. Calculations shall be neat and clear, preferably typed and printed and supplemented by Full Explanatory Notes and Sketches wherever required. All Construction Drawings of Initial Submissions and Final Approval shall be in AutoCAD only.

If during the scrutiny of Detailed Design Calculations and Working Drawings, any Changes therein which are found necessary in the Opinion of the Employer, the same shall be incorporated without altering the Turn Key Lump Sum Quotations. It is entirely the Responsibility of the Contractor to submit properly Prepared and Completed Designs in good time to enable the Employer to approve them in time.

The Contractor shall submit 2 sets of Advance Copies of the Drawings and Design Calculations to the Employer or his approved Representative with a Forwarding Letter to the Employer. Once the Design and Drawings have been finalised by the Employer, the Contractor shall forward eight sets of Drawings incorporating Corrections, if any, for the Final Approval.

After Completion of each Stage of Work, 3 Sets of Record Plans and One Set of Final Design Calculations based on the Work as actually executed on Site, shall be supplied by the Contractor in Bound Volumes to the Employer.

Approval to Drawings, Designs and Design Calculations by the Employer shall not in any way relieve the Contractor of his Responsibility for the Correctness, Soundness and Structural Stability and Safety of the Structure.

The Approved Drawings and the Design Calculations of the Elements shall be the property of the Employer.

The Contractor's Designer or Consultant shall compulsorily attend all the Review Meetings conducted by the Employer from time to time without any extra cost and shall also remain present as and when required during the Checking of Designs for Clarifications, if required.

As Built Drawings shall be submitted within 4 weeks from the Date of Completion of Works. Penalty of **Rs. 1000000/-** shall be levied for every week delay in submission of As Built Drawings beyond the Stipulated Deadline. An amount of **Rs. 10000000/-** shall be withheld from the Contractor's Final Bill until the As Built Drawings are submitted.

## 5.0 Construction Schedule

The Construction Schedule and the Methodology of Construction shall be so planned that there is Minimum Obstruction to Traffic during Construction and the entire Work can be completed in minimum possible time.

## 6.0 Site Office

The Contractor shall provide and maintain Furnished Site Office at the Project Location for the Supervisory Staff of the Employer and his approved Representative.

It shall have minimum 40 Sqm of Floor Area and shall include all Items like Electric Supply, Electrical Items, Telephones, Lights, Fans and Complete Wiring, Drinking Water Supply and Hygienic Toilet Facilities completed along with Furniture as listed below.

- |   |        |
|---|--------|
| i. Executive Table (for the Employer)   | 1 No.  |
| ii. Executive Chair (for the Employer)  | 1 No.  |
| iii. Table (for Employer's approved Site Representative, Accountant, Head Clerk and Visitors)   | 6 Nos. |
| iv. Ordinary Chair Type I (for the Employer, Accountant, Head Clerk and Visitors)   | 3 Nos. |
| v. Table (for all other Staff)  | 2 Nos. |
| vi. Ordinary Chair Type II (for all other Staff and Visitors)   | 6 Nos. |
| vii. Steel Almirah 1980mm X 915mm X 485mm   | 1 No.  |
| viii. Steel Almirah 1270mm X 765mm X 440mm  | 1 No.  |
| ix. Racks – 5 Tier 1800mm X 900mm X 375mm made of Slotted Angles and M.S. Sheets  | 3 Nos. |
| x. Ceiling Fans – 1400mm size. Ceiling Fans shall be of Approved Make and Colour  | 3 Nos. |
| xi. Computer with Printer, Scanner<br>Core i5 – 650 Processor (4M CACHE, 3.20 GHZ) with 4GB DDR3 RAM,<br>Hard Disc Capacity 500 GB, 22X DVD Writer, 17" size TFT Colour Monitor,<br>HP / Laser Printer of 80 Columns, 104 Keyboard, Optical Mouse with<br>Mouse Pad and HP Scanner along with Broad Band Connection | 3 Nos. |
| xii. Photo Copier   | 1 No.  |

In addition, the Contractor shall provide a well maintained Air Conditioned Car with Driver, Fuel, etc. round the Clock for a mileage of 2500km / month for use within the Municipal Limit of Bangalore City during the entire Contract Period for the Employer and its Representatives for Supervision of Works and shall also be responsible for the Maintenance of the Car. In case of Breakdown or during Maintenance of Vehicle, Alternate Vehicle shall be provided. This shall be incidental to Work and nothing extra shall be paid to the Contractor in this regard.

Further, the Contractor shall provide and maintain Wireless Communication System during entire Contract Period (consisting of 2 Nos. of Mobile Phones with SIM Card with Bill Ceiling Limit of Rs. 2000/- per mobile per month) for use by the Employer and its Representatives. This shall be incidental to Work and nothing extra shall be paid to the Contractor in this regard.

## 7.0 Field Laboratory

The Contractor shall provide and maintain adequately equipped Field Laboratory as required for Site Control on the Quality of Material and the Works. It shall have a minimum of 40 Sqm Area. The Field Laboratory shall be located as directed by the Employer or his approved Representative. It shall be provided with Amenities like Water Supply, Electric Supply, etc. The Laboratory will have all Services, Furniture, Equipments, etc. Minimum of the following Items shall be provided in the Field Laboratory. Any Additional Items as required for Testing / Evaluation in line with the Standard Procedures and Codal Provisions shall also be provided.

### 7.1 General

i. Oven – Electricity Operated, Thermostatically Controlled, Range upto 200°C, Sensitivity 1°C	1 No.
ii. Plat form balance 300 kg capacity	1 No.
iii. Balance 20 kg Capacity – Self Indicating Type	1 No.
iv. Electronic Balance 5kg Capacity – accuracy 0.5 gm	1 No.
v. Water Bath – Electrically Operated and Thermostatically Controlled with Adjustable Shelves, Sensitivity 10°C	1 No.
vi. Thermometers	4 Nos. each
a. Mercury – in – Glass Thermometer ranges 0 to 250°C	
b. Mercury – in – Steel Thermometer with 30 cm Stem, ranges up to 300°C	
vii. Glass Wares, Spatulas, Wire Gauzes, Steel Scales, Measuring Tape, Casseroles, Pans, Enameled Trays of Assorted Sizes, Pestle Mortar Porcelain Dishes, Gunny Bags, Plastic Bags, Chemicals, Digging Tools like Pickaxes, Shovels, etc.	As Required
viii. Set of IS Sieves with Lid and Pans 450mm Diameter with Sizes of 63 mm, 53mm, 37.5mm 26.5mm, 13.2mm, 9.5mm 6.7mm and 4.75mm	1 Set
200 mm Diameter of Sizes 2.36 mm, 2mm, 1.18 mm, 600 micron, 425 micron, 300 micron, 150 micron and 75 micron	1 Set
ix. Water Testing Kit for pH, SO <sub>3</sub> and Cl	1 Set
x. First Aid Box	1 Set

### 7.2 For Soils and Aggregates

i. Rifle Box	1 No.
ii. Atterberg's Limits (Liquid and Plastic Limits) Determination Apparatus	1 Set
iii. Compaction Test Equipment both 2.5 kg and 4.5 kg Rammers (Light and Heavy Compact Efforts)	1 Set
iv. Dry Bulk Density Test Apparatus (Sand Pouring Cylinder, Tray, Can, etc.) complete	1 Set
v. Speedy Moisture Meter complete with Chemicals	1 Set

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vi. Posthole Auger with Extensions	1 Set
vii. Core Cutter Apparatus complete with Dolly, Rammer, etc.	1 Set
viii. Flakiness and Elongation Test Gauges	1 Set
ix. Standard Measures of 30, 15 and 3 litres Capacity along with Standard Tamping Rod	1 Set

**7.3 For Cement and Cement Concrete**

i. Slump Test Apparatus	1 Set
ii. Compression and Flexural Strength Testing Machine of 200T Capacity with Additional Diameter for Flexural Testing	1 Set
iii. Cube Moulds for Concrete Tests	40 Nos.
iv. Surface Moisture and Density Meter for Soil, Aggregate and Concrete	1 No.

**8.0 Casting Yard**

The Contractor shall make his own Arrangements for the Construction and Maintenance of Casting Yard required for the Work. The Quoted Rate shall be deemed to be inclusive of the Element of Cost towards the above.

**9.0 Disputes**

In case of Disputes arising between the Contractor and the Authority approving the Designs, the matter may be referred to the Commissioner, BBMP. The Decision of the Commissioner, BBMP shall be Final and Binding on the Contractor.



## SECTION 7: CONTRACT DATA

Items Marked "N/A" do not apply in this Contract.

The following Documents are also part of the Contract.

### Clause Reference of General Conditions of Contract

- 1.1 The Employer: **The Commissioner**  
Address: **Bruhat Bangalore Mahanagara Palike**  
**N. R. Square**  
**Bangalore – 560 002**

Name of Authorized Representative: **Executive Engineer (RI – Spl)**  
**Bruhat Bangalore Mahanagara Palike**  
**N. R. Square**  
**Bangalore – 560 002**

- 1.2 The Name and Identification Number of the Contract:  
**TURN KEY LUMP SUM FIXED PRICE NO VARIATION TENDERS BASED ON  
TENDERER'S OWN DESIGN FOR THE WORK OF "Construction of Underpass On  
Sarjapura Road at Harlur Cross Road Junction, Bangalore"**

**No. BBMP/ EE (RI-Spl) / TEND / 06 / 2016 – 17 dated 27.07.2016**

The **"Scope of Work"** is detailed in Section 6.

- 1.3 The Start Date shall be the **Date of Issue of Notice to Proceed with the Work.**

- 1.4 Insurance Requirements are as under.

	Type of Cover	Minimum cover for Insurance for 12 months
(i)	Works and of Plant and Materials	The Sum stated in the Agreement plus 20%
(ii)	Loss or damage to equipment	Full Replacement Cost
(iii)	Loss or damage to property of Third Party	Full Replacement Cost
(iv)	Personal Injury or Death Insurance (a) for Third Party  (b) for Contractor's Employees or Labour	Rs. 20.00 Lakh to cover 4 Persons @ Rs. 5.00 Lakh each. In accordance with the Statutory Requirements Applicable to Karnataka.

- 1.5. The Methodology and Program of Construction: **10 Days from the Date of Entering into Agreement.**

- 1.6. The Schedule of Key and Critical Equipment to be deployed on the Work as per Agreed Program of Construction: **10 Days from the Date of Entering into Agreement.**

- 1.7 The Intended Completion Date for the whole of the Works: **18 Months from the Start Date including Monsoon with the Milestones as detailed in Annexure D.**
- 1.8 The Defects Liability Period is **24 Months from the Date of the Physical Completion of the Work in all respects and on issuance of Completion Certificate by the Competent Authority.**
- 1.9 The Liquidated Damages for the whole of the Works are **0.1% of the Final Contract Price per day** for the whole Works.
- 1.10 The Maximum amount of Liquidated Damages for the whole of the Works: **10% of Final Contract Price.**
- 1.11 The Amounts of the Advance Payment are

Nature of Advance	Amount (Rs.)	Conditions to be fulfilled
1. Mobilization	5% of the Contract Price	On submission of Unconditional Bank Guarantee. (To be drawn before end of 20% of Contract Period).

(The Advance Payment will be paid to the Contractor no later than 30 days after fulfillment of the above Conditions).

- 1.12 **Repayment of Advance Payment for Mobilization**  
The Advance Payment shall be repaid with Percentage Deductions from the Interim Payments certified by the Employer's site Representative under the Contract in five (5) equal Installments. Deductions shall commence in the next Interim Payment Certificate following that in which the total of all such Payments to the Contractor has reached not less than 15% of the Contract Price, always provided that the Loan shall be completely repaid prior to the Expiry of the Original Time for Completion pursuant to Clauses 17 and 26.
- 1.13 The Date by which "As Built Drawings" (in scale **1:100**) in 6 Sets are required is **within 4 Weeks from the Date of Completion of Works.**
- 1.14 The Amount to be withheld for failing to supply "As Built Drawings" by the date required is **Rs. 1000000/- for every week Delay beyond the Stipulated Deadline.**
- 1.15 The following Events shall also be fundamental breach of the contract:  
**1. The Contractor has contravened Clause 9 of CC.**
- 1.16 The Percentage to apply to the Value of the Work not completed representing the Employer's Additional Cost for completing the Works shall be **30%.**

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### **SECTION 8: SPECIFICATIONS**

**For Specifications, all the Relevant Sections of MoRT&H [Specifications for Road and Bridge Works (Latest Editions)], all the Relevant IRCs and Special Publications (Latest Edition) shall be referred.**

### **SECTION 9: DRAWINGS**

**Drawings are uploaded in the e – Procurement Portal.**

### **SECTION 10: FINANCIAL BID**

**Financial Bid is uploaded in the e – Procurement Portal.**

**Note:**

1. Item for which no Rate or Price has been entered in will not be paid for by the Employer when executed and shall be deemed Covered by the other Rates and Prices in the Financial Bid (Refer ITT Clause 11.2 and CC Clause 37.2).
2. The Turn Key Lump Sum Fixed No Variation Price shall be quoted by the Tenderer in Indian Rupees.
3. Where there is a Discrepancy between the Price Quoted in Figures and Words, the lower of the two will govern [Refer ITT Clause 24.1(a)].

**SECTION 11: FORMAT OF BANK GUARANTEE FOR PERFORMANCE SECURITY**

To: \_\_\_\_\_ [Name of Employer]  
\_\_\_\_\_ [Address of Employer]

WHEREAS \_\_\_\_\_ [Name and Address of Contractor] (hereinafter called "the Contractor") has undertaken, in pursuance of Contract No. \_\_\_\_\_ dated \_\_\_\_\_ to execute \_\_\_\_\_ [name of Contract and Brief Description of Works] (hereinafter called "the Contract");

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized Bank for the sum specified therein as Security for compliance with his Obligations in Accordance with the Contract.

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee.

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor, upto a total of Rs. \_\_\_\_\_ [Amount of Guarantee]<sup>5</sup> Rupees \_\_\_\_\_ [in words] and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of \_\_\_\_\_ [Amount of Guarantee]<sup>6</sup> as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the Terms of the Contract or of the Works to be performed there under or of any of the Contract Documents which may be made between you and the Contractor shall in any way release us from any Liability under this Guarantee, and we hereby waive Notice of any such Change, Addition or Modification.

This Guarantee shall be valid until 30 days from the Date of Expiry of the Maintenance Period of 36 months plus Claim Period of 6 months.

Signature and Seal of the Guarantor:  
Name of Bank:  
Address:  
Date:

<sup>5</sup> An Amount shall be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract.

<sup>6</sup> An Amount shall be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract.

**SECTION 12: BANK GUARANTEE FORMAT FOR EARNEST MONEY DEPOSIT**

To  
The Commissioner  
Bruhat Bangalore Mahanagara Palike  
N. R. Square  
Bangalore – 560 002

In accordance with your **Tender No. BBMP/EE (RI-Spl) / TEND / 06 / 2016 – 17 dated 27.07.2016** for the Work of **Construction of Underpass On Sarjapura Road at Harlur Cross Road Junction, Bangalore** (hereinafter called “the Tender”), M/s. \_\_\_\_\_ one of the Tenderers (hereinafter called the “the Tenderer”) having its Registered Office at \_\_\_\_\_, wishes to participate in the said Tender of second stage and an irrevocable Bank Guarantee against Earnest Money Deposit for an Amount of Rs. \_\_\_\_\_ (Rupees) is required to be submitted by the Tenderer towards the Tender Security.

KNOW ALL MEN by these presents that we, \_\_\_\_\_ (Name of Bank) of \_\_\_\_\_ (Name of Country) having our Registered Office at \_\_\_\_\_ (hereinafter called “the Bank”) at the Request of the Tenderer do hereby unequivocally and unconditionally guarantee the same Amount as stated above. The Bank is bound unto Bruhat Bangalore Mahanagara Palike, Bangalore (hereinafter called “the Employer”) in the same Amount as stated above for which Payment well and truly to be made to the said Employer, the Bank binds himself, his Successors and Assigns by these presents.

SEALED with the Seal of the said Bank this \_\_\_\_\_ day of \_\_\_\_\_ 2013.

The Conditions of this Obligation are:

1. If the Tenderer withdraws his Tender after Tender Opening during the Period of Tender Validity specified in the Tender Document; or
2. If the Tenderer does not accept the Correction of the Tender Price in accordance with the Instructions to Tenderers.
3. If the Tenderer having been notified of the Acceptance of his Tender by the Employer during the Period of Tender Validity
  - a. Fails or refuses to execute the Form of Agreement in accordance with the Instructions to Tenderers; or
  - b. Fails or refuses to furnish the Performance Security in accordance with the Instructions to Tenderers.

We undertake to pay to the Employer upto the above Amount upon Receipt of his First Written Demand, without the Employer having to substantiate his Demand, provided that in his Demand the Employer will note that the Amount claimed by him is due to him owing to the Occurrence of one or any of the Conditions, specifying the Occurred Condition or Conditions.

This Guarantee will remain in force upto and including \_\_\_\_\_ (Date) i.e. 210 (two hundred and ten) days after the Deadline Date for Tender Submission as such Deadline is stated in the Instructions to Tenderers or it may be extended by the Employer, Notice of which Extension (s) to the Bank shall be received from the Tenderer on whose behalf this Guarantee has been issued. Any Demand in respect of this Guarantee should reach the Bank not later than the above Date.

Date \_\_\_\_\_

Tenderer

Executive Engineer (RI – Spl)  
BBMP, Bangalore

Signature of the Bank \_\_\_\_\_

Seal of the Bank \_\_\_\_\_

Signature of the Witness \_\_\_\_\_

Name and Address of the Witness \_\_\_\_\_