



# Bhopal Smart City Development Corporation Limited



## REQUEST FOR PROPOSAL

July 2017

**“Visual Improvement/Augumentaion of street/colony by Architecture Redesigning of Footpath & Utility Duct, Road Markings, Directional signages, Landscaping/Horticulture works and other Miscellaneous works including O&M of Tendered works for Period of Two Years Under “SMART CITY MISSION” on design Procurement and Construction Basis at different places of Bhopal city”**

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**SECTION-1**

**NOTICE INVITING  
TENDER**

**Bhopal Smart City Development Corporation Limited**  
**NOTICE INVITING e-TENDER (NIT)**

BSCDCL invites online percentage rate /item rate tender as per schedule as under:

Name of the Work	“Visual Improvement/Augumentaion of street/colony by Architecture Redesigning of Footpath & Utility Duct, Road Markings, Directional signages, Landscaping/Horticulture works and other Miscellaneous works including O&M of Tendered works for Period of Two Years Under “SMART CITY MISSION” on design Procurement and Construction Basis at different places of Bhopal city”
Brief Scope of Work	Comprehensive Development of Place making/ Landscaping venues in Bhopal, including development of detailed design , engineering , procurement , erection and construction.
Estimated Cost	Rs. 9,70,05,850/- (Nine crore seventy lakhs five thousand eight hundred fifty rupees only.)
Period of Completion (Construction and O&M)	Nine months after Award of Work Order
Earnest Money Deposit	Rs. 9,70,059/- ( Nine lakhs Seventy thousand fifty nine rupees only)
Non-refundable cost of e- Tender Document	Rs. 20,000/- (Twenty thousands rupees only)
Purchase of Tender Start	27.07.17 17:00 Hrs
Purchase of Tender End Date	09.08.17 18:00 Hrs
Last date & time of submission of Online Tender( Bid Submission)	10.08.17 23:30 Hrs
Period during which hard copy of the documents as	11.08.17 12:00 Hrs
Date & Time of Opening of technical Bid	11.08.17 13:00 Hrs
Date & Time of Opening of Financial Bid	Will be intimated later to successful Bidder
Validity of offer	90 days from the date of opening of price bid.
Pre-Tender Meeting &	02.08.2017 At BSCDCL, Bhopal Office

The tender document can be downloaded from [www.mpeproc.gov.in](http://www.mpeproc.gov.in) “Corrigendum, if any, would appear only on the [www.mpeproc.gov.in](http://www.mpeproc.gov.in) web site and not to be published in any News Paper”.

S.No	Name of Bidder	Section	Clause No.	Page No.	Description of Bid Document	Queries/Suggestions/Proposed changes

The pre-bid Queries shall be submitted with the given excel formet (E-mail ID – [smartcitycell@bmconline.gov.in](mailto:smartcitycell@bmconline.gov.in))

## **ELIGIBILITY CRITERIA FOR BIDDER:**

1. The Bidder shall be registered contractor in of appropriate class with the Central Govt./ State Governments or Central / State Government Undertakings
2. The Bidder in their own name should have satisfactorily executed the work of similar nature Semi Govt. / Govt.& Public / Private Sector Organizations in India, during **last 7 years** ending last day of month previous to the one in which bids are invited as a prime Contractor (In case of private work TDS certificate along with agreement, completion should be submitted)

**Three similar completed works of similar nature each costing not less than 40% of the estimated cost**

**O R**

**Two similar completed works of similar nature each costing not less than 50% of the estimated cost.**

**O R**

**One completed work of similar nature of costing not less than 80 % of the estimated cost.**

**Similar works means consisting of following works.**

The Bidder should demonstrate through submission of experience certificates for collective experience of handling the following disciplines of work in the above contracts:

- i. Civil Works, structural work (RCC & steel) and Bitumen ,road Asphaltting
  - ii. On above similar nature works at; least out of the total project cost 25% cost shall be for
  - iii. Items which includes Footpaths, Construction/ Retro Fitting ,Place making works on roads Landscaping , Junction improvement providing street furniture etc. This cost shall be separately certificated and shown in the documents submitted for qualification of the Bidder duly authorized by the concern client.
  - iv. Plumbing & drainage including,
3. The average annual financial turnover during the last 3 years ending 2016-17 should not be less than 30% of the estimated cost. To ascertain this, Bidder(s) shall furnish the financial statement (Audited balance sheet) duly certified by Chartered Accountant.
  4. Bidder should submit Client/Users Certificate of satisfaction for the work they have executed.
  5. The Bidder(s) net worth should be positive in the past years.
  6. **Bidder should be able to demonstrate (documentary evidence) , either in house or through a consortium , experience and competence in the following.**
    - a. Execution of place making/ landscape works.
    - b. Landscape architecture design and horticulture
    - c. Comprehensive engineering works
  7. Number of members in a consortium shall not exceed 3 (Three)
    - a. Members of the Consortium shall nominate one member as the lead member (the "Lead Member")
    - b. The Application should include a brief description of the roles and responsibilities of individual Members, particularly with reference to technical obligations;
    - c. An individual Applicant cannot at the same time be member of a Consortium applying for Prequalification. Further, a member of a particular applicant Consortium cannot be member of any other applicant Consortium applying for pre-qualification

**Note:-**

1. The bidder should necessarily submit completion certificate of the Qualifying works from the client/user/ duly signed by an officer not below the rank of Executive Engineer or equivalent of the concerned organization
2. The Bidder shall submit the audited balance sheets / C A certified for last 3 years (2014-15,2015-16, 2016-17).
3. For the purpose of determination of turnover of the bidder, only turnover from building construction projects shall be considered. **This shall be backed by a certificate from the Statutory Auditors of the company/Chartered Accountant.** Turnover from real estate development, sale of RMC, trading or sale of flats or offices shall not be considered for evaluation.
4. For the purpose of determining the relationship of the Bidder with their group companies, only the following documents such as the Annual Report, Balance Sheet or the Auditor Certificate, shall be considered.
5. Net worth shall be calculated as the sum of share capital and free reserves and surplus. Accumulated losses if not adjusted in reserves and surplus and shown separate in the balance sheet shall be deducted from the sum of share capital and free reserves and surplus. Reserves on account of revaluation of fixed assets shall be excluded.
6. BSCDCL shall have the authority to make enquiries with the bidder's bankers and auditors.
7. The bidders shall indicate information regarding any litigation or arbitration resulting from contracts executed by the bidder in the last five years. The information shall include the name of the parties concerned, disputed amount, cause of litigation & matter in dispute.
8. Bidder shall have valid registration in GST registration' EPF Registration Certificate & PAN Card,
9. The bidder should not got black listed by any government organization (Central/State/PSU), bidder should submit affidavit signed by Director of the company.



**MEMORANDUM**

Annexure-I

<b>Sl. No.</b>	<b>Description</b>	<b>Cl. No. of NIT/ITT/Clauses of Contract )</b>	<b>Values/Description to be Applicable for Relevant Clause (S)</b>
1)	Name of Work		“Visual Improvement/Augmentation of street/colony by Architecture Redesigning of Footpath & Utility Duct, Road Markings, Directional signages, Landscaping/Horticulture works and other Miscellaneous works including O&M of Tendered works for Period of Two Years Under “SMART CITY MISSION” on design Procurement and Construction Basis at different places of Bhopal city”
2)	Client/Owner		Bhopal Smart City Development Corporation Limited
3)	Type of Tender		Online percentage rate /Item rate
4)	Earnest Money Deposit		Rs. 9,70,059/- ( Nine lakhs Seventy thousand fifty nine rupees only)
5)	Estimated Cost		Rs. 9,70,05,850/- (Nine crore seventy lakhs five thousand eight hundred fifty rupees only.)
6)	Time allowed for Completion of Work		Nine months after Award of Work Order including rainy season
7)	Mobilization Advance		<b>10%</b> of contract value
8)	Interest Rate of Mobilization Advance		Simple Interest Rate of 10 % Percent only) (Per Annum)
9)	Schedule of rates applicable		UADD 2012, Non Sor Items
10)	Validity of		90 (Ninety) Days
11)	Performance Guarantee		5.00 % (Five Percent Only) of contract value within 30 days from the issue of Letter of Award

12)	Security Deposit/Retention Money		5.00% (Five Percent Only) of the gross value of each running bill.
13)	Time allowed for starting the work		The date of start of contract shall be reckoned from 10 days after the date of agreement.
14)	Deviation limit beyond as per tender document except foundation.		Building work as per requirement. Annual repair & maintenance of buildings As per requirement.
			Note:- As per the requirement of the successful completion of the project. Prices shall be firm
15)	Deviation limit beyond as per tender document shall apply for Foundation		Building work as per requirement Annual repair & maintenance of buildings as per requirement
			Note:- As per the requirement of the successful completion of the project. Prices shall be firm
16)	Escalation		All rates as per Bill of Quantities (BOQ) quoted by contractor shall be firm and fixed for entire contract period as well as extended period for completion of the works. No escalation shall be applicable on this
17)	Operation and Maintenance Period		<b>Two (2) years after successful completion of individual works.</b>
18)	Defects Liability Period		<b>Two (2) years after successful completion of individual works.</b>

The intending Bidder must read the terms and conditions of BSCDCL carefully. He should only submit his tender if he considers himself eligible and he is in possession of all the documents required. Information and Instructions for Bidders posted on Website(s) shall form part of tender Document.

The Tender Document as uploaded can be viewed and downloaded free of cost by anyone including intending Bidder. But the tender can only be submitted after uploading the mandatory scanned documents such as:-

- 1 a) Proof of e-payment towards cost of tender document,
- b) Proof of online payment through e-portal [www.mpeproc.gov.in/](http://www.mpeproc.gov.in/) Bank Guarantee of any Nationalized or Commercial Scheduled Bank against in favor CEO, BSCDCL of EMD & All other documents shall be as per Notice Inviting e- tender.

List of Documents to be scanned and uploaded within the period of tender submission:

- a. Proof of online payment / Bank Guarantee of any Nationalized or all Commercial Scheduled Bank against EMD in favor of CEO, BSCDCL.

- b. Copy of documents related to qualifying requirement of bidders as per NIT clause. c. Letter of Acceptance of tender condition unconditional as per format enclosed
- d. Certificate of Financial Turnover duly certified by CA as indicated above.
- e. GST registration number , EPF registration, PAN No, TAN No
- f. Acknowledgement towards cost of tender fee submission
- g. All pages of all the Corrigendum (if any) duly signed by the authorized person. h. Affidavit as per “Appendix-O” of tender document.
- i. Acceptance letter and Affidavit/Undertaking for Blacklisting/ Debar. Bidder to submit the affidavit on Rs. 100 stamp paper as per attached format.
- j. Should submit the list of tools plant and machinery.

If any condition or conditional rebate is offered by the Bidder, their tender shall summarily be rejected.

The Bidders are required to quote strictly as per terms and conditions, specifications, standards given in the tender documents and not to stipulate any deviations.

After submission of the tender the Bidder can re-submit revised tender any number of times but before last time and date of submission of tender as notified.

When it is desired by BSCDCL to submit revised financial tender then it shall be mandatory to submit revised financial tender. If not submitted then the tender submitted earlier shall become invalid. On opening date, the Bidder can login and see the tender opening process. Contractor can upload documents in the form of JPG format and PDF format.

Contractor to upload scanned copies of all the documents including valid GST registration/EPF registration PAN NO. As stipulated in the tender document.

If the contractor is found ineligible after opening of tenders, his tender shall become invalid and cost of tender document and processing fee shall not be refunded.

If any discrepancy is noticed between the documents as uploaded at the time of submission of tender and hard copies as submitted physically by the contractor the tender shall become invalid and cost of tender document and processing fee shall not be refunded.

Notwithstanding anything stated above, BSCDCL reserves the right to assess the capabilities and capacity of the Bidder to perform the contract, in the overall interest of BSCDCL. In case, Bidder's capabilities and capacities are not found satisfactory, BSCDCL reserves the right to reject the tender.

#### **Instructions for financial bid submission-**

In case of Percentage Rate Tender, Contractor must ensure to quote single percentage rate in attached financial bid format. Quote should be in percentage higher or below on the SOR Rates the same is to quoted in the form of decimal only. For example if contractor wants to quote 5 percent higher then he have to quote 1.05 and if he wants to quote 5 percent below he have to quote 0.95 in given column of financial bid sheet.

In case of Item Rate Tender, price shall be entered against each item in the Bill of Quantities / Schedule of Quantities. The cost of item against which the contractor has failed to enter a rate or price shall be deemed to be covered by rates and prices of other items in Bill of Quantities / Schedule of Quantities and no payment shall be made for the quantities executed for items against which rate has not been quoted by the contractor.

In addition to this, while selecting any of the cells a warning appears that if any cell is left blank the same shall be treated as "0". Therefore, if any cell is left blank and no rate is quoted by the Bidder, rate of such item shall be treated as "0" (ZERO).

- i. Financial Bid format is uploaded in Excel Format in [www.mpeproc.gov.in](http://www.mpeproc.gov.in). At the time of financial bidding, bidder is requested to download the file, and update the same.
- ii . For SOR items bidder need to quote 1 plus percentage higher of below the quoted rate for example if bidder wants to quote 5% higher the SOR price then he have to quote 1.05 and similarly if he wants to quote 5% below the SOR price then he have to quote 0.95.
- iii. For Non SOR items bidder can quote for individual item rates in respective financial bid sheet.
- iv. Bidders are requested to check final figure in all the totals of all sheets. BSCDCL is not responsible for errors in the financial bid document.
- v. Bidders are required to upload the updated financial bid in the prescribed excel format in the [www.mpeproc.gov.in](http://www.mpeproc.gov.in) at the time of final financial bid submission.

**SECTION-2**

**INSTRUCTIONS TO BIDDER**

# Instruction to Bidder (ITB)

## A. **GENERAL INSTRUCTIONS:**

2. Bid is for the place making project within Bhopal Municipal Limit, for which tentative Quantity of items are taken in BOQ. Bidder will be assigned one or more locations within Municipal Limit which can be street /colony. It is expected from bidder that they will appoint an Architect/ Landscaper ( as case may be) to prepare design considering the items available in the BOQ or more and get it approved by the BSCDCL.
- 2.0 The overall lowest bidder of bid will get minimum 40% work of the lowest quoted amount . However rest of work can be given to all /one other technically qualified bidders, if they are ready to carry out the work at lowest bid (L1) rates.
- 2.1. General terms of Bidding-
  - 2.1.1 No Bidder shall submit more than one BID for the Project.
  - 2.1.2 Bidders are expected to carry out their own surveys, investigations and other Preliminary examination of the Project and market survey and the BSCDCL shall have no liability whatsoever in relation to or arising out of any or all contents of TENDER.
  - 2.1.3 Notwithstanding anything to the contrary contained in this RFP, the Preliminary terms specified in the draft Agreement shall have overriding effect; provided, however, that any conditions or obligations imposed on the Bidder hereunder shall continue to have effect in addition to its obligations under the Agreement.
  - 2.1.4 The BID shall be furnished in the financial bid format attached separately in the Excel format
    1. BID to be quote 1 plus % above or below (for Example. If want to quote 5% above then write 1.05 and if want to quote 5% below then write 0.95) for the SOR sheets.
    2. BID shall be quoted item wise in the given excel sheet for the NON SOR items.
  - 2.1.5 The Bidder shall deposit a BID Security (EMD Rs. 9,70,059/- ( Nine lakhs Seventy thousand fifty nine rupees only) in accordance with the provisions of this RFP. The Bidder has to provide the BID Security (EMD) through online payment or in the form of a Bank Guarantee acceptable to the BSCDCL, as per format.  
Company Name: Bhopal Smart City Development Corporation Ltd.  
Branch Name: Allahabad Bank.  
Branch Address: Arera Colony, Bhopal  
A/C no. : 50327343809  
IFSC Code: ALLA0210197  
PAN No. : AAGCB6537N  
TIN No. : 23889236926  
Service Tax No. : AAGCB6537NSD001  
GST no: 23AAGCB6537N1ZE
  - 2.1.6 The validity period of the Bank Guarantee, shall not be less than 180 (one hundred and eighty) days from the BID Due Date, inclusive of a claim period of 60 (Sixty) days, and may be extended as may be mutually agreed between the BSCDCL and the Bidder.
  - 2.1.7 The BID shall be summarily rejected if it is not accompanied by the BID Security. The BID Security shall be refundable no later than 150 (one hundred and fifty) days from the BID Due Date except in the case of the Selected Bidder whose BID Security shall be retained till it has provided a Performance Security under the Agreement.
  - 2.1.8 The Bidder should submit a Power of Attorney as per the format, authorizing the signatory of the BID to commit the Bidder.

- 2.1.9 Any condition or qualification or any other stipulation contained in the BID shall render the BID liable to rejection as a non-responsive BID.
- 2.1.10 The BID and all communications in relation to or concerning the Bidding Documents and the BID shall be in English language.
- 2.1.11 The documents including this RFP and all attached documents, provided by the BSCDCL are and shall remain or become the property of the BSCDCL and are Transmitted to the Bidders solely for the purpose of preparation and the submission of a BID in accordance herewith. Bidders are to treat all information as strictly confidential and shall not use it for any purpose other than for preparation and submission of their BID.
- 2.1.12 The provisions of this Clause shall also apply mutatis mutandis to BIDs and all other Documents submitted by the Bidders, and the BSCDCL will not return to the Bidders any BID, document or any information provided along therewith.
- 2.1.13 This RFP is not transferable.
- 2.1.14 Any award of Project pursuant to this RFP shall be subject to the terms of Bidding Documents and also fulfilling the criterion as mentioned in tender document.
- 2.1.15 While bidding is open to persons from any country, the following provisions shall apply then the Eligibility of such Bidder shall be subject to approval of the BSCDCL from national security and public interest perspective. The decision of the BSCDCL in this behalf shall be final and conclusive and binding on the Bidder. The holding or acquisition of equity or control, as above, shall include direct or indirect holding/ acquisition, including by transfer, of the direct or indirect legal or beneficial ownership or control, by persons acting for themselves or in concert and in determining such holding or acquisition, the BSCDCL shall be guided by the principles, precedents and definitions contained in the Securities and Exchange Board of India (Substantial Acquisition of Shares and Takeovers) Regulations,1997, or any substitute thereof, as inforce on the date of such acquisition. The Bidder shall promptly inform the BSCDCL of any change in the shareholding, as above, and failure to do so shall render the Bidder liable for disqualification from the Bidding Process.
- 2.1.17 Notwithstanding anything to the contrary contained herein, in the event that the Bid Due Date falls within three months of the closing of the latest financial year of a Bidder, it shall ignore such financial year for the purposes of its Bid and furnish all its information and certification with reference to the 5 (five) years or 1 (one) year, as the case may be, preceding its latest financial year. For the avoidance of doubt, financial year shall, for the Purposes of a Bid hereunder, mean the accounting year followed by the Bidder in the course of its normal business. Latest Financial Year will be (2016-2017)
- 2.1.18 Any entity which has been barred by GOI or Govt. of Madhya Pradesh for the works of expressways, National highways, and the bar subsists as on the Bid Due Date, would not be eligible to submit the BID, bidder need to submit Affidavit regarding the same.
- 2.1.19 The BSCDCL reserves the right to reject an otherwise eligible bidder on the basis of the information provided in tender document. The decision of the BSCDCL in this case shall be final.

## **2.2 Eligibility and qualification requirements of Bidder**

### **2.2.1 For determining the eligibility of Bidder the following shall apply:**

(a) An Bidder shall not have a conflict of interest (the “Conflict of Interest”) that affects the Bidding Process. Any Bidder found to have a Conflict of Interest shall be disqualified and liable for forfeiture of the BID Security or Performance Security as the case may be. A Bidder shall be deemed to have a Conflict of Interest affecting the Bidding Process, if:

(b) A Bidder shall be liable for disqualification and forfeiture of BID Security, if any legal, financial or technical adviser of the BSCDCL in relation to the Project is engaged by the Bidder, its Member or any Associate thereof, as the case may be, in any manner

formatters related to or incidental to such Project during the Bidding Process or subsequent to the (i) issue of the LOA or (ii) execution of the Agreement. In the even though such adviser is engaged by the selected Bidder or Contractor, as the case may be, after issue of the LOA or execution of the Agreement for matters related or incident also the project, then notwithstanding anything to the contrary contained herein or in the LOA or the Agreement and without Prejudice to any other right or remedy or the BSCDCL, including the forfeiture and appropriation of the BID Security or Performance Security, as the case may be, which the BSCDCL may have there under or otherwise, the LOA or the Agreement, as the case may be, shall be liable to be terminated without the BSCDCL being liable in any manner whatsoever to the Selected Bidder or Contractor for the same. For the avoidance or doubt, this disqualification shall not apply where such adviser was engaged by the Bidder, its Member or Associate in the past but its assignment expired or was terminated 6 (six) months prior to the date of issue of this RFP. Nor will this disqualification apply where such adviser is engaged after a period of 3 (three) years from the date of commercial operation of the Project.

### Other Instructions-

On line percentage rate/ Item rate tenders on behalf of Owner/Client are invited for the work. The pre-qualification / enlistment of the contractors should be valid on the last date of submission of tenders. In case the last date of submission of tender is extended, the pre-qualification of contractor should be valid on the original date of submission of tenders.

The work is estimated to Rs 9,70,05,850/- (Nine crore seventy lakhs five thousands eight hundred fifty only ) however, is given merely as a rough guide.

The tender document as uploaded can be seen on website [www.mpeproc.gov.in](http://www.mpeproc.gov.in) and can be downloaded free of cost.

#### Mode of Submission:

##### Earnest Money Deposit

Earnest Money Deposit of amount as mentioned in “NIT/ Memorandum (Annexure-I)” required to be submitted along with the tender shall be payable online through E-tendering portal [www.mpeproc.gov.in](http://www.mpeproc.gov.in) through NEFT/RTGS. The EMD shall be valid for minimum period of 150 (One Hundred Fifty) days from last day of submission of Tender.

The EMD of all unsuccessful Bidders will be returned within thirty (30) days of the Award of the contract to successful Bidder through online portal.

Financial Bidding can be done through the excel sheet uploaded on [www.mpeproc.gov.in](http://www.mpeproc.gov.in), which contains two sheets:

1. UADD 2012
2. NON SOR

\*BID to be quote 1 plus % above or below (for Example. If want to quote 5% above then write 1.05 and if want to quote 5% below then write 0.95) for SOR items.

\*Rates for NON SOR item can be filled in the NON SOR sheet

\*Rates can be quoted in the yellow highlighted cell of the financial bid

\* Bidder should fill there company/organization name in the space provided (yellow section)

Interested Bidder who wish to participate in the tender has also to make following payments through online payment e-proc portal only.

Cost of Tender Document –Rs. 20000/- (Twenty thousands rupees only) To be submit online only/-

e-Tender Processing Fee – As applicable for MPEPROC portal, Cost of Tender Document and, e-Tender Processing Fee online payment shall be payee online Copy of pre- qualification/enlistment letter and certificate of work experience (if required) and other documents as specified in the tender shall be scanned and uploaded to the e-Tendering website within the period of tender submission.

Online technical tender documents submitted by intending Bidders shall be opened only of those Bidders, whose Earnest Money Deposit, Cost of Tender Document and e- Tender Processing Fee and other.



The tender submitted shall become invalid if: the Bidder is found ineligible.  
The Bidder does not upload all the documents (including GST registration) as stipulated in the tender document. If any discrepancy is noticed between the documents as uploaded at the time of submission of tender and hard copies as submitted physically in the office of tender opening authority.

**VALIDITY OF TENDER**

The tender for the works shall remain open for acceptance for a period of Ninety (90) days from the date of opening of financial tender. If any Bidder withdraws his tender before the said period or issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the tender which are not acceptable to the BSCDCL, then the BSCDCL shall, without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money as aforesaid. Further the Bidders shall not be allowed to participate in the retendering process of work.

**ACCEPTANCE OF TENDER**

BSCDCL reserves the right to reject any or all the tenders in part or full without assigning any reason whatsoever. BSCDCL does not bind itself to accept the lowest tender.

The tenders shall be strictly as per the conditions of contract. Tenders with any additional condition(s)/modifications shall be rejected.

The witnesses to the Tender/Contract Agreement shall be other than the Bidder/Bidders competing for this work and must indicate full name, address, and status/occupation with dated signatures.

The acceptance of tender will rest with the BSCDCL who does not bind itself to accept the lowest tender and reserves to itself the right to reject any or all the tenders received without assigning any reason thereof. Tenders in which, any of the prescribed conditions are not fulfilled or found incomplete in any respect are liable to be rejected.

Ie. The overall lowest bidder of contract will get minimum work of 40% of the awarded amount. However rest of work can be given to all other technically qualified bidders, if they are ready to carry out the work at lowest bid (L1) rates.

On acceptance of tender, the name of the accredited representative(s) of the contractor who would be responsible for taking instructions from Engineer-in-Charge or its authorized representative shall be intimated by the contractor within 07 days of issue date of letter of Awards by BSCDCL.

The Bidder shall not be permitted to tender for works if his near relative is posted in the project office or concerned Office of the BSCDCL. The contractor shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any of the officers in BSCDCL. Any breach of this condition by the Bidder would render him liable to the withdrawal of the work awarded to him and forfeiture of Earnest Money and Security Deposit. This may also debar the contractor from tendering for future works under BSCDCL.

For the purpose of operation of this clause a near relative shall mean wife, husband, parents, grandparents, children, grandchildren, brothers, sisters, uncles, aunts, cousins and their corresponding in-laws.

The time of completion of the entire work, as contained in contract shall be as mentioned in "Memorandum - Annexure-I", which shall be reckoned from the 10th day after issue of the letter of Award by the BSCDCL.

Canvassing whether directly or indirectly, in connection with Bidders is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable for rejection.

The tender award, execution and completion of work shall be governed by tender documents consisting of (but not limited to) Letter of Award/Letter of work order, Bill of Quantities, Special Conditions of Contract, General Conditions of Contract, Specifications, Drawings. The Bidders shall be deemed to have gone through the various conditions including sub-soil water conditions, topography of the land, drainage and accessibility etc. or any other condition which in the opinion of contractor will affect his price/rates before quoting their rates. No claim whatsoever against the foregoing shall be entertained.

The drawings with the tender documents are Tender Drawing and are indicative only.

**ADDENDA/CORRIGENDA**

Addenda/Corrigenda to the tender documents may be issued prior to the date of submission of the tender to clarify or effect modification in specification and/or contract terms included in various tender documents. The Bidder shall suitably take into consideration such Addenda/Corrigenda while submitting his tender. The Bidder shall return such Addenda/Corrigenda duly signed and stamped as confirmation of its receipt & acceptance and submit along with the tender document. All addenda/ Corrigenda shall be signed and stamped on each page by the Bidder and shall become part of the tender and contract documents.

**SITE VISIT AND COLLECTING LOCAL INFORMATION**

Before tendering, the Bidders are advised to visit the site, its surroundings to assess and satisfy themselves about the local conditions such as the working and other constraints at site, approach roads to the site, availability of water & power supply, application of taxes, duties and levies as applicable & any other relevant information required by them to execute complete scope of work. The Bidder may obtain all necessary information as to risks, weather conditions, contingencies & other circumstances (insurgencies etc.) which may influence or affect their tender prices. Bidder shall be deemed to have considered site conditions whether he has inspected it or not and to have satisfied himself in all respect before quoting his rates and no claim or extra charges whatsoever in this regard shall be entertained / payable by the BSCDCL at a later date.

### **ACCESS BY ROAD**

Contractor, if necessary, shall build temporary access roads to the actual site of construction for the works at his own cost to make the site accessible. The Contractor shall maintain the same in motorable condition at all the times as directed by Engineer-in- Charge at his own cost. The contractor shall be required to permit the use of any roads so constructed by him for vehicles of BSCDCL or any other agencies/ contractors who may be engaged on the project site, free of cost. Non-availability of access roads or approach to site, for the use of the contractor shall in no case condone any delay in the execution of work nor be the cause for any claim for compensation.

### **HANDING OVER & CLEARING OF SITE**

The Contractor should note that area for construction may be made available in phases as per availability and in conjunction with pace of actual progress of work at site. The work may be required to be carried out in constrained situations. The work is to be carried out in such a way that the traffic, people movement, if any, is kept operative and nothing extra shall be payable to the contractor due to this phasing / sequencing of the work. The contractor is required to arrange the resources to complete the entire project within total stipulated time. Traffic diversion, if required, is to be done and maintained as per requirement of local traffic police or/and as per specification, by the contractor at his own cost and the contractor shall not be entitled for any extra payment, whatsoever, in this regard.

The efforts will be made by the BSCDCL to handover the site to the Contractor free of encumbrances. However, in case of any delay in handing over of the site to the Contractor, the BSCDCL shall only consider suitable extension of time for the execution of the work. It should be clearly understood that the BSCDCL shall not consider any revision in contract price or any other compensation whatsoever viz. towards idleness of contractor's labour, equipment etc. Old structures on the proposed site, if required, shall be demolished by the contractor properly at his own cost unless and otherwise mentioned elsewhere in the tender document. The useful material obtained from demolition of structures & services shall be the property of the owner/BSCDCL and these materials shall be stacked in workmanship like at the place specified by the Engineer-in- charge.

Necessary arrangement including its maintenance is to be made by the contractor for temporary diversion of flow of existing drain and road, as the case may be. The existing drain, road would be demolished, wherever required, with the progress of work under the scope of proposed project. The existing Road and Drain which are not in the alignment of the said project but are affected and/ or need to demolished during execution for smooth progress of the project, shall be rehabilitated to its original status and condition (including black topping) by the contractor at his own cost. The cost to be incurred by contractor in this regards shall be deemed to be included in the quoted rates of the bill of quantity items and contractor shall not be entitled for any extra payment whatsoever in this regard. The information about the public utilities (whether over ground or underground) like electrical/ telephone/ water supply lines, OFC Cables, open drain etc. is the responsibility of contractor to ascertain the utilities that are to be affected by the works through the site investigation.

The contractor shall be responsible to obtain necessary approval from the respective authorities for shifting/ re-alignment of existing public utilities. BSCDCL shall only assist the contractor for visioning in obtaining the approval from the concerned authorities.

Any services affected by the works must be temporarily supported by the contractor who must also take all measures reasonably required by the various bodies to protect their services and property during the progress of works. It shall be deemed to be the part of the contract and no extra payment shall be made to the contractor for the same.

## **ORDER OF PRECEDENCE OF DOCUMENTS**

In case of difference, contradiction, discrepancy, with regard to conditions of contract, Specifications, Drawings, Bill of quantities etc. forming part of the contract, the following shall prevail in order of precedence.

Letter of Award, along with statement of agreed variations and its enclosures, if any. Description of Bill of Quantity / Schedule of Quantities.

Special Condition of Contract.

Technical specifications (General, Additional and Technical Specification) as given in Tender documents.

General Conditions of Contract. Drawings

CPWD/UADD specifications (as specified in Technical Specification of the Tender) update with correction slips issued up to last date of receipt of tenders.

Relevant B.I.S. Codes under the contract.

## **Financial Bid**

Online tender filled in either percentage plus or minus Bid to be quoted 1 plus % above or below( for example: If want to quote 5% above the write 1.05 and if want to quote 5% below then write 0.95) in the given uploaded Excel Sheet format.

For NON SOR item sheet individual rates has to be quoted for each item in the given uploaded excel sheet

**(If entered '0' it will be treated as 'at par'. By default the value is zero only).**

**Note: In case of rebate/premium of 15% and above as quoted by the Bidder, the rate analysis of major items shall be submitted by L1 and L2 bidder after demand notification by e-mail to bidders by concerned by EIC.**

## **BID SECURITY OR EMD**

The Bidder shall furnish, as part of the Bid, Bid Security/EMD, in the amount specified in the Bid Data Sheet. This bid security shall be in favor of the authority mentioned in the Bid Data Sheet and shall be valid till the validity of the bid.

Any bid not accompanied by an acceptable Bid Security and not secured as indicated in sub-clause mentioned above, shall be rejected by the Employer as non-responsive.

The Bid Security of the successful Bidder will be discharged when the Bidder has signed the Agreement and furnished the required Security Deposits.

The Bid Security may be forfeited:

- a) if the Bidder withdraws the Bid after bid opening (opening of technical qualification part of the bid during the period of Bid validity;
- b) in the case of a successful Bidder, if the Bidder fails within the specified time limit to:
  - i. sign the Agreement; and/or
  - ii. Furnish the required Security Deposits.

No rejections and forfeiture shall be done in case of curable defects,. For non-curable defects the 10% of EMD shall be forfeited and bid will be liable for rejection.

Failure of the bidder to submit the documents mentioned under the curable defects after the return correspondence from the Employer will lead to rejection of Bid.

**Note:**

**Curable Defect shall mean shortfalls in submission such as:  
submission of False documents**

**ACCEPTANCE OF TENDER CONDITIONS**

From: (On the letter head of the company by the authorized officer having power of attorney)

BSCDCL Limited,  
\_\_\_\_\_  
\_\_\_\_\_

**Sub: Name of the work & NIT No.:**

Sir,

This has reference to above referred tender. I/We are pleased to submit our tender for the above work and I/We hereby unconditionally accept the tender conditions and tender documents in its entirety for the above work. I/we are eligible to submit the tender for the subject tender and I/We are in possession of all the documents required. I/We have viewed and read the terms and conditions of this GCC/SCC carefully. I/We have downloaded the following documents forming part of the tender document:

- a) Notice Inviting e-Tender
- b) Quoting Sheet for Bidder
- c) Instructions to Bidders & General Conditions of Contract (Vol- I/2013)
- d) Technical Specifications (Vol-II)
- e) Bill of Quantities (Vol-III)
- f) Tender Drawing  
Acceptance of Tender Conditions (Annexure II)
- g) Corrigendum, if any

I/we have uploaded the mandatory scanned documents such as cost of tender document, EMD, e- Tender Processing Fee and other documents as per Notice Inviting e-tender AND I/We agree to pay the cost of tender document, EMD, e-Tender Processing Fee (only receipt/proof of online payment) and other documents in the form and manner as described in NIT/ITB .Should this tender be accepted, I/We agree to abide by and fulfill all terms and conditions referred to above and as contained in tender documents elsewhere and in default thereof, to forfeit and pay BSCDCL, or its successors or its authorized nominees such sums of money as are stipulated in the notice inviting tenders and tender documents. If I/we fail to commence the work within 10 days of the date of issue of Letter of Award and/or I/we fail to sign the agreement as per Clauses of Contract and/or I/we fail to submit performance guarantee as per Clauses of Contract, I/we agree that BSCDCL shall, without prejudice to any other right or remedy, be at liberty to cancel the Letter of Award and to forfeit the said earnest money as specified above.

Dated: \_\_\_\_\_

Yours faithfully,  
(Signature of the Bidder with rubber stamp)

## **SECTION-3**

# **GENERAL CONDITIONS OF CONTRACT (GCC)**

## CLAUSES OF CONTRACT (CC)

### DEFINITIONS

The Contract means the documents forming the tender and acceptance thereof and the formal agreement executed between the competent authority on behalf of BSCDCL and the contractor, together with the documents referred to therein including these conditions, the specifications, Designs, drawings and instructions issued from time to time by the Engineer-in- Charge and all these documents taken together, shall be deemed to form one contract and shall be complementary to one another. Bhopal Smart City Development Corporation Limited, hereinafter called 'BSCDCL' proposes to get the works executed as mentioned in the Contract on behalf of Owner/ Client as Implementing agency/Executing Agency.

- 3.1 In the contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them:-

**APPROVAL** means approved in writing including subsequent written confirmation of previous verbal approval.

**BILL OF QUANTITIES or SCHEDULE OF QUANTITIES** means the priced and completed Bill of Quantities or Schedule of Quantities forming part of the tender.

**CONTRACTOR** shall mean the individual, firm, LLP or company, whether in corporate or not, undertaking the works and shall include the legal personal representative of such individual or the persons composing such firm or LLP or company, or the successors of such firm or company and the permitted assignees of such individual, firm or company.

**CONTRACT VALUE** means the sum for which the tender is accepted as per the letter of Award.

**DRAWINGS** mean the drawings referred to in the contract document including modifications if any and such other drawings as may from time to time be furnished and/ or approved by BSCDCL.

**DATE OF COMMENCEMENT OF WORK:** The date of start of contract shall be reckoned from 10 days after the date of issue of letter of Award.

**ENGINEER-IN-CHARGE** means the Engineer of BSCDCL who shall supervise and be in-charge of the work.

**LANGUAGE:** All documents and correspondence in respect of this contract shall be in English Language.

**“LETTER OF AWARD”** shall mean BSCDCL’s letter or notification conveying its acceptance of the tender subject to such conditions as may have been stated There in.

**MONTH** means English Calendar month ‘Day’ means a Calendar day of 24 Hr **BSCDCL** shall means Bhopal Smart City Development Corporation Limited, a company registered under the Indian Company Act, with its registered office at Near Tatpar Petrol Pump, Sector A, Berkheda, Bhopal, Madhya Pradesh 462023 or its Administrative officers or its engineer or

other employees authorized to deal with any matter with which these persons are concerned on its behalf.

**OWNER/ CLIENT** means the Government, Organization, Ministry, Department, Society, Cooperative, etc. who has awarded the work/ project to BSCDCL and/ or appointed BSCDCL as Implementing / Executing Agency/ Project Manager and/ or for whom BSCDCL is acting as an agent and on whose behalf BSCDCL is entering into the contract and getting the work executed.

**SCHEDULE(s)** referred to in these conditions shall mean the standard schedule of rates of the government mentioned in the Memorandum (Annexure-I) with the amendments thereto issued up to the date of receipt of the tender.

**SITE** means the lands and other places on, under, in or through Which the works are to be executed or carried out and any other lands or places provided by BSCDCL/client/owner or used for the purpose of the contract.

**TENDER** means the Contractor's priced offer to BSCDCL for the execution and completion of the work and the remedying of any defects therein in accordance with the provisions of the Contract, as accepted by the Letter of Award or Award letter. The word TENDER is synonymous with Tender and the Word TENDER DOCUMENTS with "Tendering Documents" or "offer documents".

**WRITING** means any manuscript typed written or printed statement under or over signature and/or seal as the case may be.

**Works or Work** shall unless there be something either in the subject or context repugnant to such construction, be construed and taken to mean the works by or by virtue of the contract contracted to be executed whether temporary or permanent, and whether original, altered, substituted or additional. The headings in the clauses/ conditions of tender documents are for convenience only and shall not be used for interpretation of the clause/ condition. Words imparting the singular meaning only also include the plurals and vice versa where the context requires. Words importing persons or parties shall include firms and corporations and organizations having legal capacities.

**Excepted Risk** are risks due to riots (other than those on account of contractor's employees), war (whether declared or not) invasion, act of foreign enemies, hostilities, civil war, rebellion revolution, insurrection, military or usurped power, any acts of Government, damages from aircraft, acts of God, such as earthquake, lightening and unprecedented floods, and other causes over which the contractor has no control and accepted as such by the BSCDCL or causes solely due to use or occupation by Government of the part of the works in respect of which a certificate of completion has been issued or a cause solely due to BSCDCL's faulty design of works.

**Market Rate** shall be the rate as decided by the Engineer-in-Charge on the basis of the prevailing cost of materials and labour at the site where the work is to be executed plus the percentage mentioned elsewhere in the tender document to cover, all overheads and profits.

**PERFORMANCE GUARANTEE:**

"Within 30 (Thirty) days from the date of issue of letter of Award or within such extended time as may be granted by BSCDCL in writing, the contractor shall submit to BSCDCL an irrevocable performance bank guarantee in the form appended, from any Nationalized Bank or all Commercial schedule bank equivalent to 5% (five per cent only) of the contract value for



the due and proper execution of the Contract. The Performance Guarantee shall be initially valid up to the stipulated date of completion plus 60 days beyond that. In case the time for completion of works gets extended, the contractor shall get the validity of Performance Guarantee extended to cover such extended time for completion of work.

BSCDCL reserve the right of forfeiture of the performance guarantee in the event of the contractor's failure to fulfill any of the contractual obligations or in the event of termination of contract as per terms and conditions of contract.

Performance guarantee shall be returned after successful completion / testing / commissioning and handing over the project to the client up to the entire satisfaction of BSCDCL / Client.

In case the contractor fails to submit the performance guarantee of the requisite amount within the stipulated period or extended period, letter of Award automatically will stand withdrawn and EMD of the contractor shall be forfeited.

### **SECURITY DEPOSIT/RETENTION MONEY**

The Security deposit or the retention money shall be deducted from each running bill of the contractor @ 5% (five per cent only) of the gross value of the Running Account bill. Earnest money shall be adjusted first in the security deposit and further recovery of security deposit shall commence only when the upto date amount of security deposit exceeds the earnest money deductible under this clause. No Interest shall be paid on amount so deducted. Security deposit will be released after completion of defect liability period.

In lieu of security deposit /retention money BG can be submitted which shall be released after completion of defect liability period.

The release/refund of security deposit of the contractor shall be subject to the observance/compliance of the conditions as under and whichever is later:

- a) Expiry of the defect liability period in conformity with provisions contained in clause (Defect liability clause). The expiry of defect liability period shall be extended from time to time depending upon extension of time granted by BSCDCL. The contractor produces a clearance certificate from the labour office. As soon as the work is virtually completed, the contractor shall apply for the labour clearance certificate to the Labour Officer under intimation to the Engineer-in-Charge. The Engineer-in-Charge, on receipt of the said communication, shall write to the Labour Officer to intimate if any complaint is pending against the contractor in respect of the work. If no complaint is pending, on record till after 3 months after completion of the work and/or no communication is received from the Labour Officer to this effect till six months after the date of completion, it will be deemed to have received the clearance certificate.
- 3.2 BSCDCL reserves the right of part or full forfeiture of security deposit in addition to other claims in the event of contractor's failure to fulfill any of the contractual obligations or in the event of termination of contract as per terms and conditions of contract.

### **MOBILIZATION ADVANCE**

Mobilization advance up to maximum of amount as mentioned in the

“Memorandum (Annexure-I)” shall be paid to the contractor, if requested by him, on submission of irrevocable Bank Guarantee valid for contract period of an amount 1.2 times of the mobilization advance to take care of advance and interest at prescribed rate from a nationalized bank or all Commercial scheduled bank in the enclosed Performa. The Mobilization advance shall be interest bearing @ as mentioned in the “Memorandum (Annexure-I)”. This advance shall be paid in three installments as follows:

First Installment of fifty percent of total mobilization advance shall be paid after the agreement is signed and upon submission of performance guarantee for full amount as specified.

2nd installment of twenty five percent of total mobilization advance will be paid after the setting up of site office and site laboratory, complete mobilization of plant and machinery, scaffolding & shuttering materials etc.

The Balance twenty five percent of total mobilization advance shall be paid on completion of 10% of work in terms of cost and after the contractor has fully mobilized the work at site.

The mobilization advance bear simple interest at the rate as mentioned in the Memorandum (Annexure-I) and shall be calculated from the date of payment to the date of recovery (365 days in a year) both days inclusive, on the outstanding amount of advance. Recovery of such mobilization advanced including interest shall be made by the deduction from the contractor's bills commencing after first ten percent of the gross value of the work is executed and paid, on pro-rata percentage basis to the gross value of the work billed beyond 10% in such a way that the entire advance is recovered either by the time eighty percent of the gross value of the contract is executed and paid, together with interest due on the entire outstanding amount up to the date of recovery of the installment or on expiry of eighty percent of contract period (i.e. time allowed for completion of work in terms of Memorandum-Annexure-I) whichever is earlier. The bank guarantee submitted by contractor against mobilization advance shall initially be made for the full amount as mentioned in para 4.1 above

and valid for the contract period, and be kept renewed from time to time to cover the balance amount and likely period of completion of recovery together with interest. However, the contractor can submit part bank guarantees against the mobilization advance in as many numbers as per proposed number of recovery installments equivalent to the amount of each installment.

Notwithstanding what is contained above, no mobilization advance whatsoever shall be payable, if payment of mobilization advance is not mentioned in the Memorandum (Annexure- I).

#### **SECURED ADVANCE AGAINST NON-PERISHABLE MATERIALS**

Interest free secured advance up-to a maximum of 75 % (seventy five percent) of the Market Value of the Materials or the 75 % (seventy five percent) cost of materials as derived from the tendered item rate of the contractor, whichever is less, required for incorporation in the permanent works and brought to site and duly certified by BSCDCL site Engineer shall be paid to the Contractor for all non-perishable items as per UADD/MPPWD/CPWD norms. The advance will be paid only on submission of Indemnity Bond in the prescribed pro-forma. The advance shall be recovered in full from next Running Account bill and fresh advance shall be paid for the balance quantities of materials. The contractor shall construct suitable go-down at the site of work for safe storage of the materials against any possible damages due to sun, rain, dampness, fire, theft etc. at his own cost. He shall also employ necessary watch & ward establishment for the purpose at his costs and risks.

Such secured advance shall also be payable on other items of perishable nature, fragile and combustible with the approval of the Engineer-in-Charge provided the contractor provides a comprehensive insurance cover for the full cost of such materials. The decision of the Engineer-in-Charge shall be final and binding on the contractor in this matter. No secured advance shall however, be paid on high risk materials such as ordinary glass, sand, petrol, diesel etc.

#### **DEVIATIONS / VARIATIONS EXTENT AND PRICING**

The Engineer-in-Charge shall have power (i) to make any alterations in, omissions from, additions to or substitutions for, the original specifications, drawings, designs and instructions that may appear to him to be necessary during the progress of the work, (ii) to omit part of the works in case of non-availability of a portion of the site or for any other reasons and the contractor shall be bound to carry out the works in accordance with any instructions given to him in writing signed by the Engineer-in-Charge and such alterations, omissions, additions, or substitutions shall form part of the contract as if originally provided therein and any altered, additions or substituted works which the contractor may be directed to do in the manner specified above as part of the work, shall be carried out by the contractor on the same conditions in all respects including price on which he agreed to do the main work except as hereunder provided:

The time for the completion of the work shall, in the event of any deviations resulting in additional cost over the tendered value sum being ordered be extended, if requested by the contractor, as follows:

in the proportion which the additional cost of the altered, additional or substituted work bears to the original tendered value plus 25% of the time calculated in (i) above or such further additional time as may be considered reasonable by the Engineer-in-Charge.

If the extra items includes any work for which no rate is specified in the contract, then such work shall be carried out at the rates entered in the schedule of rates (as mentioned in Memorandum (Annexure-I)) for Civil Works minus/plus the percentage which the tendered amount of scheduled items bears with the estimated amount of schedule items based on the Schedule of Rates (as mentioned in Memorandum (Annexure-I) for Civil/ Sanitary Works). The scheduled item means the items appearing in the Schedule of Rates (as mentioned in Memorandum (Annexure-I)for Civil/ Sanitary Works) which shall be applicable in this clause. This clause will apply mutates mutandis to electrical work except that Electrical Schedule of Rates as mentioned in Memorandum (Annexure-I) will be considered in place of Civil works Schedule of rates as mentioned in Memorandum (Annexure-I) However, In the case of extra item(s), (items that are completely new, and are in addition to the items contained in the contract, and not included in the schedule of rates (as mentioned in Memorandum (Annexure- I)), the contractor may within fifteen days of receipt of order or occurrence of the item(s) claim rates, supported by proper analysis, for the work and the engineer-in-charge shall within one month of the receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined. In the case of substituted items (items that are taken up with partial substitution or in lieu of items of work in the contract), the rate for the agreement item (to be substituted) and substituted item shall also be determined in the manner as mentioned in the following para: If the market rate for the substituted item so determined is more than the market rate of agreement item (to be substituted), the rate payable to the contractor for the substituted item shall be the rate for the agreement item (to be substituted) so increased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted). If the market rate for the substituted item so determined is less than the market rate of the agreement (to be substituted), the rate payable to the contractor for the substituted item shall be the rate for the agreement item (to be substituted) so decreased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted) In the case of contract item(s), substituted item(s), contract cum substituted items, which exceed the limits laid down in Memorandum (Annexure-I), the contractor shall within fifteen days of receipt of order of occurrence of the excess, claim revision of the rates, supported by proper analysis for the work in excess of the above mentioned limits, provided that if the rates so claimed are in excess of the rates specified in the scheduled of quantities, the Engineer-in-Charge shall within one month of receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the Contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined. The provisions of the preceding paragraph shall also apply to the decrease in the rates of items for the work in excess of the limits laid down in Memorandum (Annexure-I), and the Engineer-in-charge shall after giving notice of the contractor within one month of occurrence of the excess and after taking into consideration any reply received from him within fifteen days of the receipt of the notice revise the rates for the work in question within one month of the expiry of the said period of fifteen days having regard to the market rates.

- 3.3** The contractor shall send to the Engineer-in-Charge once every three months,an up to date account giving complete details of all claims for additional payments to which the contractor may consider himself entitled and of all additional work ordered by the Engineer-in-Charge which he has executed during the preceding quarter failing which the contractor shall be deemed to have waived his right. However, the Engineer-in-charge may authorize consideration of such claims on merits.

For the purpose of operation of Memorandum (Annexure-I), the following works shall be treated as works relating to foundation unless and otherwise defined in the Contract:

For Buildings: All works up to 1.2 meters above ground level or up to floor 1 level whichever is lower.

For abutments, piers and well staining: All works upto 1.2m above the bed level.

For walls, compound walls, , and other elevated structures: All works upto 1.2 metres above the ground level.all items of excavation and filling including treatment of sub base.

Any operation incidental to or necessarily has to be in contemplation of Bidder while filling, tender or necessary for proper execution of the item

included in the Schedule of quantities or in the schedule of rates mentioned above, whether or not specifically indicated in the description of the item and the relevant specifications shall be deemed to be included in the rates quoted by the Bidder or the rate given in the said schedule or rates as the case may be Nothing extra shall be admissible for such operations. Market Rates to be determined as per various sub-clauses given in tender document shall be on the basis of Prevailing rates of Material (unless mentioned otherwise), Relevant Labour authority rate for Labour, market rates of T&P etc. plus 15% towards Contractors' Profits and Overheads.

The following factors may be considered in the justification of rates on which

Contractor's overhead & profit shall not be applicable:

Buildings and Other Construction Worker Cess as applicable in the state of work place

EPF (Employer Contribution) component, as per EPF act on the portion of labour's wages

on works contract / WCT, as per composite scheme in the State of work place, if applicable

GST.

## **ESCALATION**

No claim on account of any escalation on whatsoever ground shall be entertained at any stage of works. All rates as per Bill of Quantities (BOQ) quoted by contractor shall be firm and fixed for entire contract period as well as extended period for completion of the works. No escalation shall be applicable on this contract.

## **COMPENSATION FOR DELAY**

If the contractor fails to maintain the required progress in terms of clause

or relevant clause of GCC & Special Conditions of Contract, to complete the work and clear the site on or before the contract or extended date of completion, he shall, without prejudice to any other right or remedy available under the law to the BSCDCL on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated below as the Engineer in charge (whose decision in writing shall be final and binding) may decide on the amount of tendered value of the work for every completed day / week (as applicable) that the progress remains below that specified in Clause or the relevant clause in GCC & Special Conditions of Contract or that the work remains incomplete.

This will also apply to items or group of items for which a separate period of completion has been specified

- i) Compensation for delay of work @ 1.5% per month delay to be computed on daily basis. Provided always that the total amount of compensation for delay to be paid under this Condition shall not exceed 10% of the Tendered Value of work or of the Tendered Value of the item or group of items of work for which a separate period of completion is originally given. The amount of compensation may be adjusted or set-off against any sum payable to the Contractor under this or any other contract with BSCDCL.

In case, the contractor does not achieve a particular milestone mentioned elsewhere in the tender document, or the re-scheduled milestone(s) the amount shown against that milestone shall be withheld, to be adjusted against the compensation levied at the final grant of Extension of Time. Withholding of this amount or failure to achieve a milestone, shall be automatic without any notice to the Contractor. However, if the contractor catches up with the progress of work on the subsequent milestone(s), the withheld amount shall be released. In case the contractor fails to make up for the delay in subsequent milestone(s), amount mentioned against each milestone missed subsequently also shall be withheld. However, no interest, whatsoever, shall be payable on such withheld amount.

### **INCENTIVE FOR EARLY COMPLETION**

In case the contractor completes the work ahead of scheduled completion time, a bonus @ 1% (One percent) of the tendered value per month computed on per day basis, shall be payable to the contractor, subjected to a maximum limit of 5% (Five percent) of the tendered value. The amount of bonus, if payable, shall be paid along with final bill after completion of the work.

### **ACTION IN CASE WORK NOT DONE AS PER SPECIFICATIONS**

All works under or in course of execution or executed in pursuance of the contract, shall at all times be open and accessible to the inspection and supervision of the Engineer-in-charge, his authorized subordinates in charge of the work and all the superior officers, officer of the Quality Assurance Unit of the BSCDCL or any organization engaged by the BSCDCL for Quality Assurance and the contractor shall, at all times, during the usual working hours and at all other times at which reasonable notice of the visit of such officers has been given to the contractor, either himself be present to receive orders and instructions or have a responsible agent duly accredited in writing, present for that purpose. Orders given to the Contractor's agent shall be considered to have the same force as if they had been given to the contractor himself. If it shall appear to the Engineer-in-charge or his authorized subordinates in-charge of the work or to the officer of Quality Assurance or his subordinate officers or the officers of the organization engaged by the BSCDCL for Quality Assurance or his subordinate officers, that any work has been executed with unsound, imperfect, or unskillful workmanship, or with materials or articles provided by him for the execution of the work which are unsound or of a quality inferior to that contracted or otherwise not in accordance with the contract, the contractor shall, on demand in writing which shall be made within twelve months of the completion of the work from the Engineer-in-Charge specifying the work, materials or articles complained of notwithstanding that the same may have been passed, certified and paid for forthwith rectify, or remove and reconstruct the work so specified in whole or in part, as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own charge and cost. In the event of the failing to do so within a period specified by the Engineer-in-Charge in his demand aforesaid, then the contractor shall be liable to pay compensation at the same rate as per conditions of contract (for non-completion of the work in time) for this default. In such case the Engineer-in-Charge may not accept the item of work at the rates applicable under the contract but may accept such items at reduced rates as the Engineer in charge may consider reasonable during the preparation of on account bills or final bill if the item is so acceptable without detriment to the safety and utility of the item and the structure or he may reject the work outright without any payment and/or get it and other connected and incidental items rectified, or removed and re-executed at the risk and cost of the contractor. Decision of the Engineer-in-Charge to be conveyed in writing in respect of the same will be final and binding on the contractor.

### **ACTION IN CASE OF BAD WORK**

If it shall appear to the Engineer-in-Charge or his authorized representative in charge of the work or to the Chief Technical Examiner or to any other inspecting agency of Government/

State Government/ Owner where the work is being executed, that any work has been executed with unsound, imperfect, or unskillful workmanship or with materials of any inferior description, or that any materials or articles provided by him for the execution of the work are unsound or of a quality inferior to that contracted for or otherwise not in accordance with the contract, the contractor shall on demand in writing which shall be made within twelve months of the completion of the work from the Engineer-in-Charge specifying the work, materials or articles complained of notwithstanding that the same may have been passed, Certified and paid for forthwith rectify, or remove and reconstruct the work so specified in whole or in part as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own proper charge and cost, and in the event of his failing to do so within a period to be specified by the Engineer-in-Charge in his demand aforesaid while the contractor failure to do so shall continue, the Engineer- in-Charge may rectify or remove and re-execute the work or remove and replace with others, the material or articles complained of as the case may be at the risk and expense in all respects of the contractor.

### **CANCELLATION/DETERMINATION OF CONTRACT IN FULL OR PART**

Subject to other provisions contained in this clause the Engineer-in-Charge may, without prejudice to his any other rights or remedy against the contractor in respect of any delay, inferior workmanship, any claims for damages and / or any other provisions of this contract or otherwise, and whether the date of completion has or has not elapsed, by notice in writing absolutely determine the contract in any of the following cases:

If the contractor having been given by the Engineer-in-Charge a notice in writing to rectify, reconstruct or replace any defective work or that the work is being performed in an inefficient or otherwise improper or un-workmanlike manner shall omit to comply with the requirement of such notice for a period of seven days thereafter; or

If the contractor has, without reasonable cause, suspended the progress of the work or has failed to proceed with the work with due diligence so that in the opinion of the Engineer-in- Charge (which shall be final and binding) he will be unable to secure completion of the work by the date for completion and continues to do so after a notice in writing of seven days from the Engineer-in-Charge; or

If the contractor fails to complete the work within the stipulated date or items of work with individual date of completion, if any stipulated, on or before such date(s) of completion and does not complete them within the period specified in a notice given in writing in that behalf by the Engineer-in-Charge; or

If the contractor persistently neglects to carry out his obligations under the contract and / or commits default in complying with any of the terms and conditions of the contract and does not remedy it or take effective steps to remedy it within 7 days after a notice in writing is given to him in that behalf by the Engineer-in-Charge; or

If the contractor shall offer or give or agree to give to any person in BSCDCL service or to any other person on his behalf any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any action relation to the obtaining or execution of this or any other contract for BSCDCL; or

If the contractor shall enter into a contract with BSCDCL in connection with which commission has been paid or agreed to be paid by him or to his knowledge, unless the particulars of any such commission and the terms of payment thereof have been previously disclosed in writing to the Engineer-in-Charge; or

If the contractor shall obtain a contract with BSCDCL as a result of wrong tendering or other non-bona-fide methods of competitive tendering or commits breach of Integrity Pact; or If the contractor being an individual, or if a firm, any partner thereof shall at any time be adjudged insolvent or have a receiving order or order for administration of his estate made against him or shall take any proceedings for liquidation or composition (other than a voluntary liquidation for

the purpose of amalgamation or reconstruction) under any Insolvency Act for the time being in force or make any conveyance or assignment of his effects or composition or arrangement for the benefit of his creditors or purport so to do, or if any application be made under any Insolvency Act for the time being in force for the sequestration of his estate or if a trust deed be executed by him for benefit of his creditors; or If the contractor being a company, shall pass a resolution or the Court shall make an order for the winding up of the company, or a receiver or manager on behalf of the debenture holders or otherwise shall be appointed or circumstances shall arise which entitle the Court or debenture holders to appoint a receiver or manager; or If the contractor shall suffer an execution being levied on his goods and allow it to be continued for a period of 21 days, or. If the contractor assigns, transfers, sublets (engagement of labour on a piece-work basis or of the labour with materials not to be incorporated in the work, shall not be deemed to be subletting) or otherwise parts with or attempts to assign, transfer sublet or otherwise parts with the entire works or any portion thereof without and prior written approval of the Engineer-in-Charge.

When the contractor has made himself liable for action under any of the cases aforesaid, the Engineer-in-Charge may without prejudice to any other right or remedy which shall have accrued or shall accrue hereafter to BSCDCL, by a notice in writing to cancel the contract as whole or only such items of work in default from the Contract, the Engineer-in-charge shall have powers:

Take possession of site and any materials, constructional plant, implements, stores, etc. thereon; and/ or Carry out the incomplete work by any means at the risk and cost of the contractor; and/ or

The Engineer-in-charge shall determine the amount, if any, is recoverable from the contractor for completion of the part work/part incomplete work of any item(s) taken out of his hands and execute at the risk and cost of the contractor, the liability of contractor on account of loss or damage suffered by BSCDCL because of action under this clause shall not exceed 10% of the tendered value of the work.

To determine or rescind the contract as aforesaid (of which termination or rescission notice in writing to the contractor under the hand of the Engineer-in-Charge shall be conclusive evidence). Upon such determination or rescission the full security deposit recoverable under the contract and performance guarantee shall be liable to be forfeited and un-used materials, construction plants, implements, temporary buildings, etc. shall be taken over and shall be absolutely at the disposal of the BSCDCL. If any portion of the Security Deposit has not been paid or received it would be called for and forfeited; and/ or

To employ labour paid by the BSCDCL and to supply materials to carry out the work or any part of the work debiting the contractor with the cost of the labour and the price of the materials of the amount of which cost and price certified by the Engineer-in-Charge shall be final and conclusive) against the contractor and crediting him with the value of the work done in all respects in the same manner and at the same rates as if it had been carried out by the contractor under the terms of his contract. The certificate of the Engineer-in- Charge as to the value of the work done shall be final and conclusive against the contractor provided always that action under the sub-clause shall only be taken after giving notice in writing to the contractor. If the expenses incurred by the BSCDCL are less than the amount payable to the contractor at his agreement rates, the difference shall not be paid to the contractor; and/ or

After giving notice to the contractor to measure up the work of the contractor and to take such whole, or the balance or part thereof as shall be un-executed or delayed with reference to the General Conditions of Contract / or relevant clause of Condition Special of Contract, out of his hands and to give it to another contractor to complete in which case any expenses which may be incurred in excess of the sum which would have been paid to the original contractor if the whole work had been executed by him (of the amount of which excess the certificate in writing of the Engineer-in-Charge shall be final and conclusive) shall be borne and paid by the original contractor and may be deducted from any money due to him by BSCDCL under his contract or on any other account whatsoever or from his security deposit or the proceeds of sales of unused materials, construction plants, implements temporary buildings etc. thereof or a

sufficient part thereof as the case may be. If the expenses incurred by the BSCDCL are less than the amount payable to the contractor at his agreement rates, the difference shall not be paid to the contractor; and/or

By a notice in writing to withdraw from the contractor any items or items of work as the Engineer-in-charge may determine in his absolute discretion and get the same executed at the risk and cost of the contractor.

Any excess expenditure incurred or to be incurred by BSCDCL in completing the works or part of the works or the excess loss or damages suffered or may be suffered by BSCDCL as aforesaid after allowing such credit shall without prejudice to any other right or remedy available to BSCDCL in law be recovered from any moneys due to the contractor on any account, and if such moneys are not sufficient the contractor shall be called upon in writing and shall be liable to pay the same within 30 days.

If the contractor shall fail to pay the required sum within the aforesaid period of 30 days, the Engineer-in-Charge shall have the right to sell any or all of the contractors unused materials, constructional plant, implements, temporary buildings, etc. and apply the proceeds of sale thereof towards the satisfaction of any sums due from the contractor under the contract and if thereafter there be any balance outstanding from the contractor, it shall be recovered in accordance with the provisions of the contract and law.

Any sums in excess of the amounts due to BSCDCL and unsold materials, constructional plant etc. shall be returned to the contractor, provided always that if cost or anticipated cost of completion by BSCDCL of the works or part of the works is less than the amount which the contractor would have been paid had he completed the works or part of the works, such benefit shall not accrue to the contractor.

In the event of anyone or more of the above courses being adopted by the Engineer-in-Charge the contractor shall have no claim to compensation for any loss sustained by him by reasons of his having purchased or procured any materials or entered into any engagements or made any advances on account or with a view to the execution of the work or the performance of the contract. And in case action is taken under any of the provision aforesaid the contractor shall not be entitled to recover or be paid any sum for any work thereof or actually performed under this contract unless and until the Engineer-in-Charge has certified in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified.

Provided further that if any of the recoveries to be made, while taking action as above, are in excess of the security deposit forfeited, these shall be

Limited to the amount by which the excess cost incurred by the BSCDCL exceeds the security deposit so forfeited.

### **CONTRACTOR LIABLE TO PAY COMPENSATION EVEN IF ACTION NOT TAKEN**

In any case in which any of the powers conferred upon the Engineer-in-Charge by relevant clause thereof, shall have become exercisable and the same are not exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions hereof and such powers shall notwithstanding be exercisable in the event of any future case of default by the contractor and the liability of the contractor for compensation shall remain unaffected. In the event of the Engineer-in-Charge putting in force all or any of the powers vested in him under any clause he may, if he so desires after giving a notice in writing to the contractor, take possession of (or at the sole discretion of the Engineer-in-Charge which shall be final and binding on the contractor) use as on hire (the amount of the hire money being also in the final determination of the Engineer-in-Charge) all or any tools, plant, materials and stores, in or upon the works, or the site thereof belonging to the contractor, or procured by the contractor and intended to be used for the execution of the work/or any part thereof, paying or allowing for the same in account at the contract rates, or in the case of these not being applicable, at current market rates to be certified by the Engineer-in-Charge, whose certificate thereof shall be final and binding on the contractor and/or direct the contractor, clerk of the works, foreman or other



authorized agent to remove such tools, plant, materials, or stores from the premises (within a time to be specified in such notice) in the event of the contractor failing to comply with any such requisition, the Engineer-in-Charge may remove them at the contractor's expense or sell them by auction or private sale on account of the contractor and his risk in all respects and the certificate of the Engineer-in-Charge as to the expenses of any such removal and the amount of the proceeds and expenses of any such sale shall be final and conclusive against the contractor.

### **CARRYING OUT PART WORK AT RISK & COST OF CONTRACTOR**

If contractor:

At any time makes default during currency of work or does not execute any part of the work with due diligence and continues to do so even after a notice in writing of 7 days in this respect from the Engineer-in-Charge;

or

Commits default in complying with any of the terms and conditions of the contract and does not remedy it or takes effective steps to remedy it within 7 days even after a notice in writing is given in that behalf by the Engineer-in-Charge;

or

Fails to complete the work(s) or items of work with individual dates of completion, on or before the date(s) so determined, and does not complete them within the period specified in the notice given in writing in that behalf by the Engineer-in-Charge.

The Engineer-in-Charge without invoking action under conditions of contract may, without prejudice to any other right or remedy against the contractor which have either accrued or accrue thereafter to BSCDCL, by a notice in writing to take the part work/part incomplete work of any item(s) out of his hands and shall have powers to:

Take possession of the site and any materials, constructional plant, implements, stores, etc., thereon; and/or Carry out the part work / part incomplete work of any item(s) by any means at the risk and cost of the contractor.

The Engineer-in-Charge shall determine the amount, if any, is recoverable from the contractor for completion of the part work/ part incomplete work of any item(s) taken out of his hands and execute at the risk and cost of the contractor, the liability of contractor on account of loss or damage suffered by BSCDCL because of action under this clause shall not exceed 10% of the tendered value of the work.

In determining the amount, credit shall be given to the contractor with the value of work done in all respect in the same manner and at the same rate as if it had been carried out by the original contractor under the terms of his contract, the value of contractor's materials taken over and incorporated in the work and use of plant and machinery belonging to the contractor. The certificate of the Engineer-in-Charge as to the value of work done shall be final and conclusive against the contractor provided always that action under this clause shall only be taken after giving notice in writing to the contractor. Provided also that if the expenses incurred by the department are less than the amount payable to the contractor at his agreement rates, the difference shall not be payable to the contractor.

Any excess expenditure incurred or to be incurred by BSCDCL in completing the part work/ part incomplete work of any item(s) or the excess loss of damages suffered or may be suffered by BSCDCL as aforesaid after allowing such credit shall without prejudice to any other right or remedy available to BSCDCL in law or per as agreement be recovered from any money due to the contractor on any account, and if such money is insufficient, the contractor shall be called upon in writing and shall be liable to pay the same within 30 days.

If the contractor fails to pay the required sum within the aforesaid period of 30 days, the Engineer-in-Charge shall have the right to sell any or all of the contractors' unused materials,

constructional plant, implements, temporary building at site etc. and adjust the proceeds of sale thereof towards the dues recoverable from the contractor under the contract and if thereafter there remains any balance outstanding, it shall be recovered in accordance with the provisions of the contract. In the event of above course being adopted by the Engineer-in- Charge, the contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any engagements or made any advance on any account or with a view to the execution of the work or the performance of the contract.

### **SUSPENSION OF WORKS**

The contractor shall, on receipt of the order in writing of the Engineer-in-charge, suspend the progress of the works or any part thereof for such time and in such manner as the Engineer-in- charge may consider necessary for any of the following reasons:

On account of any default on part of the contractor, or For proper execution of the works or part thereof for reason other than the default of the contractor, or For safety of the works or part thereof.

The contractor shall, during such suspension, properly protect and secure the works to the extent necessary and carry out the instructions given in that behalf by the Engineer-in-charge.

(b) If the suspension is ordered for reasons (ii) and (iii) in sub-para (a) above.

i) The contractor shall be entitled to an extension of the time equal to the period of every such suspension plus 25% for completion period. No adjustment in contract price will be allowed for reasons of such suspension.

ii) In the event of the Contractor treating the suspension as an abandonment of the Contract by BSCDCL, he shall have no claim to payment of any compensation on account of any profit or advantage which he may have derived from the execution of the work in full.

### **TERMINATION OF CONTRACT ON DEATH OF CONTRACTOR**

Without prejudice to any of the right or remedies under this contract if the contractor dies, the Engineer in-charge shall have the option of terminating the contract without compensation to the contractor.

### **TIME ESSENCE OF CONTRACT & EXTENSION FOR DELAY**

The time allowed for execution of the Works as specified in the Memorandum (Annexure-I) or the extended time in accordance with these conditions shall be the essence of the contract. The execution of the works shall commence from such time period as mentioned in MEMORANDUM (ANNEXURE – I) or the date on which the Engineer-in-Charge issues written orders to commence the work. If the Contractor commits default in commencing the execution of the work as aforesaid, the BSCDCL shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the earnest money & performance guarantee absolutely.

- 3.4** Within 10 (Ten) days of Letter of Award, the Contractor shall submit a time and Progress Chart (CPM/ PERT/ Quantified Bar Chart) and get it approved by the Engineer-in-Charge. The Chart shall be prepared in direct relation to the time stated in the contract documents for completion of items of the works. It shall indicate the forecast (mile-stones) of the dates of commencement and completion of various items, trades, sections of the work and may be amended as necessary by agreement between the Engineer-in-Charge and the Contractor within the limitations of time stipulated in the Contract documents and further to ensure good progress during the execution of the work, the contractor shall in all cases in which the time allowed for any work exceeds one month (save for special jobs for which a separate program has been agreed upon) complete 1/8th of the whole of work before 1/4th of the whole time allowed in the contract has elapsed, 3/8th of the work before one half of such time has elapsed and 3/4th of the work before 3/4th of such time has elapsed. The physical progress report including photographs shall be submitted by the contractor on the prescribed format & the intervals (not

exceeding one month) as decided by the Engineer in Charge. The compensation for delay as per tender document shall be enervable at intermediate stages also, in case the required progress is not achieved to meet the above time deadlines of the completion period and/ or milestones of time and progress chart, provided always that the total amount of Compensation for delay to be paid under this condition shall not exceed 10% of the tendered value of work”.

If the work(s) be delayed by:

1. force-majeure or
  2. Abnormally bad weather, or
  3. Serious loss or damage by fire, or
  4. Civil commotion, local commotion of workmen, strike or lockout, affecting any or the trades employed on the work, or
  5. Delay on the part of other contractors or tradesmen engaged by Engineer-in-Charge in Executing work not forming part of the Contract, or
  6. Non-availability of stores, which are responsibility of the BSCDCL or,
  7. Non-availability or break down of tools and plant to be supplied or supplied by BSCDCL or,
  8. Any other cause which, in the absolute discretion of the BSCDCL, is beyond the Contractor’s control, then upon the happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the Engineer-in-Charge within 07 days but shall nevertheless use constantly his best endeavor to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-Charge to proceed with the works.
- 3.5 Request for extension of time, to be eligible for consideration, shall be made by the Contractor in writing within fourteen days of the happening of the event causing delay in the prescribed form. The Contractor may also, if practicable, indicate in such a request the period for which extension is desired. In any such case BSCDCL may give a fair and reasonable extension of time for completion of work. Such extension shall be communicated to the Contractor by the Engineer-in- Charge in writing within a reasonable time from the receipt of such request. Non application by the contractor for extension of time shall not be a bar for giving a fair and reasonable extension by the Engineer-in-Charge and the extension of time so given by the Engineer-in-Charge shall be binding on the contractor.

### **TIME SCHEDULE & PROGRESS**

- 3.6 Time allowed for carrying out all the works as entered in the tender shall be as mentioned in the “Memorandum (Annexure-I)” which shall be reckoned from the 10th day from the date on which the letter of Award is issued to the Contractor. Time shall be the essence of the contract and contractor shall ensure the completion of the entire work within the stipulated time of completion. The contractor shall also furnish within 10 days of date of issue of letter of Award a CPM network/ PERT chart/ Bar Chart for completion of work within stipulated time. This will be duly got approved from BSCDCL. This approved Network/ PERT Chart shall form a part of the agreement. Achievement of milestones as well as total completion has to be within the time period allowed.

Contractor shall mobilize and employ sufficient resources for completion of all the works as indicated in the agreed BAR CHART/PERT Network. No additional payment will be made to the contractor for any multiple shift work or other incentive methods contemplated by him in his work schedule even though the time schedule is approved by the Engineer-in-Charge.

During the currency of the work the contractor is expected to adhere to the time schedule on milestone and total completion and this adherence will be a part of Contractor’s performance under the contract. During the time schedule on milestone and total completion and this

adherence will be a part of Contractor's performance under the contract. During the execution of the work contractor is expected to participate in the review and updating of the Network/BAR CHART undertaken by the BSCDCL. These reviews may be undertaken at the discretion of Engineer-in-charge either as a periodical appraisal measure or when the quantum of work order on the contractor is substantially changed through deviation orders or amendments. The review shall be held at site or any of the offices of BSCDCL/owner /consultant at the sole discretion of BSCDCL. The contractor will adhere to the revised schedule thereafter. The approval to the revised schedule resulting in a completion date beyond the stipulated date of completion shall not automatically amount to a grant of extension of time to the contractor.

Contractor shall submit (as directed by Engineer-in-Charge) progress reports on a computer based program (program and software to be approved by Engineer-in-Charge) highlighting status of various activities and physical completion of work. The contractor shall send completion report with as built drawings to the office of Engineer-in-Charge, of BSCDCL in writing within a period of 30 days of completion of work.

The photographs of the project taken on last day of every month indicating progress of work (in soft copies) shall be attached along with the physical progress reports to be submitted to Engineer-in-charge.

### **TAXES AND DUTIES**

- 3.7** Except as otherwise specifically provided in the contract, the contractor shall be liable and responsible for the payment, including of all taxes, and GST (the state concerned) which may be specified by local/state/ central government from time to time on all material articles which may be used for this work. The rates quoted by him in the tender in bill of quantities shall be inclusive of all taxes and GST.

In the event of nonpayment/default in payment of any of the above taxes, BSCDCL reserves the right to withhold the dues/payments of contractor and make payment to local/state/Central Government authorities or to labourers as may be applicable.

The rate quoted by the contractor shall be deemed to be inclusive of all taxes and GST as given in tender document. Tax deductions at source shall be made as per laws prevalent in the State as applicable for the work.

The stamp duty and registration charges, if any, on the contract agreement levied by the Government or any other statutory body, shall be paid by the contractor as applicable in the state of work. It will be incumbent upon the Contractor to obtain a registration certificate as a dealer under the GST Act and necessary evidence to this effect shall be furnished by the Contractor to BSCDCL.

The Bidder shall quote his. In case, the GST on works contract on execution of works is waived off by the State Govt. at later stage for this project, the equivalent amount from the date of waiver of such tax (as per prevailing rate as on the date of waiver of all type taxes and GST Works Contract) shall be deducted from the amount payable to the contractor from subsequent RA bills.

In the event of decrease / relaxation and / or waiver of any of the existing / prevailing tax(es), duties, levies, cess by Central / state Govt. Or any other statutory body (ies), after the last stipulated date for the receipt of tender including extension (if any), and the contractor thereupon has been paid or has raised claims of such tax(es), duties, levies, cess; such sums shall be recovered / deducted (from claims raised but which has not been paid) effective from the date as reckoned in the relevant statutory order / law / ordinance etc. The contractor, shall, within a period of 30 days of any such waiver/relaxation/decrease in tax(es), duties, levies, cess, give a written notice thereof to Engineer-in-charge stating the statutory change with Documentary proof thereto. Provided always that Engineer-in-charge shall have full powers to effect recovery/deduction on account of any such statutory change even if contractor has not intimated in the event when any such statutory action comes to his notice.

## **INCOME TAX DEDUCTION (TDS)**

Income tax deductions shall be made from all payments made to the contractor including advances against work done, as per the rules and regulations in force, in accordance with the Income Tax act prevailing from time to time.

## **GOODS AND SERVICES TAX (GST)**

The Bidder shall quote rates **inclusive of all type of tax and GST nothing extra shall be paid**. The contractor must have GST registration number and will provide copy of Registration to BSCDCL before release of any payment by the Corporation. The contractor will submit regular Invoice / Bill fulfilling all conditions of Goods and Service Tax(GST) Rules.

## **ROYALTY ON MATERIALS:**

The contractor shall deposit royalty and obtain necessary permit for supply of bajri, stone, kankar, sand and other materials etc. from the local authorities and quoted rates shall be inclusive of royalty. The contractor shall be deemed to have inspected the site, its surrounding and acquainted itself with the nature of the ground, accessibility of the site and full extent and nature of all operations necessary for the full and proper execution of the contract, space for storage of materials, constructional plant, temporary works, restrictions on the plying of heavy vehicles in area, supply and use of labour materials, plant, equipment and laws, rules and regulations, if any, imposed by the local authorities.

The rates and prices to be tendered in the bill of quantities are for completed and finished items of works and complete in all respects. It will be deemed to include all constructional plant, labour, supervision materials, transport, all temporary works, erection, maintenance, contractor's profit and establishment/overheads, together with preparation of designs & drawings pertaining to casting yard, shop drawing, fabrication drawing (if required), staging form work, stacking yard, etc. all general risk, all taxes, royalty, duties, cess, octroi and other levies, insurance liabilities and obligations set out or implied in the tender documents and contract .

If any temporary/ permanent structure is encountered or safety of such structure in the vicinity is endangered due to execution of the project, the contractor has to protect the structures by any means as per direction of Engineer-in-Charge. If any damage is caused to any temporary or permanent structure(s) in the vicinity due to execution of the project, the contractor has to make good the same by any means as per direction of Engineer-in-Charge. The contractor should inspect the site of work from this point of view. The cost to be incurred in this regard shall be deemed to be included in his quoted rates of BOQ items and the contractor shall not be entitled for any extra payment in this regard.

## **INSURANCE OF WORKS ETC**

Contractor is required to take contractor's all risk policy or erection all risk policy (as the case may be) from an approved insurance company in the joint name with BSCDCL and bear all costs towards the same for the full period of execution of works including the defect liability period for the full amount of contract against all loss of damage from whatever cause arising other than **excepted risks** for which he is responsible under the terms of the contract and in such manner that the BSCDCL and the contractor are covered during the period of construction of works and/or also covered during the period of defect liability for loss or damage. The work and the temporary works to the full value of such works.

The materials, constructional plant, centering, shuttering and scaffolding materials and other things brought to the site for their full value. Whenever required by BSCDCL, the contractor shall produce the policy or the policies of insurance and the receipts for payment of the current premium.

## **INSURANCE UNDER WORKMEN COMPENSATION ACT**

Contractor is required to take insurance cover under the Workman Compensation Act, 1923 amended from time to time from an approved insurance company and pay premium charges thereof. Wherever required

by BSCDCL the contractor shall produce the policy or the policies of Insurance and the receipt of payment of the current premiums.

### **THIRD PARTY INSURANCE**

Contractor is required to take third party insurance cover for an amount of 5%(five percent) of contract value from an approved insurance company for insurance against any damage, injury or loss which may occur to any person or property including that of BSCDCL / owner / client, arising out of the execution of the works or temporary works. Wherever required by BSCDCL the contractor shall produce the policy or the policies of Insurance and the receipt of payment of the current premiums.

In case of failure of the contractor to obtain contractors all risk policy, insurance under workman compensation act and third party insurance as described above within one month from the date of commencement of work, running account payments of the contractor shall be withheld till such time the aforesaid insurance covers are obtained by the contractor.

If the Contractor could not effect a comprehensive insurance cover against risks which he may be required to effect under the terms of the contract, then he shall give his attention to get the best insurance cover available and even in case of effecting a wider insurance cover than the one which the subsidiary of the General Insurance Company could offer, such an insurance is ought to be done after the BSCDCL's approval, by or through the subsidiary of the General Insurance Company.

The contractor shall at all times indemnify BSCDCL and Owner against all claims, damages or compensation under the provision of Payment of wages act-1936, Minimum Wages Act-1948, Employer's liability Act-1938, the workmen's compensation Act-1947, Industrial Disputes Act-1947 and Maternity Benefit Act-1961 or any modifications thereof or any other law in force or as consequence of any accident or injury to any workman or other persons in or about the works, whether in the employment of the contractor or not, against all costs, charges and expenses of any suit, action or proceedings arising out of such incident or injury and against all sum or sums which may with the consent of the contractor be paid to compromise or compound any such claim. Without limiting his obligations and liabilities as above provided, the contractor shall insure against all claims, damages or compensation payable under the Workmen's Compensation Act 1923 or any modification thereof or any other law relating thereto.

### **PAYMENTS**

All running payments shall be regarded as payments by way of advance against the final payment only and not as payments for work actually done and completed and/or accepted by BSCDCL and shall not preclude the recovery for bad, unsound and imperfect or unskilled work to be removed and taken away and reconstructed or re-erected or be considered as an admission of the due performance of the Contract, or any part thereof, in this respect, or the accruing of any claim, nor shall it conclude, determine or affect in any way the powers of the BSCDCL under these conditions or any of them as to the final settlement and adjustments of the accounts or otherwise, or in any other way vary/ affect the contract. The final bill shall be submitted by the contractor within three months of the completion of work, otherwise BSCDCL's certificate of the measurement and of the total amount payable for the work accordingly shall be final and binding on contractor. Each Running Bills should be accompanied by two sets of at-least 20 (twenty) photographs as per direction of Engineer-in-charge taken from various points depicting status of work as on Report/ Bill date and Monthly Progress Report for the concerned month in the pro- forma to be given/ approved by Engineer-in-Charge. Intermittent progress Photographs as and when required shall also be provided by the Contractor at his own cost as per direction of Engineer-in-Charge. No payment of running account bill shall be released unless it is accompanied by photographs and Monthly Progress Report as above.

It is clearly agreed and understood by the Contractor that notwithstanding anything to the contrary that may be stated in the agreement between BSCDCL and the contractor; the contractor shall become entitled to payment only after BSCDCL has received the corresponding payment(s) from the client/ Owner for the work done by the contractor. Any delay in the release of payment by the client/ Owner to BSCDCL leading to a delay in the release the corresponding payment by BSCDCL to the contractor shall not entitle the Contractor to any compensation/ interest from BSCDCL. All payments shall be released by way of e-transfer through RTGS/NEFT in India directly at their Bank account by BSCDCL.

## **MODE OF PAYMENT:-**

Item shall be paid in Number of bollard fixed at site shown by the Engineer in charge. Nothing Extra shall be paid for transportation of Bollards from manufacturing place to any site of work within BSCDCL limit.

## **RATE**

The Contract unit rate shall be payment in full for the cost of making the road sign, including all materials, installing it at the site and incidentals to complete the work in accordance with the Specifications.

## **MEASUREMENTS OF WORKS**

Engineer-in-charge shall, except as otherwise provided, ascertain and determine by measurement, the value of work done in accordance with the contract.

Except where any general or detailed description of the work expressly shows to the contrary, measurement shall be taken in accordance with the

Procedure set forth in the CPW D Specification. In the case of items which are not covered by specifications, mode of measurement as specified in the Technical Specifications of the contract and if for any item no such technical specification is available, then a relevant standard method of measurement issued by the IS/Bureau of Indian Standard shall be followed.

Provided further that, In case of Cancellation/Determination of Contract in Full or in Part in accordance with clause of tender document (and its sub-clauses), following methodology shall be adopted in respect of measurements in addition to what has been mentioned in foregoing:-

All measurements and levels shall be taken jointly by the Engineer-in-Charge or his authorized representative and by the contractor or his authorized representative from time to time during the progress of the work and such measurements shall be signed and dated by the Engineer-in-Charge and the contractor or their representatives in token of their acceptance. If the contractor objects to any of the measurements recorded, a note shall be made to that effect with reason and signed by both the parties.

If for any reason the contractor or his authorized representative is not available and the work of recording measurements is suspended by the Engineer-in-Charge or his representative, the

Engineer-in-Charge and BSCDCL shall not entertain any claim from contractor for any loss or damages on this account. If the contractor or his authorized representative does not remain present at the time of such measurements after the contractor or his authorized representative has been given a notice in writing three (3) days in advance or fails to countersign or to record objection within a week from the date of the measurement, then such measurements recorded in his absence by the Engineer-in-Charge or his representative shall be deemed to be accepted by the Contractor. The contractor shall, without extra charge, provide all assistance with every appliance, labour and other things necessary for measurements and recording levels.

Any extra item which is required for completion of project rates shall be derived as per similar item available in UADD/DSR/BOQ or average as the rate quoted above or below by contractor. If both are not available rates will be derived as per market survey.

## **COMPUTERISED MEASUREMENT BOOKS**

Engineer-in-Charge shall, except as otherwise provided, ascertain and determine by measurement the value of work done in accordance with the contract. All measurements of all items having financial value shall be entered by the contractor and compiled in the shape of the Computerized Measurement Book as per the format of BSCDCL so that a complete record is obtained of all the items of works performed under the contract. All such measurements and levels recorded by the contractor or his authorized representative from time to time, during the progress of the work, shall be got checked by the contractor from the Engineer-in-Charge or his authorized representative as per interval or program fixed in consultation with Engineer-in-Charge or his authorized representative.

After the necessary corrections made by the Engineer-in-Charge, the measurement sheets shall be returned to the contractor for incorporating the corrections and for resubmission to the Engineer-in-Charge for the dated signatures by the Engineer-in-Charge and the contractor or their representatives in token of their acceptance.

Whenever bill is due for payment, the contractor would initially submit draft computerized measurement sheets and these measurements would be got checked/test checked from the Engineer-in-Charge and/or his authorized representative. The contractor will, thereafter, incorporate such changes as may be done during these checks/test checks in his draft computerized measurements, and submit to BSCDCL a computerized measurement book, duly bound, and with its pages machine numbered. The Engineer-in-Charge and/or his authorized representative would thereafter check this MB, and record the necessary certificates for their checks/test checks.

The final, fair, computerized measurement book given by the contractor, duly bound, with its pages numbered, should be 100% correct, and no cutting or over-writing in the measurements would thereafter be allowed. If at all any error is noticed, the contractor shall have to submit a fresh computerized MB with its pages duly numbered and bound, after getting the earlier MB cancelled by the BSCDCL. The contractor shall submit two spare copies of such computerized MB's for the purpose of reference and record by the various officers of the BSCDCL.

The contractor shall also submit to the department separately his computerized Abstract of Cost and the bill based on these measurements, duly bound, and its pages numbered along with two spare copies of the "bill. The contractor shall, without extra charge, provide all assistance with every appliance, labour and other things necessary for checking of measurements /levels by the Engineer-in-Charge or his representative.

The contractor shall give not less than seven days' notice to the Engineer-in-Charge or his authorized representative in charge of the work before covering up or otherwise placing beyond the reach of checking and/or test checking the measurement of any work in order that the same may be checked and/or test checked and correct dimensions thereof be taken before the same is covered up or placed beyond the reach of checking and/or test checking measurement and shall not cover up and place beyond reach of measurement any work without consent in writing of the Engineer-in-Charge or his authorized representative in charge of the work who shall within the aforesaid period of seven days inspect the work, and if any work shall be covered up or placed beyond the reach of checking and/or test checking measurements without such notice having been given or the Engineer-in-Charge's consent being obtained in writing the same shall be uncovered at the Contractor's expense, or in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed.

Engineer-in-Charge or his authorized representative may cause either themselves or through another officer of the BSCDCL to check the measurements recorded by contractor and all provisions stipulated herein above or anywhere in the tender document shall be applicable to such checking of measurements or levels.

It is also a term of this contract that checking and/or test checking the measurements of any item of work in the measurement book and/or its payment in the interim, on account of final bill shall not be considered as conclusive evidence as to the sufficiency of any work or material to which it relates nor shall it relieve the contractor from liabilities from any over measurement or defects noticed till completion of the defects liability period.

## **WITHHOLDING AND LIEN IN RESPECT OF SUMS DUE FROM CONTRACTOR**

Whenever any claim or claims for payment of a sum of money arises out of or under the contract or against the contractor, BSCDCL shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security, if any, deposited by the contractor and for the purpose aforesaid, BSCDCL shall be entitled to withhold the security deposit, if any, furnished as the case may be and also have a lien over the same pending finalization or adjudication of any such claim. In the event of the security being insufficient to cover the claimed amount or amounts or if no security has been taken from the contractor, BSCDCL shall be entitled to withhold and have a lien to retain to the extent of such claimed amount or amounts referred to above, from any sum or sums found payable or which may at any time thereafter become payable to the contractor under the same contract or any other contract pending finalization of adjudication of any such claim.

It is an agreed term of the contract that the sum of money or moneys so withheld or retained under the lien referred to above by the Engineer-in-Charge or BSCDCL will be kept withheld or retained



as such by the Engineer-in-Charge or BSCDCL till the claim arising out of or under the contract is determined by the competent court and that the contractor will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to above and duly notified as such to the contractor. For the purpose of this clause, where the contractor is a partnership firm or a limited company, the Engineer-in-Charge or the BSCDCL shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to any partner/limited company, as the case may whether in his individual capacity or otherwise. BSCDCL shall have the right to cause an audit and technical examination of the works and the final bills of the contractor including all supporting vouchers, abstract, etc, to be made after payment of the final bill and if as a result of such audit and technical examination any sum is found to have been overpaid in respect of any work done by the contractor under the contract or any work claimed to have been done by him under the contract and found not to have been executed, the contractor shall be liable to refund the amount of over-payment and it shall be lawful for BSCDCL to recover the same from him in the manner prescribed in tender document of this clause or in any other manner legally permissible;

and if it is found that the contractor was paid less than what was due to him under the contract in respect of any work executed by him under it, the amount of such under payment shall be duly paid by BSCDCL to the contractor, without any interest thereon whatsoever.

### **LIEN IN RESPECT OF CLAIMS IN OTHER CONTRACTS**

Any sum of money due and payable to the contractor (including the security deposit returnable to him) under the contract may be withheld or retained by way of lien by the Engineer-in-Charge or by BSCDCL against any claim of the Engineer-in-Charge or BSCDCL in respect of payment of a sum of money arising out of or under any other contract made by the contractor with the Engineer-in-Charge or the BSCDCL. It is an agreed term of the contract that the sum of money so withheld or retained under this clause by the Engineer-in-Charge or the BSCDCL will be kept withheld or retained as such by the Engineer-in-Charge

or the BSCDCL or till his claim arising out of the same contract or any other contract is either mutually settled or determined by the competent court, as the case may be, and that the contractor shall have no claim for interest or damages whatsoever on this account or on any other ground in respect of any sum of money withheld or retained under this clause and duly notified as such to the contractor.

### **WORK TO BE EXECUTED IN ACCORDANCE WITH SPECIFICATIONS, DRAWINGS AND ORDERS ETC.**

All items of work in the bill of quantities/ schedule of quantities shall be carried out as per the UADD (as the case may be) specifications, drawings and instructions of the Engineer-in-Charge of BSCDCL and the rates shall include for supply of required materials including proper storage, consumables, skilled & unskilled labour, supervision and tools, tackles, plant & machinery complete as called for in the detailed specifications and conditions of the contract. Latest updated UADD specification shall be followed for execution of work.

The contractor shall execute the whole and every part of the work in the most substantial and workman like manner both as regards materials and otherwise in every respect in strict accordance with the specifications.

The contractor shall also conform exactly, fully and faithfully to the design, drawings and instructions in writing in respect of the work assigned by the Engineer-in-Charge.

The contractor shall comply with the provisions of the contract and execute the works with care and diligence and maintain the works and provide all labour and materials, tools and plants including for measurements and supervision of all works, structural plans and other things of temporary or permanent nature required for such execution and maintenance in so far as the necessity for providing these, is specified or is reasonably inferred from the contract. The contractor shall take full responsibility for adequacy, suitability and safety of all the works and methods of construction.

### **MATERIALS TO BE PROVIDED BY THE CONTRACTOR**

The contractor shall, at his own expense, provide all materials, required including Cement & Steel for the works. The contractor shall at his own expense and without delay; supply to the Engineer- in-Charge samples of materials to be used on the work and shall get the same approved in advance. All such materials to be provided by the Contractor shall be in conformity with the specifications laid down or referred to in the contract.

The contractor shall, if requested by the Engineer-in-Charge furnish proof, to the satisfaction of the Engineer-in-Charge that the materials so comply.

The contractor shall at his risk and cost, submit the samples of materials to be tested or analyzed and bear all charges and cost of testing unless specifically provided for otherwise elsewhere in the contract or specifications. The Engineer-in-Charge or his authorized representative shall at all times have access to the works and to all workshops and places where work is being prepared or from where materials, manufactured articles or machinery are being obtained for the works and the contractor shall afford every facility and every assistance and cost in obtaining the right and visit to such access. The Engineer-in-Charge shall have full powers to require the removal from

the premises of all materials which in his opinion are not in accordance with the specifications and in case of default, the Engineer-in-Charge shall be at liberty to employ at the expense of the contractor, other persons to remove the same without being answerable or accountable for any loss or damage that may happen or arise to such materials. The Engineer-in-Charge shall also have full power to require other proper materials to be substituted thereof and in case of default, the Engineer-in-Charge may cause the same to the supplies and all costs which may require such removal and substitution shall be borne by the contractor

## **MATERIALS AND SAMPLES**

The materials/products used on the works shall be one of the approved make/ brands out of list of manufacturers / brands /makes given in the tender documents. The contractor shall submit samples/ specimens out of approved makes of materials/ products to the Engineer-in-Charge for prior approval. In exceptional circumstances Engineer-in-Charge may allow alternate equivalent makes/brands of products/ materials at his sole discretion. The final choice of brand / make shall remain with the Engineer- in-Charge, whose decision in this matter shall be final and binding and nothing extra on this account shall be payable to the Contractor. In case single brand/ make are mentioned, other equivalent makes/ brands may be considered by the Engineer-in- Charge. In case of variance in UADD Specifications from approved products/makes specification, the specification of ` product/make shall prevail for which nothing shall be paid extra to the Contractor. In case no make or brand of any materials, articles, fittings and accessories etc. is specified, the same shall comply with the relevant Indian Standard Specifications and shall bear the ISI/BIS mark. The Engineer of BSCDCL and the owner shall have the discretion to check quality of materials and equipment's to be incorporated in the work, at source of supply or site of work and even after incorporation in the work. They shall also have the discretion to check the workmanship of various items of work to be executed in this work. The contractor shall provide the necessary facilities and assistance for this purpose.

The above provisions shall not absolve the contractor from the quality of final product and in getting the material and workmanship quality checked and approved from the Engineer-in-Charge of BSCDCL.

The contractor shall well in advance, produce samples of all materials, articles, fittings, accessories etc. that he proposes to use and get them approved in writing by BSCDCL. The materials articles etc. as approved shall be *LABELLED* as such and shall be signed by BSCDCL and the Contractor's representative. The approved samples shall be kept in the custody of the Engineer-in- Charge of BSCDCL till completion of the work. Thereafter the samples except those destroyed during testing shall be returned to the contractor No payment will be made to the contractor for the samples or samples destroyed in testing.

The brands of all materials, articles fittings etc. approved together with the names of the manufacturers and firms from which supplies have been arranged shall be recorded in the site order book.

The contractor shall set up and maintain at his cost, a field testing laboratory for all day to day tests at his own cost to the satisfaction of the Engineer-in-Charge. This field testing laboratory shall be provided with equipment and facilities to carry out all mandatory field tests as per UADD (as the case may be) specifications. The laboratory building shall be constructed and installed with the appropriate facilities,

Temperature and humidity controls shall be available wherever necessary during testing of samples. All equipment's shall be provided by the Contractor so as to be compatible with the testing requirements specified. The Contractor shall maintain all the equipment's in good working condition for the duration of the contract. The Contractor shall provide approved qualified personnel to run the laboratory for the duration of the Contract. The number of staff and equipment available must at all times be sufficient to keep pace with the sampling and testing programmer as required by the Engineer-in-charge. The Contractor shall fully service the site laboratory and shall supply everything necessary for its proper functioning, including all transport needed to move equipment and samples to and from sampling points on the site, etc. The Contractor shall re-calibrate all measuring devices whenever so required by the Engineer-in-charge and shall submit the results of such calibration without delay. All field test shall be carried out in the presence of BSCDCL's representative. All costs towards samples, materials, collection, transport, manpower, testing etc. shall be borne by the Contractor and are deemed to be included in the rates quoted by him in the bill of quantities.

The contractor(s) shall display the calibration certificate of each equipment at the location of equipment & shall get recalibrated at least one week before its expiry date.

### **MATERIALS PROCURED WITH THE ASSISTANCE OF BSCDCL**

If any material for the execution of this contract is procured with the assistance of BSCDCL either by issue from its stores or purchase made under orders or permits or licenses obtained by BSCDCL, the contractor shall hold and use the said materials economically and solely for the purpose of this contract and shall not dispose them without the permission of Engineer-in-charge. The contractor, if required by the BSCDCL, shall return all such surplus or unserviceable materials that may be left with him after the completion of the contract or at its termination on whatsoever reason, on being paid or credited such price as the Engineer-in-charge shall determine having due regard to the conditions of materials. The price allowed to the contractor, however, shall not exceed the amount charged to him excluding the element of storage charges which shall be 10% of the cost charged to contractor. The decision of the Engineer-in-charge shall be final and conclusive.

Contractor(s) has / have to deploy security personnel for safeguarding of materials procured at site.

### **CONTRACTOR TO SUPPLY TOOLS & PLANTS**

The contractor shall provide at his own cost all materials, machinery, tools & plants as require for completion of work. In addition to this, appliances, implements, other plants, ladders, cordage, tackle, scaffolding and temporary works required for the proper execution of the work, whether original, altered or substituted and whether included in the specifications or other documents forming part of the contract or referred to in these conditions or not, or which may be necessary for the purpose of satisfying or complying with the requirements of the Engineer-in-Charge as to any matter as to which under these conditions he is entitled to be satisfied, or which he is entitled to require together with carriage therefore to and from the work. The contractor shall also supply without charge the requisite number of persons with the means and materials, necessary for the purpose of setting out works, and counting, weighing and assisting the measurement or examination at any time and from time to time of the work or materials. Failing his so doing, the same may be provided by the Engineer-in-Charge at the expense of the contractor and the expenses may be deducted, from any money due to the contractor, under this contract or otherwise and/or from his security deposit or the proceeds of sale thereof, or of a sufficient portions thereof.

### **MOBILIZATION OF MEN, MATERIALS AND MACHINERY:**

All expenses towards mobilization at site and de-mobilization including bringing in equipment, work force, materials, dismantling the equipment's, clearing the site etc. shall be deemed to be included in prices quoted and no separate payment on account of such expenses shall be entertained.

It shall be entirely the Contractor's responsibility to provide, operate and maintain all necessary construction equipment's, scaffoldings and safety, gadget, lifting tackles, tools and appliances to perform the work in a workman like and efficient manner and complete all jobs as per the specifications and within the schedule time of completion of work. Further, contractor shall also be responsible for obtaining temporary electric and

water connection for all purposes. The contractor shall also make standby arrangement for water & electricity to ensure un-interrupted supply.

It shall be the responsibility of the contractor to obtain the approval for any revision and/or modification desired by him from BSCDCL before implementation.

The procurement and supply in sequence and at the appropriate time of all materials and consumable shall be entirely the contractor's responsibilities and his rates for execution of work shall be inclusive of supply of all these items.

It is mandatory for the contractor to provide safety equipment's and gadgets to his all workers, supervisory and Technical staff engaged in the execution of the work while working. The minimum requirement (but not limited to) shall be gum boots, safety helmets, Rubber hand gloves, face masks, safety nets, safety belts, goggles etc. as per work requirements. Sufficient nos. of these equipment's and gadgets shall also be provided to BSCDCL by the contractor at his own cost for use of BSCDCL Officials and/ or workforce while working/supervision of work at site. No staff/ worker shall be allowed to enter the site without these equipment's/ gadgets.

The cost of the above equipment's/ gadgets are deemed to be included in the rates quoted by the contractor for the items & works as per Bill of Quantities and contractor shall not be entitled for any extra payment in these regard. The above norm is to be strictly complied with at site. In case the contractor is found to be deficient in providing Safety Equipment's/ Gadgets in the opinion of Engineer-in-charge, the Engineer-in-charge at his option can procure the same at the risk & cost of contractor and provide the same for the use of worksite and shall make the recoveries from the bills of the contractor for the same. The contractor shall abide by all rules & regulations pertaining to Health, Safety and Environment.

All designs, drawings, bill of quantities, etc., except Bar Bending Schedule, Shop & Fabrication drawings, for all works shall be supplied to the contractor for their scope of work all buildings services and development works by BSCDCL in phased manner as the works progress. However it shall be the duty and responsibility of the contractor to bring to the notice of the BSCDCL in writing as to any variation, discrepancy or any other changes required and to obtain revised drawings and designs and / or approval of the BSCDCL in writing for the same.

One copy of contract documents including drawings furnished to the contractor shall be kept at the site and the same shall at all reasonable times be available for inspection.

All materials, construction plants and equipment's etc. once brought by the contractor within the project area, will not be allowed to be removed from the premises without the written permission of the Engineer-in-charge. Similarly all enabling works built by the contractor for the main construction undertaken by him, shall not be dismantled and removed without the written authority of the BSCDCL.

Contractor shall have to prepare the Bar Bending Schedule, shop and fabrication drawings free of cost, if required for any of the items of work.

Five copies of these drawings each including for revision will be submitted to BSCDCL for approval. Before executing the item, shop drawings and bar bending schedule should be approved by BSCDCL.

BSCDCL shall supply Work Force in the various categories to assist the contractor in execution of the works on recoverable basis as per provision mentioned elsewhere in the contract.

All contractors' plant, machinery and equipment shall be kept in perfect condition during currency of the contract.

## **QUALITY ASSURANCE PROGRAMME**

To ensure that the services under the scope of this contract are in accordance with the specifications, the Contractor shall adopt Quality Assurance Programme to control such activities at the necessary points:

The contractor shall prepare and finalize such Quality Assurance Programme within 15 days from date of issue Letter of Award. BSCDCL shall also carryout quality audit and quality surveillance of

systems and procedures of Contractor's quality control activities. A Quality Assurance Programmer of Contractor shall generally cover the following:

His organization structure for the management and implementation of the proposed Quality Assurance Program.

- Documentation control system.
- The procedure for purpose of materials and source inspection.
- System for site controls including process controls.
- Control of non-conforming items and systems for corrective actions.
- Inspection and test procedure for site activities.
- System for indication and appraisal of inspection status.
- System for maintenance of records.
- System for handling, storage and delivery.

A quality plan detailing out quality practices and procedures, relevant standards and acceptance levels for all types of work under the scope of this contract.

All the quality reports shall be submitted by the Contractors in the formats appended hereto. Checklist enclosed here in this document shall be followed while carrying out Construction activities (items). If any item is not covered by the Checklist/ Formats appended hereto, the Format for the same may be developed and submitted to Engineer-in-Charge for approval and the same shall be adopted. These filled in formats shall be prepared in two copies and duly signed by representatives of contractor and BSCDCL. All the costs associate with Printing of Formats and testing of materials required as per technical specifications or by Engineer-in-charge shall be included in the Contractor's quoted rates in the Schedule/ Bill of quantities.

### **CONTRACT COORDINATION PROCEDURES, COORDINATION MEETINGS AND PROGRESS REPORTING**

The Contractor shall prepare and finalize in consultation with BSCDCL, a detailed contract coordination procedure within 15 days from the date of issue of Letter of Award for the purpose of execution of the Contract. The Contractor shall have to attend all the meetings at any place in India at his own cost with BSCDCL, Owners/ Clients or Consultants of BSCDCL/ Owner/ Client during the currency of the Contract, as and when required and fully cooperate with such personal and agencies involved during these discussions. The Contractor shall not deal in any way directly with the Clients/ Owners or Consultants of BSCDCL/Owner/ Clients and any dealing/correspondence if required at any time with Clients/ Owners/ Consultants shall be through BSCDCL only. During the execution of the work, Contractor shall submit at his own cost a detailed Monthly progress & programme report to the Engineer-in-charge of BSCDCL by 5th of every month. The format of monthly progress & programme report shall be as approved by Engineer-in- Charge of BSCDCL.

### **COMPLETION CERTIFICATE AND COMPLETION PLANS**

Within ten days of the completion of the work, the contractor shall give notice of such completion to the Engineer-in-Charge and within thirty days of the receipt of such notice, the Engineer-in- Charge shall inspect the work and if there is no defect in the work, shall furnish the contractor with a final certificate of completion, otherwise a provisional certificate of physical completion indicating defects (a) to be rectified by the contractor and/or (b) for which payment will be made at reduced rates, shall be issued. But no final certificate of completion shall be issued, nor shall the work be considered to be complete until the contractor shall have removed from the premises on which the

-work shall be executed all scaffolding, surplus materials, rubbish and all huts and sanitary arrangements required for his/their work people on the site in connection with the execution of the works as shall have been erected or constructed by the contractor(s) and cleaned off the dirt from all wood work, doors, windows, walls, floor or other parts of the building, in, upon, or about which the work is to be executed or of which he may have had possession for the purpose of the execution; thereof, and not until the work shall have been measured by the Engineer-in-Charge. If the contractor shall fail to comply with the requirements of this Clause as to removal of scaffolding, surplus materials and rubbish and all huts and sanitary arrangements as aforesaid and cleaning off dirt on or before the date fixed for the completion of work, the Engineer-in-Charge may at the expense of the contractor remove such scaffolding, surplus materials and rubbish etc., and dispose of the same as he thinks fit and clean off such dirt as aforesaid, and the contractor shall have no claim in respect of scaffolding or surplus materials as aforesaid except for any sum actually realized by the sale thereof less actual cost incurred on removal of materials / debris / malba etc.

The contractor shall submit completion plan as required vide General Specifications for Electrical works as applicable within thirty days of the completion of the work. In case, the contractor fails to submit the completion plan as aforesaid, he shall be liable to pay a sum equivalent to 2.5% of the value of the work subject to a ceiling of Rs.5,00,000 (Rs. Five Lakhs only) as may be fixed by the Engineer-in-charge concerned and in this respect the decision of the Engineer-in-charge shall be final and binding on the contractor.

### **PROHIBITION OF UNAUTHORISED CONSTRUCTION & OCCUPATION**

No unauthorized buildings, construction of structures should be put up by the contractor anywhere on the project site, neither any building built by him shall be occupied in un-authorized manner by him or his staff.

It shall be the responsibility of the contractor to see that the building under construction is not occupied by anybody in un-authorized manner during construction, and is handed over to the Engineer-in-Charge with vacant possession of complete building. If such building though completed is occupied illegally, then the Engineer-in-Charge shall have the option to refuse to accept the said building/buildings in that position. Any delay in acceptance on this account will be treated as the delay in completion and for such delay, a levy of compensation upto 5% of tendered value of work may be imposed by the Engineer-in-Charge whose decision shall be final both with regard to the justification and quantum and shall be binding on the contractor.

However, the Engineer-in-Charge, through a notice, may require the contractor to remove the illegal occupation any time on or before construction and delivery.

### **FORECLOSURE OF CONTRACT BY BSCDCL/OWNER**

If at any time after the commencement of the work the BSCDCL shall for any reason whatsoever is required to abandon the work or is not require the whole work thereof as specified in the tender to be carried out, the Engineer-in-Charge shall give notice in writing of the fact to the contractor, who shall have no claim to any payment of compensation whatsoever on account of any profit or advantage which he might have derived from the execution of the work in full, but which he did not derive in consequence of the foreclosure of the whole or part of the works.

### **DEFECTS LIABILITY PERIOD**

The contractor shall be responsible for the rectification of defects in the works for a period 03 years from the date of taking over of the works by the BSCDCL or clients whichever is later. Any defects discovered and brought to the notice of the contractor forthwith shall be attended to and rectified by him at his own cost and expense. In case the contractor fails to carry out these rectifications, the same may without prejudice to any other right or remedy available, be got rectified by BSCDCL at the cost and expense of the contractor.

The Contractor is expected to carry out the construction work in Workmen like manner so as to meet the requirement and specification for the project. It is expected that the

Workmanship and materials will be reasonably fit for the purpose for which they are required.

Defects or defective work is where standard and quality of workmanship and materials as specified in the contract is deficient. Defect is defined as a failure of the completed project to satisfy the express or implied quality or quantity obligations of the construction contract. Defective construction works are as the works which fail short of complying with the express descriptions or requirements of the contract, especially any drawings or specifications with any implied terms and conditions as to its quality, workmanship, durability, aesthetic, performance or design. Defects in construction projects are attributable to various reasons.

Some of the defects are structural defects results in cracks or collapse of faulty defective plumbing, inadequate or faulty drainage system, inadequate or faulty ventilation, cooling or heating systems, inadequate fire systems etc. The defects could be various on accounts of different reasons for variety of the projects.

The Engineering In charge/Project Officer shall issue the practical completion certificate for the project. During the Defect Liability Period which commences on completion of the work, the Engineering In charge shall inform or the contractor is expected to be informed of any defective works by the Employer's representative of the defects and make good at contractor's cost with an intention of giving opportunity to the contractor of making good the defects appeared during that period. It is the contractor's obligation under the contract to rectify the defects that appear during Defect Liability Period and the contractor shall within a reasonable time after receipt of such instructions comply with the same at his own cost. The Engineering In charge/Project Officer shall issue a certificate to that effect and completion of making good defects shall be deemed for all the purpose of this contract to have taken place on the day named in such defect liability certificate.

If defective work or workmanship or design have been knowingly covered-up or concealed so as to constitute fraud, commencement of the Defect Liability Period may be delayed. The decided period may be delayed until **discover** actually occurs on at least the defect could have been discovered with reasonable diligence, whichever is earlier.

Also, in case of defect, the Engineer shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at. The Defects Liability Period shall be extended for as long as Defects remain to be corrected. Every time notice of Defect/Defects is given, the Contractor shall correct the notified Defect/Defects within the duration of time specified by the Engineer's notice. The Engineer may issue notice to the Contractor to carry out removal of defects or deficiencies, if any, noticed in his inspection, or brought to his notice. The Contractor shall remove the defects and deficiencies within the period specified in the notice and submit to the Engineer a compliance report.

It is the Completion Stage when the contractor has completed all of the works and fixed all of the defects that were on the list of issue by Engineer-in-charge. When this happens, the engineer must issue a 'Certificate of Completion'. On the issue of 'Certificate of Completion', the 'Defect Liability Period' starts. The contractor also must issue a 'Certificate statement' as an acknowledgment to the engineer not later than 14 days after the 'Certificate of Completion' has been issued. During the 'Defect Liability Period', the contractor has to obey all written instructions from the engineer to carryout repairs and fix any defects which appear in the Permanent Works. If the contractor does not ,due to his own faults finish the repair works or fix the defects by the end of 'Defect Liability Period', the 'Defect Liability Period' will continue until all works instructed by engineer is done.

## **RESTRICTION ON SUBLETTING**

The contractor shall not sublet or assign the whole or part of the works except where otherwise provided, by the contract. The provision of labour on piece work basis shall not be deemed to be a subletting under this clause.

The contractor may entrust specialist items of works like MEP services, HVAC, Lifts, Building Management System, Water Proofing, and Data & Communication networking, interiors, landscaping etc. to the agencies specialized in the specific trade. The contractor shall give the names and details of such firm whom it is going to employ for approval of BSCDCL. These details shall include the expertise, financial status, technical manpower, equipment, resources and list of works executed and on hand of the specialist agency. Further, prior written approval is required from BSCDCL to deploy such agency / sub-contractor.

## **FORCE MAJEURE**

Any delay in or failure to perform of either party, shall not constitute default so as to give rise to any claim for damages, to the extent such delay or failure to perform is caused by an act of God, or by fire, explosion, flood or other natural catastrophe, governmental legislation, orders or regulation etc.. The time for performance of the obligation by the parties shall be deemed to be extended for a period equal to the duration of the force majeure event. Both parties shall make their best efforts to minimize the delay caused by the force majeure event. If the failure / delay of the client /owner in handing over the entire site and / or in releasing the funds continues even on the expiry of the stipulated date of completion, BSCDCL, may, at the request of the contractor, foreclose the contract without any liability to either party. In the event of such foreclosure, the contractor shall not be entitled to any compensation whatsoever. If prior to such foreclosure the contractor has brought any materials to the site, the Engineer-in-Charge shall always have the option of taking over of all such materials at their purchase price or at the local current rates, whichever is lower.

## **NO COMPENSATION CLAUSE**

The contractor shall have no claim whatsoever for compensation or idle charges against BSCDCL on any ground or for any reason, whatsoever.

## **DIRECTION FOR WORKS**

All works under the contract shall be executed under the direction and subject to approval in all respect of the Engineer-in-Charge of BSCDCL who shall be entitled to direct at whatever point or points and in whatever manner works are to be commenced and executed.

The Engineer-in-Charge and his representative shall communicate or confirm their instructions to the contractor in respect of the execution of work during their site inspection in a 'Works Site Order Book' maintained at the site office of Engineer-in-Charge. The contractor or his authorized representative shall confirm receipt of such instructions by signing against the relevant orders in the book.

## **WORK IN MONSOON AND RAIN**

The execution of the work may entail working in the monsoon also. The contractor must maintain labour force as may be required for the job and plan and execute the construction and erection according to the prescribed schedule. No special/ extra rate will be considered for such work in monsoon. The contractors' rate shall be considered inclusive of cost of dewatering due to rains required if any and no extra rate shall be payable on this account. The stipulated period for completion of project includes the monsoon period, holidays & festivals.



## **WORK ON SUNDAYS, HOLIDAYS AND DURING NIGHT**

For carrying out work on Sunday and Holidays or during night, the contractor will approach the Engineer-in-Charge or his representative at least two days in advance and obtain his permission. The Engineer-in-Charge at his discretion can refuse such permission. The contractor shall have no claim on this account whatsoever. If work demand, the contractor shall make arrangements to carry out the work on Sundays, Holidays and in two, three shifts with the approval of Engineer-in- Charge at no extra cost to BSCDCL.

## **WATER AND ELECTRICITY**

The contractor shall make his own arrangement for Water & Electrical power for construction and other purposes at his own cost and pay requisite electricity and water charges. The contractor shall also make standby arrangement for water & electricity to ensure un-interrupted supply.

## **LAND FOR LABOUR HUTS/SITE OFFICE & STORAGE ACCOMMODATION**

The contractor shall arrange the land for temporary office, storage accommodation and labour huts at his own cost and get the clearance of local authorities for setting up/construction of labour camp and same is deemed to be included in the rates quoted by the contractor for the works. The contractor shall ensure that the area of labour huts is kept clean and sanitary conditions are maintained as laid down by the local authorities controlling the area. The labour huts shall be so placed that it does not hinder the progress of work or access to the worksite. The vacant possession of the land used, for the purpose shall be given back by contractor after completion of the work.

The security deposit of the contractor shall be released only after contractor demolishes all structures including foundations and gives back clear vacant possession of this land In the event the contractor has to shift his labour campus at any time during execution of the work on the instructions of local authorities or as per the requirement of the work progress or as may be required by BSCDCL, he shall comply with such instructions at his cost and risk and no claim whatsoever shall be entertained on this account.

## **WATCH, WARD AND LIGHTING OF WORK PLACE**

The contractor shall at his own cost take all precautions to ensure safety of life and property by providing necessary barriers, OBSTRUCTIONS, lights, watchmen etc. during the progress of work as directed by Engineer-in- charge.

## **SCHEDULE OF QUANTITIES/ BILL OF QUANTITIES**

The quantities shown against the various items of work are only approximate quantities which may vary as per the actual requirement at site. No item which is not covered in the bill of quantities shall be executed by the Contractor without the approval of the BSCDCL. In case any Extra/Substituted item is carried out without specific-approval, the same will not be paid.

## **EXTRA ITEMS OF WORK THAT MAY CROP-UP DURING EXECUTION OF WORK**

- (i) For any work other than given in the Financial Bid which is found necessary to be executed in the course of work, such items shall be executed by the contractor as per the following, rates for the items shall be derived as below.
  - a) If tender rate is above, rate will be as per current UADD SOR items
  - b) If tender rate is below, rate will be as per current UADD SOR items
  - c) Incase the rate of item is not available in UADD SOR, but available in DSR then rate will be as per current DSR item.
  - c) In case the rate for item is not available in the UADD/DSR then the rate analysis shall be done as per market rate and got approved from appropriate authority of BSCDCL, the quantity of such items should not more than 10% of the individual project cost.

(ii) Escalation on extra item of work is not payable.

## **WATER PROOF TREATMENT**

**3.8** The water proof treatment shall be of type and specifications as given in the schedule of quantities. The water-proofing of basement, roofs, water retaining areas shall be and remain fully effective for a period of not less than 10(Ten) years to be reckoned from the date of expiring of the Defect Liability period, prescribed in the contract. At any time during the said guarantee period if BSCDCL finds any defects in the said treatment or any evidence of re-infestation, dampness, leakage in any part of buildings or structure and notifies the contractor of the same, the contractor shall be liable to rectify the defect or give re-treatment and shall commence the work or such rectification or re- treatment within seven days from the date of issue of such letter to him. If the contractor fails to commence such work within the stipulated period, the BSCDCL may get the same done by another agency at the Contractor's cost and risk and the decision of the Engineer-in-Charge of BSCDCL for the cost payable by the contractor shall be final and binding upon him.

Re-treatment if required shall be attended to and carried out by the Contractor within seven days of the notice from Engineer-in-Charge of BSCDCL.

The BSCDCL reserves the right to get the quality of treatment checked in accordance with recognized test methods and in case it is found that the chemicals with the required concentration and rate of application have not been applied, or the water proofing treatment is not done as per specifications, the contractor will be required to do the re-treatment in accordance with the required concentration & specifications at no extra cost failing which no payment for such work will be made. The extent of work thus rejected shall be determined by BSCDCL. Water proofing shall be got done through approved / specialized agencies only with prior approval of Engineer-in- Charge.

The contractor shall make such arrangement as may be necessary to safe guard the workers and residents of the building against any poisonous effect of the chemicals used during the execution of the work.

During the execution of work, if any damage shall occur to the treatment already done, either due to rain or any other circumstances, the same shall be rectified and made good to the entire satisfaction of Engineer-In-Charge by the contractor at his cost and risk.

The contractor shall make his own arrangement for all equipment's required for the execution of the job. The contractor whose tender is accepted shall execute Guarantee Bond in the prescribed form as appended for guaranteeing the water proofing treatment.

## **INDIAN STANDARDS**

Wherever any reference is made to any IS in any particular specifications, drawings or bill of quantities, it means the Indian Standards editions with up to date amendments issued till last date of receipt of tender documents.

## **CENTERING & SHUTTERING**

Marine plywood or steel plates or any material mentioned elsewhere in the tender document or as approved by Engineer-in-Charge shall be used for formwork. The shuttering plates shall be cleaned and oiled before every repetition and shall be used only after obtaining approval of BSCDCL's Engineers at site. The number of repetitions allowed for plywood and steel shuttering shall be at the discretion of Engineer-in-Charge of BSCDCL depending upon the condition of shuttering surface after each use and the decision of Engineer-in-Charge in this regard shall be final and binding on the contractor. No claim whatsoever on this account shall be admissible.

## **RECORDS OF CONSUMPTION OF CEMENT & STEEL**

For the purpose of keeping a record of cement and steel received at site and consumed in works, the contractor shall maintain a properly bound register in the form approved by the BSCDCL, showing columns like quantity received and used in work and balance in hand etc. This register shall be signed daily by the contractor's representative and BSCDCL's representative.

The register of cement & steel shall be kept at site in the safe custody of BSCDCL's Engineer during progress of the work. This provision will not, however, absolve the contractor from the quality of the final product. In case cement or steel quantity consumed is lesser as compared to the theoretical requirement of the same as per MORTH/UADD/MPPW D/CPWD (as the case may be) specifications/ norms, the work will be devalued and/ or a penal rate (i.e. double the rate at which cement/ steel purchased last) recovery for lesser consumption of cement/ steel shall be made in the item rates of the work done subject to the condition that the tests results fall within the acceptable criteria as per MORTH/UADD/MPPWD/CPWD (as the case may be) specifications otherwise the work shall have to be dismantled and redone by the contractor at no extra cost. In case of cement, if actual consumption is less than 98% of the theoretical consumption, a recovery shall be effected from the contractors bills at the penal rate for the actual quantity which is lower than 98% of theoretical consumption.

### **TESTS AND INSPECTION**

The contractor shall carry out the various mandatory tests as per specifications and the technical documents that will be furnished to him during the performance of the work. All the tests on materials, as recommended by UADD/MPPW D/CPWD, MORTH and relevant Indian Standard Codes or other standard specifications (including all amendments current at the last date of submission of tender documents) shall be got carried out by the contractor at the field testing laboratory or any other recognized institution/ laboratory, at the direction of the BSCDCL. All testing charges, expenses etc. shall be borne by the contractor. All the tests, either on the field or outside laboratories concerning the execution of the work and supply of materials shall be got carried out by the contractor or BSCDCL at the cost of the Contractor.

### **WORKS TO BE OPEN TO INSPECTION**

All works executed or under the course of execution in pursuance of this contract shall at all times be open to inspection and supervision of the BSCDCL. The work during its progress or after its completion may also be inspected, by Chief Technical Examiner of Government of India (CTE) and/or an inspecting authority of State Government of State in which work is executed and/or by third party checks by owner/lients. The compliance of observations/improvements as suggested by the inspecting officers of BSCDCL/CTE/ State authorities/ Owners shall be obligatory on the part of the Contractor at the cost of contractor.

### **BORROW AREAS**

The contractor shall make his own arrangements for borrow pits and borrow disposal areas including their approaches and space for movement of man, machinery, other equipment's as required for carrying out the works. The contractor shall be responsible for taking all safety measures, getting approval, making payment of royalties, charges etc. and nothing extra shall be paid to the contractor on this account and unit rates quoted by the contractor for various items of bill of quantities shall deemed to include the same.

### **3.9 CARE OF WORKS**

From the commencement to the completion of works and handing over, the contractor shall take full responsibility for care thereof all the works and in case of any damage/loss to the works or to any part thereof or to any temporary works due to lack of precautions or due to negligence on part of Contractor, the same shall be made good by the Contractor.

### **CO-ORDINATION WITH OTHER AGENCIES**

Work shall be carried out in such a manner that the work of other Agencies operating at the site is not hampered due to any action of the Contractor. Proper Co-ordination with other Agencies will be Contractor's responsibility. In case of any dispute, the decision of BSCDCL shall be final and binding on the contractor. No claim whatsoever shall be admissible on this account.

### **SETTING OUT OF THE WORKS**

The contractor shall be responsible for the true and proper setting out of the works and for the correctness of the position, levels, dimensions and alignment of all parts of the works. If at any time during the progress of works, shall any error appear or arise in the position, levels, dimensions or alignment of any part of the works, the contractor shall at his own expenses rectify such error to the satisfaction of Engineer-in-charge. The checking of any setting out or of any line or level by the engineers of BSCDCL shall not in any way relieve the contractor of his responsibility for the correctness.

## **NOTICE BEFORE COVERING UP THE WORK**

The contractor shall give not less than seven days' notice before covering up or otherwise placing beyond the reach of measurement any work, to the Engineer-in-charge in order that the same may be inspected and measured. If any work is covered up or placed beyond the reach of inspection/measurement without such notice or his consent being obtained the same shall be uncovered at the contractor expenses and he shall have to make it good at his own expenses.

## **SITE CLEARANCE**

The contractor shall ensure that the working site is kept clean and free of obstructions for easy access to job site and also from safety point of view. Before handing over the work to the BSCDCL the contractor shall remove all temporary structures like the site offices, cement go-down, stores, labour hutments etc., scaffolding rubbish, debris etc. left over materials tools and plants, equipment's etc., clean the site to the entire satisfaction of the Engineer-in-charge. If this is not done the same will be got done by BSCDCL at his risk and cost.

The contractor shall clean all floors, remove cement/ lime/ paint drops and deposits, clean joinery, glass panes etc., touching all painter's works and carry out all other necessary items of works to make the premises clean and tidy before handing over the building, and the rates quoted by the contractor shall be deemed to have included the same.

## **SET-OFF OF CONTRACTOR'S LIABILITIES**

BSCDCL shall have the right to deduct or set off the expenses incurred or likely to be incurred by it in rectifying the defects and/or any claim under this agreement against the Contractor from any or against any amount payable to the contractor under this agreement including security deposit and proceeds of performance guarantee.

## **POSSESSION PRIOR TO COMPLETION**

BSCDCL shall have the right to take possession of or use any completed or partially completed work or part of the work. Such possession or use shall not be deemed to be any acceptance of any work not completed in accordance with the contract agreement. If such prior possession or use by BSCDCL delays the progress of work an equitable adjustment in the time of completion will be made and the contract agreement shall be deemed to be modified accordingly. The decision of BSCDCL in such case shall be final binding and conclusive.

When the whole of the works or the items or the groups of items of work have been completed the contractor will give a notice to that effect to the Engineer in writing. The Engineer shall within 7 days of the date of receipt of such notice inspect the works and give instructions in writing to the contractor specifying the balance items of work which are required to be done by the contractor and shall also notify the contractor of any defect in the works affecting completion.

- 3.10** The contractor shall during the course of execution prepare and keep updated a complete set of 'as built' drawings to show each and every change from the contract drawings, changes recorded shall be countersigned by the Engineer-in-Charge and the contractor. Four copies of 'as built' drawings shall be supplied to BSCDCL by the contractor within 30 days of the completion. All costs incurred in this respect shall be borne by the contractor.

## **EMPLOYMENT OF PERSONNEL**

The contractor shall employ only Indian Nationals as his representatives, servants and workmen after verifying their antecedents and loyalty. He shall ensure that no personnel of doubtful antecedents and any other nationality in any way is associated with the works.

In case BSCDCL observed misconduct negligence or incompetence etc. on the part of any representative, agent, servant and workmen or employees etc. of the contractor, the BSCDCL shall have full power and without giving any reason to the contractor, instruct the contractor to remove such engineer / staff / worker from site and provide suitable replacements. The decision of

the Engineer-in-charge shall be final and binding on the contractor. The contractor shall not be allowed any compensation on this account.

### **TECHNICAL STAFF FOR WORK**

The contractor shall employ at his cost the adequate number of technical staff during the execution of this work depending upon the requirement of work. For this purpose the numbers to be deployed, their qualification, experience as decided by BSCDCL shall be final and binding on contractor. The contractor shall not be entitled for any extra payment in this regard.

The technical staff should be available at site, whenever required by BSCDCL to take instructions. Within 15 days of Letter of Award, the contractor shall submit a site organizational chart and resume including details of experience of the Project-in-Charge and other staff proposed to be deputed by him and the technical team shall be deputed by them on the Project after getting approval from Engineer-in-Charge. If desired by the contractor at later date, the Project-in-Charge and other staff whose resume is approved by BSCDCL can be replaced with prior written approval of BSCDCL and replacement shall be with equivalent or superior candidate only. Decision of Engineer-in-Charge shall be final and binding on the contractor.

Even after approving the site organizational chart, the Engineer-in-Charge due to technical reasons and exigency of work can direct the contractor to depute such additional staff as in view of Engineer-in-Charge is necessary and having qualification and experience as approved by the Engineer-in-Charge. The removal of such additional staff from the site shall only be with the prior written approval of Engineer-in-Charge. The contractor shall not be paid anything extra whatsoever on account of deployment of additional staff and decision of the Engineer-in-Charge shall be final and binding on the contractor.

In case the contractor fails to employ the staff as aforesaid he shall be liable to pay a reasonable amount not exceeding a sum of **Rs. 50,000** (Rupees Fifty Thousand only) for each month of default in the case of each person. The decision of the Engineer-in-charge as to number of Technical Staff to be adequate for the project and the period for which the desired strength of technical staff was not employed by the contractor and as to the reasonableness of the amount to be deducted on this account shall be final and binding on the contractor as to the amount and the contractor's liability to pay the said amount.

### **VALUABLE ARTICLES FOUND AT SITE**

All gold, silver and other minerals of any description and all precious stones, coins, treasure, relics, antiques and all other similar things which shall be found in, under or upon the site, shall be the property of the owner/ BSCDCL.

### **MATERIALS OBTAINED FROM DISMANTLEMENT TO BE OWNER'S PROPERTY**

All materials like stone, boulders and other materials obtained during the work of dismantling, excavation etc. will be considered BSCDCL/owner property and such materials shall be disposed off to the best advantage of BSCDCL/owner according to the instructions in writing issued by the Engineer-in-charge.

### **FURNISHED OFFICE ACCOMMODATION & MOBILITY COMMUNICATION TO BE ARRANGED BY CONTRACTOR**

On acceptance of tender, the contractor at his own cost will construct a suitably equipped office at site with basic facilities such as telephone(s), fax, internet, photocopier, computer(s) and printer(s) along with operator(s), regular electric & drinking water supply and staff carrying vehicles for the supervisory staff with driver, fuel and maintenance etc. as per the requirement of the project. The contractor shall maintain the aforesaid facilities intact/operational during the tenancy of the contract or maximum up to 6 months beyond the stipulated contractual completion date if the work is delayed due to any reasons. Operation and maintenance cost of all such materials, equipment's / services shall be borne by the contractor.

The contractor shall also make sufficient arrangement for photography/video-graphy so that photographs video can be taken of any specific activity at any point of time. The contractor shall also make arrangement of software like MS Project etc. for the purpose of preparing progress report etc.

The contractor shall make all arrangements for ground breaking ceremony/inaugural function etc. for the project as required and the cost towards it deemed to be included in his rates/offer. Any expenditure already incurred/to be incurred by BSCDCL, shall be recovered from the contractor.

## **LABOUR LAWS**

### **LABOUR LAWS TO BE COMPLIED BY THE CONTRACTOR**

The contractor shall obtain a valid license under the contract labour (Regulation & Abolition) Act 1970 and the contract labour Act (Regulation & Abolition) Central Rules 1971 and amended from time to time, and continue to have a valid license until the completion of the work including defect liability period. The contractor shall also adhere by the provision of the child labour (Prohibition and Regulation) Act. 1986 and as amended from time to time.

The contractor shall also comply with the provisions of the building and other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996 and the building and other Construction Workers Welfare Cess Act, 1996.

Any failure to fulfill above requirement shall attract the penal provisions of this contract arising out the resultant for non-execution of the work before the commencement of work. No labour below the age of 18 years shall be employed on the work.

#### **Payment of wages:**

The contractor shall pay to labour employed by him either directly or through subcontractors, wages not less than fair wages as defined in the BSCDCL Contractor's Labour Regulations or as per the provisions of the Contract Labour (Regulation and Abolition) Act, 1970 and the contract Labour (Regulation and Abolition) Central Rules, 1971, wherever applicable.

The contractor shall, notwithstanding the provisions of any contract to the contrary, cause to be paid fair wage to labour indirectly engaged on the work, including any labour engaged by his sub-contractors in connection with the said work, as if the labour had been immediately employed by him. In respect of all labour directly or indirectly employed in the works for performance of the contractor's part of this contract, the contractor shall comply with or cause to be complied with the BSCDCL contractor's Labour Regulations in regard to payment of wages, wage period, deductions from wages recovery of wages not paid and deductions unauthorized made, maintenance of wage books or wage slips, publication of scale of wages and other terms of employment, inspection and submission of periodical returns and all other matters of the like nature or as per the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, and the Contract Labour (Regulation and Abolition) Central Rules, 1971, wherever applicable.

- (a) The Engineer-in-Charge concerned shall have the right to deduct from the moneys due to the contractor any sum required or estimated to be required for making good the loss suffered by a worker or workers by reason of non-fulfilment of the conditions of the contract for the benefit of the workers, non-payment of wages or of deductions made from his or their wages which are not justified by their terms of the contract or non-observance of the Regulations.
- (b) Under the provision of Minimum Wages (Central) Rules, 1950, the contractor is bound to allow to the labours directly or indirectly employed in the works one day rest for 6 days continuous work and pay wages at the same rate as for duty. In the event of default, the Engineer-in-Charge shall have the right to deduct the sum or sums not paid on account of wages for weekly holidays to any labours and pay the same to the persons entitled thereto from any money due to the contractor by the Engineer-in-Charge concerned. The contractor shall comply with the provisions of the Payment of Wages Act, 1936, Minimum Wages Act, 1948, Employees Liability Act, 1938, Workmen's Compensation Act, 1923, Industrial

Disputes Act, 1947, Maternity Benefits Act, 1961, and the Contractor's Labour (Regulation and Abolition) Act 1970, or the modifications thereof or any other laws relating thereto and the rules made there under from time to time.

The contractor shall indemnify and keep indemnified BSCDCL against payments to be made under and for the observance of the laws aforesaid and the BSCDCL Contractor's Labour Regulations without prejudice to his right to claim indemnity from his sub-contractors.

The laws aforesaid shall be deemed to be a part of this contract and any breach thereof shall be deemed to be a breach of this contract.

### **LABOUR SAFETY PROVISION**

The contractor shall be fully responsible to observe the labour safety provisions:

The contractor shall at his own cost take all precautions to ensure safety of life and property by providing necessary barriers, lights, watchmen etc. during the progress of work as directed by Engineer-in-charge

In case of all labour directly or indirectly employed in work for the performance on the contractor's part of this contract, the contractor shall comply with all rules framed by Govt. from time to time for the protection of health and sanitary arrangements for workers.

### **OBSERVANCE OF LABOUR LAWS**

The contractor shall be fully responsible for observance of all labour laws applicable including local laws and other laws applicable in this matter and shall indemnify and keep indemnified BSCDCL against effect or non observance of any such laws. The contractor shall be liable to make payment to all its employees, workers and sub-contractors and make compliance with labour laws. If BSCDCL or the client/ owner is held liable as "Principal Employer" to pay contributions etc. under legislation of Government or Court decision in respect of the employees of the contractor, then the contractor would reimburse the amount of such payments, contribution etc. to BSCDCL and/ or same shall be deducted from the payments, security deposit etc. of the contractor.

The Contractor shall submit proof of having valid EPF registration certificate. He shall within 7 days of the close of every month, submit to BSCDCL a statement showing the recoveries of contributions in respect of each employee employed by or through him and shall furnish to BSCDCL such information as the BSCDCL is required to furnish under the provisions of para 36 B of the EPF scheme 1952 to the EPF authorities and other information required by EPFO authorities from time to time. He shall also submit a copy of challan every month in token of proof of having deposited the subscription and contribution of workers engaged on the project.

In case, the contractor is not complying the above provision BSCDCL shall withhold payment to the extent of 4.70% (Four point Seven Zero percent) of the value of the Running Account bill and shall release only after the submission of above mentioned details. If it is incumbent upon BSCDCL to deposit withhold amount with EPF authorities, the withhold amount shall be deposited by BSCDCL with EPF authorities. In such a case BSCDCL shall not refund this withheld amount to the contractor even after the production of EPF registration certificate.

### **MINIMUM WAGES ACT**

The contractor shall comply with all the provisions of the minimum wages Act, 1948, contract labour Act (Regulation & Abolition) 1970, and rules framed there under and other labour laws/local laws affecting contract labour that may be brought into force from time to time.

### **LABOUR CESS**

The rates of the contractor shall be inclusive of labour cess. BSCDCL shall make a recovery @ 1% on account of labour cess from each RA bill of the contractor and labour cess so recovered/deducted shall be deposited with the Labour Board of the concerned state. In case the Labour Board is not established in the state, recovery made by BSCDCL on account of labour

cess shall be retained under suspense account and will be deposited with the Labour Board at later date as & when the Labour Board is constituted in the state. Every contractor, sub-contractor, affiliates, their legal assigns or heirs as the case may, shall be responsible for registration of every Building worker who has completed eighteen years of age but has not completed sixty years of age and who has been engaged in any Building or Other Construction Work for not less than Ninety Days during the preceding twelve months; with the Board / Funds as applicable under various sections of "THE BUILDINGS AND OTHER Construction workers (regulation of employment and conditions of service) act, 1996 and the building and other Construction workers' welfare cess act, 1996. The contractor shall also be responsible for maintaining register of beneficiaries i.e. the workers in such form as may be prescribed by the competent authority & the same shall be kept open at all reasonable times for inspection of relevant authority and officials of client / BSCDCL. The contractor shall be further responsible for maintaining such register & records; giving such particulars of Building workers employed by him, the work performed by them, the number of hours of work which shall constitute a normal working day, the wages paid to them, the receipts given by them and, such other particulars in such form as may be prescribed by the authority or BSCDCL.

In the event of contractor failing to comply with the above clause(s) in part or in full, BSCDCL, without prejudice to any other rights or remedy available under law or any other clause(s) of contract, shall be at absolute liberty to forfeit any sum or sums that are payable or could become payable on account of execution of contract work and decision of Engineer-in-charge shall be final & binding in this regard on the contractor.

### **RECOVERY OF COMPENSATION PAID TO WORKMEN**

In every case in which by virtue of the provisions sub-section (1) of Section 12, of the Workmen's Compensation Act, 1923, BSCDCL is obliged to pay compensation to a workman employed by the contractor, in execution of the works, BSCDCL will recover from the contractor, the amount of the compensation so paid; and, without prejudice to the rights of the BSCDCL under sub-section (2) of Section 12, of the said Act, BSCDCL shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due to the contractor whether under this contract or otherwise. BSCDCL shall not be bound to contest any claim made against it under sub-section (1) of Section 12, of the said Act, except on the written request of the contractor and upon his giving to BSCDCL full security for all costs for which BSCDCL might become liable in consequence of contesting such claim.

### **ENSURING PAYMENT AND AMENITIES TO WORKERS IF CONTRACTOR FAILS**

In every case in which by virtue of the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, and of the Contract Labour (Regulation and Abolition) Central Rules, 1971, BSCDCL is obliged to pay any amounts of wages to a workman employed by the contractor in execution of the works, or to incur any expenditure in providing welfare and health amenities required to be provided under the above said Act or under the BSCDCL Contractor's Labour Regulations, or under the Rules framed by Government from time to time for the protection of health and sanitary arrangements for workers employed by BSCDCL's Contractors, BSCDCL will recover from the contractor, the amount of wages so paid or the amount of expenditure so incurred; and without prejudice to any other right or remedy available under this contract, BSCDCL shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due by BSCDCL to the contractor whether under this contract or otherwise BSCDCL shall not be bound to contest any claim made against it under sub-section (1) of Section 20, sub-section (4) of Section 21, of the said Act, except on the written request of the contractor and upon his giving to the BSCDCL full security for all costs for which BSCDCL might become liable in contesting such claim.

### **CHANGE IN FIRM'S CONSTITUTION TO BE INTIMATED**

Where the contractor is a partnership firm, the prior approval in writing of the Engineer-in-Charge shall be obtained before any change is made in the constitution of the firm. Where the contractor is an individual or a Hindu undivided family business concern such approval as aforesaid shall likewise be obtained before the contractor enters into any partnership agreement where under the partnership firm would have the right to carry out the works hereby undertaken by the contractor. If prior approval as aforesaid is not obtained, the contract shall be deemed to have been assigned in contravention as per conditions of tender document



hereof and the same action may be taken, and the same consequences shall ensue as provided in the said conditions of contract.

### **INDEMNITY AGAINST PATENT RIGHTS**

The contractor shall fully indemnify the BSCDCL from and against all claims and proceedings for or on account of any infringement of any patent rights, design, trademark or name or other protected rights in respect of any construction plant, machine, work or material used for in connection with the works or temporary works.

### **LAW COVERING THE CONTRACT**

This contract shall be governed by the Indian laws for the time being in force.

### **LAWS, BYE-LAWS RELATING TO THE WORK**

The contractor shall strictly adhere by the provisions, for the time being in force, of law relating to works or any regulations and bylaws made by any local authority or any water & lighting agencies or any undertakings within the limits of the jurisdiction of which the work is proposed to be executed. The contractor shall be bound to give to the authorities concerned such notices and take all approvals as may be provided in the law, regulations or bylaws as aforesaid, and to pay all fees and taxes payable to such authorities in respect thereof.

### **CONTRACT AGREEMENT**

The Contractor shall enter into a Contract Agreement with the BSCDCL within 10 (TEN) days from the date of Letter of Award or within such extended time, as may be granted by the BSCDCL failing which no payment shall be released to the contractor. The cost of stamp papers, stamp duty, registration, if applicable on the contract, shall be borne by the Contractor. In case, the contractor does not sign the agreement as above or start the work within 10 (Ten) days of the issue of letter of Award, his earnest money is liable to be forfeited and Letter of award consequently will stand withdrawn.

### **MANNER OF EXECUTION OF AGREEMENT**

The agreement as per prescribed Performa as enclosed shall be signed at the office of the BSCDCL within 10(TEN days) days from the date of issue of Letter of Award. The Contractor shall provide for signing of the Contract, appropriate Power of Attorney and the requisite documents/ materials. Unless and until a formal contract is prepared and executed, the Letter of Award read in conjunction with the Tendering Documents will constitute a binding contract.

The agreement will be signed in five originals and the Contractor shall be provided with one signed original and the other four originals will be retained by the BSCDCL

The Contractor shall provide free of cost to the BSCDCL all the Engineering data, drawings and descriptive materials submitted along with the tender, in at least three (3) copies to form an integral part of the Agreement within seven 7 days after issuing of Letter of Award.

Subsequent to signing of the Agreement, the Contractor at his own cost shall provide to the BSCDCL with at least five (5) true hard bound copies of Agreement within thirty (30) days of its signing.

### **JURISDICTION**

The agreement shall be executed at BHOPAL on non-judicial stamp paper purchased in BHOPAL and the courts in BHOPAL alone will have jurisdiction to deal with matters arising there from, to the exclusion of all other courts.

## **ARBITRATION**

### **1. Arbitration Procedure:**

If the efforts, to resolve all or any of the disputes through conciliation fail, then such a dispute shall be referred within 30 days from conclusion of conciliation process to a Sole Arbitrator who would be nominated by Executive Director Bhopal Smart City Development Corporation Limited, Bhopal. The arbitration and conciliation act 1996 as amended from time to time will be applicable. The venue of such arbitration shall be at Bhopal. The award of the sole Arbitrator shall be binding on all parties. The cost of Arbitration shall be borne by the respective parties. There will be no objections if the sole arbitrator nominated or appointed is an employee of BSCDCL.

### **2. The place of arbitration shall be Bhopal, M.P.**

### **3. English Language**

The request for arbitration, the answer to the request, the terms of reference, any written submissions, any orders and awards shall be in English and, if oral hearings take place, English shall be the language to be used in the hearings. The award shall be made in writing.

### **4. Enforcement of Award**

The Parties agree that the decision or award, which shall be a speaking order, resulting from arbitration shall be final and binding upon the Parties and shall be enforceable in accordance with the provision of the Arbitration and Conciliation Act 1996 subject to the rights of the aggrieved parties to secure relief from any higher forum.

### **5. Performance during Arbitration**

The Arbitration Proceedings shall be governed by Indian Arbitration and Conciliation Act 1996, as amended from time to time including provisions in force at the time the reference is made. Pending the submission of and/or decision on a Dispute and until the arbitral award is published; the Parties shall continue to perform their respective obligations under this Agreement without prejudice to a final adjustment in accordance with such award. The courts at Bhopal shall have the sole exclusive jurisdiction to try all the cases arising out of this agreement.

### **6. Notices**

That any notice under the terms of this License shall be in writing by registered post or delivered personally and signed by the party or his/its duly authorized representative giving such notice. All activities including day to day management, billing, termination etc. will be carried out from the office of the CEO, Smart City Development Corporation Limited Bhopal or by his duly authorized representative. Notice shall be addressed as follows:

(Chief Executive Officer)  
Bhopal Smart City Development corporation Ltd.

## “ADDITIONAL GENERAL CONDITIONS AND SPECIFICATIONS”

NOTE: These are to apply as additional specifications and conditions, unless otherwise already provided for contradictorily else-where in this contract.

### **1.1 CONTRACTOR TO INFORM HIMSELF FULLY:**

The Contractor shall be deemed to have carefully examined the work and site conditions including labour, the general and the special conditions, specifications, schedules have visited the site of the work and to have fully informed himself regarding the local conditions and carried out his own investigations to arrive at rates quoted in the tender. In this regard, he will be given necessary information to the best of knowledge of Department but without any guarantee about it. If he shall have any doubt as to the meaning of any portions of these general conditions or the special conditions, or the scope of work or the specifications and drawings or any other matter concerning the contract, he shall in good time, before submitting his tender, set forth

the particulars thereof and submit them to the Project Engineer, BSCDCL, Bhopal -462023 in writing in order that such doubts may be clarified authoritatively BSCDCL

Contractor No. of Corrections Project Engineer before tendering. Once a tender is submitted, the matter will be decided according to tender conditions in the absence of such authentic prequalification.

### **1.2 ERRORS, OMISSION AND DISCREPANCIES:**

a) In case of errors, omissions and /or disagreements between written and scaled dimensions on the drawing or between drawing and specifications etc. the following order of preference shall apply.

(i) Between actual scaled and written dimensions or descriptions on a drawing the latter shall be adopted.

(ii) Between the written or shown description of dimensions in the drawing and corresponding one in the specifications, the latter shall apply.

(iii) Between the quantities shown in schedule of quantities and those arrived at from the drawings, the latter shall apply.

(iv) Between the written description of the item in the schedule of quantities and the detailed description in the specifications of the same items, the latter shall apply.

b) In case of difference between the rates written in figures and words, the rate adopted by the contractor for working out the total amount of the item will be taken as correct. In order cases correct rates would be that, which is lower. In all cases of omissions and / or doubts or discrepancies in the dimensions or descriptions of any item or specifications, a reference shall be made to the Project Engineer, BSCDCL whose elucidation, elaboration or decision shall be considered as authentic. The contractor shall be held responsible for any errors that may occur in the work through lack of such reference and precaution.

### **1.3 CHANGE OF CEMENT CONTENT ETC**

**DELETED**

### **1.4 WORKING METHODS AND PROGRESS SCHEDULES:**

(a) Contractor shall submit within times stipulated by the Engineer, in writing the details of actual methods that would be adopted by the contractor for the execution of any items as required by Engineer ,at each of the location, supported by necessary detailed drawings and sketches including those of the Plant and Machinery that would be used ,their locations, arrangement for conveying and handling materials etc. and obtain prior approval of the Engineer-in-charge well in advance of starting of such

item of work. The Engineer-in-charge reserves the right to suggest modifications or make complete changes in the method proposed by the contractor, whether accepted previously or not, at any stage of work, to obtain the desired accuracy, quantity and progress of the work which shall be binding on the contractor, and no claim on account of such change in method of execution will be entertained by corporation so long as specifications of the item remain unaltered.

### **PROGRESS SCHEDULE**

(b) The Contractor shall furnish within the period stipulated in writing by the Engineer-in-charge, of the order to start the work, a progress schedule in quadruplicate indicating the date of actual start, the monthly progress expected to be achieved and the anticipated completion date of each major item of work to be done by him, also indicating dates of procurement and setting up the materials, plant and machinery. The Schedule is to be such as is practicable of achievement towards the completion of the whole work in the time limit, the particular items, if any on the due dates specified in the contract and shall have the approval of the Engineer-in-Charge. No revised schedule shall be operative without such acceptance in writing. The Engineer is further empowered to ask for more detailed schedule or schedules say; week by week for any item or items, in case of urgency of work as will be directed by him and the contractor shall supply the same as and when asked for.

(c) The contractor shall furnish sufficient plant, equipment and labour as may be necessary to maintain the progress of schedule. The working and shift hours restricted to one shift a day for operations to be done under the corporation supervision shall be such as may be approved by the Engineer-in-charge. They shall not be varied without the prior approval of the Engineer. Night work which requires supervision shall not be permitted except when specifically allowed by Engineer each time, if requested by the contractor. The contractor shall provide necessary lighting arrangements etc. for night work as directed by Engineers without extra cost.

(d) Further, the contractor shall submit the progress report of work in prescribed forms charts etc. at periodical intervals, as may be specified by the Engineer-in-charge. Schedule shall be in forms of progress charts, forms, progress statement and /or reports as may be approved by the Engineer.

(e) The contractor shall maintain Performa, charts, details regarding machinery equipment, labour, materials, personnel etc. as may be specified by the Engineer and submit periodical returns thereof as may be specified by the Engineer-in-charge.

### **1.5 TREASURE – TROVE**

In the event of discovery by the contractor or his employees, during the progress of the work of any treasure, fossils, minerals or any other articles of value or interest, the contractor shall give immediate intimation thereof to the Engineer and forthwith hand over to the Engineer such treasure or things which shall be property of Corporation.

### **1.6 AGENT AND WORK ORDER BOOK**

The Contractor shall himself manage the work or engage an authorized all time agent on the work capable of managing and guiding the work and understanding the specifications and contract condition. A qualified and experienced, Engineer shall be provided by the contractor as his agent for technical matters in case the Engineer-in-charge considers this as essential for the work and so directs contracts. He will take orders as will be given by the Project Engineer or his representatives and shall be responsible for carrying them out. This agent shall not be changed without prior intimation to the Project Engineer and his representatives on the work site. The contractor shall supply to the Engineer

the details of all supervisory and other staff employed by the contractor and notify changes when made, and satisfy the unquestionable right to ask for change in the quality and numbers of contractor's supervisory staff and to order removal from work of any of such staff. The contractor shall comply with such orders and effect replacements to the satisfaction of the Engineer.

A work order book shall be maintained on site and it shall be the property of corporation and the Contractor shall promptly sign orders given therein by Project Engineer or his representative and his superior offices, and comply with them. The compliance shall be reported by the contractor to the Engineer in good time so that it can be checked. The blank work order book with machine numbered pages will be provided by the corporation free of charge for this purpose. The contractor will be allowed to copy out instructions therein from time to time.

#### **1.7 INITIAL MEASUREMENTS FOR RECORD :**

Where, for proper measurement of the work, it is necessary to have an initial set of levels or other measurement taken ,the same as recorded in the authorized field book or measurement book of corporation by the Engineer or his authorized representative will be signed by the contractor who will be entitled to have a true copy of the same made at his cost . Any failure on the part of the contractor to get such levels etc. recorded before starting the work will render him liable to accept the decision of the Engineer as to the basis of taking measurement. Like-wise the contractor will not cover any work which will render its subsequent measurements difficult or impossible without first getting the same jointly measured by himself and the authorized representative of the Project Engineer. The record of such measurements on the corporation side will be signed by the contractor and he will be entitled to have a true copy of the same made at his cost.

#### **1.8 HANDLING OVER THE WORK**

All the work and materials before finally taken over by Corporation will be entire liability of the Contractor for guarding, maintaining and making good any damages of any magnitude. Interim payments made for such work will not alter this position. The handling over by the contractor and taking over by the Project Engineer or his authorized representative will be always in writing, copies of which will go to the Project Engineer or his authorized representative and the contractor. It is, however understood that before taking over such work, Corporation will not put it into regular use as distinct from causal or incidental one, except as specifically mentioned elsewhere in this contract, or as mutually agreed to.

#### **1.9 ASSISTANCE IN PROCURING PRIORITIES, PERMITS ETC**

The Engineer, on a written request by the contractor, will if in his opinion, the request is reasonable and in the interest of work and its progress, assist the contractor in securing, the priorities for deliveries ,transport permits for controlled materials etc. where such are needed. The Corporation, will not, however be responsible for the non-availability of such facilities or delay in this behalf and no claims on account of such failures or delays shall be allowed by the Corporation. The Contractor shall have to make his own arrangement for machinery required for the work. However, such machinery conveniently available with the Corporation may be spared as the ruled in force on recovery of necessary Security Deposit and rent agreement in the prescribed form. Such an agreement shall be independent of this contract and the supply of machinery shall not form a ground for any claim or extension of time limit for this work.

## **1.10 SAMPLES AND TESTING OF MATERIALS**

(i) All materials to be used on work shall be got approved in advance from the Engineer-in-charge and shall pass the test and or analysis required by him, Contractor No. of Corrections Project Engineer which will be (a) as specified in the specification for the item concerned and or as specified by the Indian Road Congress Standard Specification (b) Code of Practice for Road and Bridges or (c) I.S.I. Specifications (Whichever and wherever applicable) or (d) such recognized Specifications accepted to Engineer-in-Charge as equivalent thereto or in absence of such recognized Specifications (e) such requirement test and or analysis as may be specified by the Engineer-in-Charge in order of precedence given above.

(ii) The contractor shall at his risk and cost make all arrangements and /or shall provide for all such facilities as the Engineer-in-charge may require for collecting preparing required number of samples for tests or for analysis at such item and to such places may be directed by the Engineer and bear all charges and cost of testing. Such samples shall also be deposited with the Engineer-in-Charge.

(iii) The contractor shall if and when required submit at his cost the samples of materials to be tested or analysis and if, so directed, shall not make use of or incorporate in the work any materials represented by the samples until the required tests or analysis have been made and the materials , finally accepted by the Engineer-in-charge.

(iv) The contractor shall not be eligible for any claim or compensation either arising out of any delay in the work or due to any corrective measures required to be taken on account of and as a result of testing of the materials.

(v) The contractor or his authorized representative will be allowed to remain present in the departmental laboratory while testing samples furnished by him. However, the results of all tests carried out in the departmental laboratory in the presence or absence of the contractor or his authorized representative will be binding on the contractor.

(vi) Cost of routine day to day quality control testing charges for tests required as per specifications will be borne by contractor by sending the same to the concerned laboratories or by establishing laboratory at site. However the cost of testing of materials as directed by Engineer-in-Charge for approving a particular material as laid down in Para 1.10(i) to (vi) will have to be borne by the contractor.

## **1.11 CO-ORDINATION :**

When several agencies for different sub work of the Project are to work simultaneously on the timely completion of the whole Project smoothly, the scheduled dated for completion specified in each contract shall therefore be strictly adhered to. Each contractor may make his independent arrangement for water, power, housing etc. if they so desired. On the other hand the contractor is at liberty to mutual agreement in this behalf and make joint arrangements with the approval of the Engineer. No single contractor shall take or cause to be taken any steps or action that may cause disruption discontent, or disturbance of work labour or arrangement etc. of other contractor in the Project localities. Any action by any contractor which the Engineer in his unquestioned discretion may consider as infringement of the above code would be considered as a breach of the contract conditions and shall be dealt with as such.

In case of any dispute, disagreement between the contractor, the Engineer's decision regarding the co-ordination, co-operation and facilities to be provided by any of the contractors shall be final and binding on the contractors concerned and such a decision or decisions shall not vitiate any contract nor absolve the contractor(s) of his/their obligations under the contract nor consider for the grant for any claim or compensation.

### **1.12 PAYMENT :**

The Contractor must understand that the rates quoted are for completed work and include all costs due to labour, scaffolding, machinery, power, royalties, octroi, taxes etc and should also include all expenses to cover the of night work if and when required and no claim for additional payment beyond the prices or rates quoted will be entertained. The mode of measurements has been indicated in the specifications, if there is any ambiguity or doubt in this respect the decision of Project Engineer will be final.

### **1.13 PATENTED DEVICE**

Whenever the contractor desires to use any designed devices, materials or process covered by the letter of patent or copy right, the right for such use shall be secured by suitable legal arrangement and agreement with patent owner and the copy of their agreement shall be filled with the Engineer-in-charge if so desired by the letter.

### **1.14 TEMPORARY QUARTERS :**

(i) The contractor shall at his own expense maintain sufficient experienced supervisory staff etc. required for the work and shall make his own arrangement, provide housing for them with all necessary arrangements, including fire preventive measures etc. as directed by the Engineer-in-charge.

(ii) The contractor shall provide, furnish, maintain and remove on completion of the work, a suitable office on the work site for the use of Project Engineer's representative. The covered area exclusive of verandah should not be less than 400 Sqft. It may have bamboo mating walls and asbestos or corrugated iron roof, paved floor should be 18" above ground level. He should provide a basket type latrine, urinals and keep them clean daily. This will be supposed to be included in his rate.

## **2.0 SAFETY MEASURES AND AMENITIES:**

### **2.1 SAFETY MEASURES :**

The contractor shall take all necessary precautions for the safety of the workers and preserving their health while working in such job as require special protection and precautions. The following are some of the requirements listed, though not exhaustive. The contractor shall also comply with the directions issued by the Engineer in this behalf from time to time and at all times.

(1) Providing protective foot wear to workers, in situations like mixing and placing of mortar of concrete in quarries and places where the work is under too much of wet conditions as also for movements over surfaces infected with oyster growth etc.

(2) Providing protective head wear to workers, working in quarries etc. to protect them against accidental fall of materials from above. To provide Reflective Jackets, Helments to site staff.

(3) Taking such normal precautions like providing hand rails at the edges of the floating platform or barges, not allowing nails or metal parts or useless timber to spread around etc.

(4) Supporting workman with proper belts, ropes etc. when working on any masters, cranes, grabs, hoist, dredgers etc.

(5) Taking necessary steps towards training the workers concerned in the use of machinery before, they are allowed to handle it independently and taking all necessary precautions in and around the areas where machines, hoists, and similar units are working.

(6) Providing adequate number of boats (of at all required for plying water) to prevent overload and over-crowding.

- (7) Providing life belts to all men working in such situation from where they may accidentally fell into the water equipping the boats with adequate number of life belts etc.
- (8) Avoiding bare lives-wires etc. as would electrocute workers.
- (9) Making all platforms, staging and temporary structures sufficiently strong so as not to cause inconvenience and risk to the workmen and supervisory staff.
- (10) Providing sufficient first aid trained staff and equipment to be available quickly at the work site to render immediate first aid treatment in case of accidents due to suffocation, drowning and other injuries.
- (11) Take all necessary precautions with regard to use of divers.
- 12) Providing full length gum boots , leather hand gloves with fire proof apron to cover the chest and back reaching upto knees and protective goggles for the laborers working with hot asphalt handling vibrator in cement concrete and also where use of any or all these items is beneficial in the interest of the health and well being of the laborers in the opinion of the Engineer .
- 13) Where the workers are required to work near machine and are liable to accident they should not be allowed to wear loose cloths like dhoti, zabba, etc.

## **2.2 EXPLOSIVES:**

The contractor shall at his own expense construct and maintain proper magazines, if such are required for the storage of explosives for use in connection with the works, and such magazine , being situated, constructed and maintained un accordance with government Rules applicable in that behalf. The contractor shall at his own expenses obtain such license or licenses as may be necessary for storing and using explosives. Notwithstanding that the location etc or storage of explosives are approved by the Engineer, the Corporation shall not be incurring any responsibility whatever in connection with storage and use of all operations in or for which explosives are employed being at the risk of the contractor and upon his sole responsibility and the Contractor hereby gives to Corporation an absolute indemnity in respect

## **2.3 DAMAGE BY FLOODS OR ACCIDENTS:**

The contractor shall take all precautions against damage by floods or like or from accident etc.no compensation will be allowed to the contractor on this account or for correcting and repairing ant such damage to the work during construction. The contractor shall be liable to make good at his cost any plant or material belonging to the Corporation, lost or damaged by floods or from any other cause which is in his charge.

## **2.4 RELATION WITH PUBLIC AUTHORITIES:**

The Contractor shall comply with all rules, regulations, bye-laws and direction given from time to time also by any local public authority in connection with this work and shall himself pay fees or charges which are leviable on him without any extra cost to the Department.

## **2.5 POLICE PROTECTION:**

For the Special Protection of camp the contractor's works, the Department will help the contractor as far as possible to arrange for such protections with the concerned authorities if so required by the Contractor in writing. The full cost of such protection shall be borne by the Contractor.

## **2.6 INDEMNITY:**

The Contractor shall indemnify the corporation against all actions, suits, claims and demands brought or made against him in respect of anything done or committed to be done by the Contractor on



execution of or in connection with this contract and against any loss or damage to the corporation in consequence of any action or suit being brought against the Contractor for anything done or committed to be done in the execution of this contract.

## **2.7 MEDICAL AND SANITARY ARRANGEMENTS TO BE PROVIDED FOR LABOUR**

### **EMPLOYED IN THE CONSTRUCTION BY THE CONTRACTOR:**

(a) The Contractor shall provide an adequate supply of potable water for use of labourers on work and in Camps.

(b) The contractor shall construct trench or semi permanent latrines for the use of the laborers. Separate latrines shall be provided for men and women.

(c) The Contractor shall build sufficient number of huts on a suitable plot of land for use of the laborers according to the following specifications.

1) Huts of bamboo and tin sheets may be constructed.

2) A good site not liable to submergence shall be selected on high ground remote from jungle but well provided with trees, shall be chosen wherever it is available. The neighborhood of tank, jungle, grass or woods should be particularly avoided. Camps should not be established close to large cuttings of earthwork.

3) The lines of huts shall have open spaces of at least ten meters between rows. When a good natural site cannot be procured, particular attention should be given to the drainage.

4) There should be no overcrowding. Floor space at the rate of 30 sq.ft.per head shall be provided. Care should be taken to see that the huts are kept clean and in good order.

5) The contractor must find his own land and if he wants Corporation Land, he should apply for it and pay assessment for it , if made available by Corporation.

6) The Contractor shall construct a sufficient number of bathing places. Washing places should also be provided for the purpose of washing clothes.

7) The Contractor shall make sufficient arrangements for draining away the surface and sullage water as well as water from the bathing and washing places and shall dispose off the wastewater in such a way as not to cause any nuisance.

d) The Contractor shall engage a medical officer with a traveling dispensary for a camp containing 500 or more persons if there is no government or other private dispensary situated within 8kms from the camp. In case of emergency the contractor shall arrange at his cost for transport for quick medical help to his sick worker.

e) The Contractor shall provide the necessary staff for effecting a satisfactory drainage system and cleanliness of the camp to the satisfaction of the Engineer. At least one sweeper per 200 persons should be engaged.

f) The Assistant Director of Public Health shall be consulted before opening a labour camp and his instruction on matters such as water supply, sanitary conveniences, the camp site accommodation and food supply shall be followed the Contractor.

g) The Contractor shall make arrangements for all anti-malaria measures to be provided for the labour employed on the work. The anti-malaria measure shall be provided as directed by the Assistant Director of Public Health.

### **3. QUARRIES:**

**3.1** The quarrying operations if required and permitted by the Engineer-in-charge shall be carried out by the contractor with proper equipment such as Compressors, jack hammers, Drill bits, Explosives etc. and sufficient number of workmen shall be employed so as to get the required out-turn.

**3.2** The Contractor shall carry out the works in quarries conformity with all the rules and regulations already laid down or may be laid down from time to time by Corporation due to non-compliance of any rules or regulations or due to damages by the contractor shall be the responsibility of the contractor. The Engineer-in-charge or his representative shall be given full facilities by the contractor for inspection at all times of the working of the quarry, records maintained, the stocks of the explosives and detonators etc, so as to enable him to check that the working records and storage are all in accordance with the relevant rule. The Engineer-in-charge or his representative shall at any time be allowed to inspect the works, buildings and equipment at the quarters.

**3.3** The Contractor shall maintain at his own cost, the books, registers etc, required to be maintained under the relevant rules and regulations and as directed by the Engineer-incharge. These books shall be open for inspection at times by the Engineer-in-charge or his representative and the contractor shall furnish the copies or extracts of books or register as and when required.

**3.4** All quarrying operations shall be carried out by the contractor in organized and expeditious manner, systematically and with proper planning. The contractor shall engage licensed blaster and adopt electric blasting and/or any other approved method which would ensure complete safety to all men engaged in the quarry and its surroundings. The contractor shall himself provide suitable magazines and arrange to procure and store explosives, etc as required under the rules at his own cost the designs and the locations of the magazine shall be got approved in advance from the Chief Inspector of Explosives and the rules and regulations in this connection as laid down by the Chief Inspector of Explosives from time to time shall be strictly adhered to by the Contractor. It is generally experienced that it takes time to obtain the necessary license for blasting storage of material from the concerned authorities. The contractor must therefore take timely advance action for procuring all such licenses so that the work progress may not be hampered.

**3.5** The approaches to the quarrying place from the existing public roads shall have to be arranged by the contractor at his own cost, and the approaches shall be maintained by the contractor at his own cost till the work is over.

**3.6** The quarrying operations shall be carried out by the contractor to the entire satisfaction of the Engineer-in-charge and the development of the quarry shall be made efficiently so as to avoid wastage of stones. Only such stones as are of the required quality shall be used on the work. Any stone which is in the opinion of the Engineer-in-Charge, not in accordance with the specifications or of required quality will be rejected at any time, at the quarry or at the site of work. The rejected stones shall not be used on the work and such rejected materials shall be removed to the place shown at the contractor's cost.

**3.7** Since all stones quarried from Government quarry (if made available) by the contractor including the excavated overburden are the property of the government, no stones or earth shall be supplied by the contractor to any other agencies or works, and are not allowed to be taken away for any other works all such surplus quarried materials not required for work under this contract shall be the property of the Government and shall be handed over by the contractor to Government free of cost at quarry site

duly heaped at the spots indicated by the engineer-in-charge. The contractor will be entitled to the refund of the royalty if any paid by him for such quantity handed over to Government for which necessary certificate will be issued by Project Engineer as per usual procedure. If however, the Government does not require such surplus material, the contractor may be allowed to dispose off or use material elsewhere with prior written permission of Engineer-in-Charge. Leaving off a quarry face or opening of a new quarry face shall be done only on the approval of the Engineer-in-charge.

**3.8** Quarrying permission will have to directly obtained by the contractor, from the Collector of the district concerned for which purpose the Corporation will render necessary assistance. All quarry fees, Royalty charges, octroi duties, ground rent for staking material, etc. if any two be paid, shall be paid directly by the contractor as per rules in force. The contractor will however be Entitled to a refund of part of such charges as are admissible under rules as mentioned elsewhere in this contract , after obtaining a certificate from the Engineer-incharge that the material where required for use on government works .

**3.9** The contractor will be permitted to erect at his own risk and cost at the quarry site if suitable vacant space in government area is available for the purpose, his own structures for stores, offices, etc at place approved by the Engineer-in-charge. On completion of the work, the contractor shall remove all the structures erected by him and restore the site top its original condition.

**3.10** The contractor shall not use any land in the quarry either for cultivation or for any other purpose except that required for breaking or stacking or transporting stones.

#### **4.0 DEFINITIONS:**

Deleted

#### **5.0 TRAFFIC REGULATION**

**5.1** Unless separately provided for in the contract, the contractor shall have to make all necessary arrangement for regulating traffic, day to night during the period of construction to the entire satisfaction of the Engineer. This includes the construction and maintenance of diversions if necessary. The contractor shall have to provide necessary caution boards, barricades, flags, lights and watchmen etc so as to comply with the latest Motor Vehicles rules and regulations and for traffic safety and he shall be responsible for all claims from accidents which may arise due to his negligence whether in regulating the traffic or in stacking material on the roads or due to any other reasons.

**5.2** It is to be clearly understood that whatever work carried by the contractor for construction of diversion road including earthwork, W.B.M, bituminous surface dressing, R.C.C. pipe drains etc will be paid for only once. If due to the flow of traffic, due to floods or due to any other cause, this diversion road and/or the R.C.C drain gets damaged, it shall be repaired and maintained by the contractor in good condition till completion of the whole work at his expenses.

**5.3** The contractors have to make own arrangement for temporary acquisition of land if required for diversion.

#### **6.0 LEVELLING INSTRUMENTS:**

If measurements of items of the work are based on volumetric measurements calculated from levels taken before and after construction of the item, a large number of leveling staves, tapes etc will have to

be kept available by the contractor at the site of work for this purpose. Lack of such leveling staves, tapes, etc in required numbers may cause delay in measurements and the work. The contractor will have therefore to keep sufficient number of these readily available at site.

## **7.0 CEMENT CONCRETE:**

(a) Cement content for M 40 grade concrete shall be between 400 to 425 Kg/cum. The contractors shall carry out all preliminary tests to work out grading and proportioning of aggregates in order to obtain and maintain uniform quality of work. The contractor shall supply all materials; labour and testing cost of preparing and testing samples as required by the Engineer. Unless otherwise specified in the detailed item wise specifications 6 cubes 6" X 6" X 6" (15 cm X 15 cm X 15 cm) for testing compressive strength and 6 beams moulds of size 15cm X 12 cm X 70 cm for testing of flexural strength, at his cost. The cubes and beam moulds shall be tested at approved laboratory and the test results shall not fall below those prescribed in P.W.D Handbook (Table CV P.412) or as laid down in the specifications. The cost such cubes and tests shall be entirely borne by the contractor. MIX Design shall be done as per IRC 44 2008 and got approved from Engineer in Charge.

(b) All concrete shall be controlled and machine mixed, unless otherwise directed by Engineer-in-Charge for controlled or high grade concrete, the grading of aggregates shall be got approved from the Engineer. The correct proportions and the total amount of water for the mix will be determined by means of preliminary tests and shall be got approved by the Engineer, However such approval does not relieve the contractor from his responsibility, regarding the minimum works strength requirement. Works tests shall be taken in accordance with relevant codes and specifications. The minimum cement content shall be in accordance with I.S. 456-1978. All proportioning of aggregates shall be done by weight if so ordered by the Engineer.

(c) All mixing shall be done by mechanical means in approved mixers. The Engineer may at his discretion, allow in writing hand mixing of concrete for minor items where small quantities are involved but in case the contractor shall increase the cement content of the mixture by 10 % without any extra cost.

(d) The form work used shall be made preferably of steel or with lining of steel. Wooden shutters may be allowed at the discretion of the Engineer. E.g. lintels, small slabs and beams, coping etc.

(e) The concrete shall be mechanically vibrated for proper compaction by the method approved by the Engineer.

(f) The concrete shall be cured only by sweet potable water for full 21 days after the time of the period specified in the detailed specifications or as may be directed by Engineer-in-Charge.

## **8.1 REINFORCED CONCRETE WORK:**

a) The work included in this contract shall be carried out in addition to this specification detailed herein, in accordance with specifications and regulations as laid down in the following standard Specifications. The Contractor shall submit the mix design for M40 grade concrete and get approved from Engineer in Charge prior to starting the PQC work.

Standard Specifications published by Government of Maharashtra 1985 Edition. I.S. 269 : 1958 Specification for ordinary rapid hardening and low heat Portland cement (Revised) I.S. 363 : 1963 Specification for coarse and fine aggregate from natural sources for concrete. I.S. 456: 1978 Code of practice for Plain and Reinforced Concrete. If the standard specifications quoted above fall short for the items quoted in the schedules of this contract, reference shall be made to the latest British standard

specifications. If any of the items of contract do not fall in reference quoted above, the decision and specifications of the Engineer shall be final.

### **8.3 ADDITIONAL GENERAL SPECIFICATION FOR 1:2:4 ORDINARY CEMENT**

#### **CONCRETE**

1. If the concrete strength falls below that specified for the items and if the use can be permitted under clauses 303.3.7 of the IRC Bridge Code Section Part III given below , the unit (Bridge component ) may be accepted at discretion of the CEO BSCDCL concerned as a substandard work at a suitable reduced rate . Reduced rate will be determined by the Project Engineer concerned according to circumstances of the case and the concerned CEO BSCDCLs approval to the reduced rate as mentioned above, he has to replace the concrete at his own cost with all consequent losses and damages "Standard Specification and Code of Practice" for road bridges section III Cement concrete 303.3.7 standard of acceptance.

- i) Full payment shall be made when 75 % of the test cube results are equal and above specified strength. Case falling outside the above limits should be examined and decided by Engineer-in-charge on merits of each case.
- ii) The test specimen should be taken by representative of the contractor in presence of a responsible officer of the rank of not lower than an Assistant Engineer or Additional Engineer.
- iii) The test specimen should form carefully and no claim shall be entertained later on the ground that the casting of the test specimen were faulty and that the results of the test specimen did not give correct indication of the actual quality of the concrete.
- iv) The minimum quantity of cement per 100 cu.ft of M 160 and above concrete should be 16.00 cement bags as per Standard Specification.
- v) Payment (a) The payment of such concrete work will not be made till the strengths are ascertained.
- vi) The payment of reinforcement of such affected items will not be made till the strength of the concrete are ascertained.

#### **9 COLLECTION OF MATERIALS:**

(i) Where suitable and approved PW Department's quarries exist, the contractor or piece worker will be allowed if otherwise there is no objection to obtain the materials to the extent required for the work from the quarry. Her will be however liable to pay compensation, if any damage is caused to the quarry either deliberately or through negligence or for wastage of material by himself or his staff or refund according to rules, if admissible and shall submit detailed accounts of materials from quarries as directed.

(ii) Where no suitable PW Department's quarries exist or when the quality of material required cannot be obtained from PW Department quarry, the contractor or piece worker shall make his own arrangements to obtain the material from existing or new quarry in Government waste land, private land or land belonging to other states or talukas, etc. After opening the quarry, but before starting collection, the quarry shall be got approved by the Engineer-in-charge or his representatives. The Contractor or piece worker shall pay all royalty charges, compensation etc. No claims or responsibility on account of any obstruction caused to execution of the work by difficulties arising out of private owners of land will be entertained.

(iii) The rates in the tender include all incidental charges such as opening of a new quarry, opening out a new portion in an existing quarry, removing top soil and the suitable material, dewatering a quarry, cost of blasting powder and fuse, lift, lead, repairs to existing cart tracks, making new cart tracks, control charges, Central or State Governments or Municipal Taxes, Local Board Cess etc

(iv) The rates in the tender are for the delivery of the approved material on road site, properly stacked at the places specified by the Engineer-in-charge and are inclusive of conveyance charges in respect of the leads and lifts. No claims on account of changes in leads will be entertained.

(v) No material shall be removed from the land within the road boundary or from the land touching it without the written permission of the Engineer-in-charge or his authorized agent. If any material is unauthorisedly obtained from such places, the Contractor or piece worker shall have to make good the damages and pay such compensation, in addition as may be decided by the Project Engineer and will have to stop further collection.

(vi) Any material that falls on any PWD road from the cart etc during conveyance shall be immediately picked up and removed by the contractor or piece worker, failing which, it will be got removed departmentally at his cost. No heap shall be left prior to stacking even temporarily on the road surface or in any way so as to cause any obstruction or danger to the traffic. The Contractor or the piece worker shall be liable to pay for any claims or compensation etc arising out of any accident, etc. Any such materials causing obstruction or danger etc will be got removed departmentally at his cost and no claims for any loss or damage to the material, this removed will be entertained. The Contractor shall also be responsible for the damage or accident etc arising out of any material that falls on the road or track, not in charge of the Department and shall attend to any complaints which may be received.

(vii) The materials shall not be stacked in place where it is liable to be damaged or lost due to traffic passing over it to be washed away by rains or floods, to be buried under the landslide etc or the slip down an embankment or hill side etc. No claims for any loss due to these and similar causes will be entertained.

(viii) Before stacking, the materials shall be free from all earth, rubbish vegetable matter and other extraneous substances and in the case of metal, screened to gauge. If so directed when ready, it shall be stacked entirely clear of the roadway, on ground which has been cleaned of vegetation and leveled. On high banks, ghat roads etc, where it may be practicable to stack it entirely clear of the roadway, it may be stacked with the permission of the Engineer-in-charge on terms in such as way as to cause minimum danger and obstruction to the traffic or as may be directed by him.

(ix) The size of the stacks or materials other than rubble shall be 3.00 X 1.50 X 0.60 m of such other size as may be directed by the Engineer-in-charge and all but one stack in furlong shall be of the same uniform size and shall be uniformly distributed over whole lengths. One stack (at the end) in each furlong may be of length different in order to adjust total quantity to be required, but its width and height will be the same as those of the rest.

(x) The Additional Engineer shall supply the Contractor with statement showing furlong wise quantities that will be required and the order in which the collection is to be done. No materials in excess of requirement in that furlong shall be stacked. Any excess quantity shall be removed at the expense of the Contractor or piece worker to where it is required before the material in that furlong is finally measured.

(xi) In stacking materials, deposition shall commence at the end of the mile farthest from the quarry and be carried continuously to the other end (unless otherwise directed by the Project Engineer). Stacking in one furlong shall be completed before it is started in another unless directed otherwise in writing by the Project Engineer. Measurements of the materials stacked in a furlong will not be recorded until the

full quantity required has been stacked unless otherwise authorized by Engineer in writing. Collecting and spreading shall not be carried out at the same time in one and the same mile or in two adjoining miles except with the written permission of the Project Engineer.

(xii) Unless otherwise directed, the material shall be collected in the following order according to the availability of space: (1) Rubble (if included in tender), (2) Metal (3)

Soft murrum and (4) Hard murrum. Hard murrum shall be stacked on the site opposite to that on which soft murrum has been stacked. Similarly, metal collected for petty repairs shall be stacked on the side opposite to metal for new layer. Where metal for two layers has to be stacked, as in the case of new roads, the metal for each layer shall be stacked on the opposite sides of the road.

(xiii) All road material shall be examined and measured before it is spread. The labour for measurements (and check measurements wherever carried out) shall be supplied by the Contractor or piece worker. Immediately after the measurement are recorded, the stack shall be marked by the Contractor or the piece worker by white wash or otherwise may be directed by the Project Engineer to prevent from any possibility of the same material being measured and recorded over again and to, prevent any unauthorized tampering with the stacks. If the Contractor or the piece worker fails to attend the measurements of materials after receiving the notice from the Additional Engineer, or his subordinate, stating date and time of the intention to measure the work, shall be measured nevertheless and no complaint in this respect will be entertained later on. If the Contractor or piece worker fails to supply sufficient labour or the materials required at the Time of measurements or check measurements after due notice has been given to him, the expenses incurred on account of employing Departmental labour or material etc shall be charged against his account.

(xiv) No deduction will made for voids.

## **10.0 MISCELLANEOUS**

10.1 Rate shall be inclusive of all type of taxes and GST.

10.2 For providing electric wiring or water lines etc recesses shall be provided if necessary through walls, slabs, beams etc and later on refilled up with bricks or stone chippings, cement mortar without any extra cost.

10.3 In case it becomes necessary for the due fulfillment of Contract for the Contractor to occupy land outside the Department limits, the Contractor will have to make his own arrangement with the land owners and to pay such rents if any are payable as mutually agreed between them. The Department will afford the Contractor all the reasonable assistance to enable him to obtain Corporation land for such purpose on usual terms and conditions as per the rules of the Corporation.

10.4 Special provision in detailed specifications or wording of any item shall gain precedence over corresponding contradictory provision (if any) in the Standard Specifications or PWD Hand Book, where reference to such specifications is given without reproducing the details in Contract.

10.5 Suitable separating barricades and enclosures shall be provided to separate material brought by the Contractor and material issued by Government to the Contractor under Schedule "A". Same applies for the material obtained from different sources of supply.

10.6 It is presumed that the Contractor has gone carefully through the Standard Specifications of PWD Hand Books and the Schedule of Rate of the Division and studied the site conditions before arriving at rates quoted by him. Decision of the Engineer-in-charge shall be final as regards interpretation of specifications.

10.7 The stacking and storage of construction material at site shall be in such a manner as to prevent deterioration or intrusion of foreign matter and to ensure the preservation of their quality, properties and

fitness for the work. Suitable precautions shall be taken by the Contractor to protect the material against atmospheric action, fire and other hazards. The materials likely to be carried away by wind shall be stored in suitable stores or with suitable barricades and where there is likelihood of subsidence of soil, such heavy material shall be stored on approved platforms.

10.8 For Roads and Bridge works, the Contractor shall in addition to the Specifications cited here, comply with the requirements of relevant IRC Code Practice, latest edition of MORTH Specifications.

10.9 The Contractor shall be responsible for making good the damages done to the existing Property during construction by his men.

10.10 If it is found necessary from safety point of view to test any part of the structure, the test shall be carried out by the Contractor with the help of the Department at this worn cost.

10.11 The Contractor shall provide, maintain, furnish and remove on completion temporary shed for office on work site for the use of Project Engineer's representative.

10.12 Defective work is liable to be rejected at any stage. The Contractor, on no account can refuse to rectify the defects merely on reasons that further work has been carried out. No extra payment shall be made for rectification.

10.13 In the Schedule B, the work has been divided into sections but notwithstanding this, every part of it shall be deemed supplementary to and complimentary of every other part.

10.14 General directions or detailed description of work, materials and items coverage of rates given in the specification are not necessarily repeated in the Bill of Quantities. Reference is, however, drawn to the appropriate section clause (s) of the General Specifications in accordance with which the work is to be carried out.

10.15 In the absence of specific directions to the contrary, the rates and prices inserted in the items are to be considered as the full inclusive rates and prices for the finished work described there under and are to cover all labour, materials, wastage, temporary work, plant overhead charges and profits, as well as the general liabilities, obligations and risk arising out of the General Conditions of the Contract.

10.16 The quantities set down against the items in the Schedule B are only estimated quantities of each kind of work included in the Contract and are not to be taken as a guarantee that the quantities scheduled will be carried out or required or that they will not be exceeded.

10.17 All measurements will be made in accordance with the methods indicated in the specifications and read in conjunction with the General Conditions of Contract.

10.18 The details shown on drawings and all other information pertaining to the work shall be treated as indicative and provisional only and are liable to variation as found necessary while preparing working drawing which will be supplied by the Government during execution. The Contractor shall not, on account of such variation be entitled to any increase over the ones quoted in the tender which are on quantity basis.

10.19 The recoveries if any from the Contractor will be affected as arrears of land revenue through the Collector of the District.

10.20 Clause 101 to 107 of Specifications of Road and Bridge Works adhered herewith will be applicable to works as per Schedule B unless specified otherwise in the detailed specifications of the relevant items.

10.21 All materials used in the construction shall conform to the requirement of Specification Clause under Section – 1000 "Materials for Structures" of Specifications of Road and Bridge Works, MORTH New Delhi, attached to the tender.

10.22 Protection of underground telephone cables and aerial telephone wires and poles, transmission towers, electrical cables, and water supplying lines. During the execution of work, it is likely that the Contractor may meet with telephone cable, electrical cables, supply lines, etc. It will therefore be the



responsibility of the Contractor to protect them carefully. All such cases should be brought to the notice of the Engineer-in-charge by the Contractor and also the concerned Department. Any damage whatsoever done to these cables and pipelines by the Contractor shall be made good by him at his cost.

#### **11.0 LINING OUT:**

The Contractor shall provide free of charge all labour and material required for lining out, surveying, inspection decided by the Engineer as considered necessary for the proper and systematic execution of work. The Department will only show the changed points on the alignment of the road and it will be the responsibility of the Contractor to correctly align the road straight between points including setting out curves, though the Department will render necessary assistance. Likewise, only one Bench Mark with definite value of R.L. will be shown to Contractor who shall have to provide for network of temporary Bench Mark all along the road and near C D Works for executing the work. The Contractor shall be responsible for the provision, accuracy and the maintenance of such temporary Bench Mark. He shall be responsible for the correctness of the position, levels dimensions and alignment of all parts of the works and provision of necessary instruments and labour in connection with it, suitable pointed bamboos or wooden stakes shall be provided at his cost and firmly fixed at every 50 m on both sides of embankment to indicated final as well as intermediate heights of the embankments. Any errors in position, levels, dimensions and alignment shall be rectified by Contractor at his expenses.

If such error is due to incorrect data supplied in writing by the Engineer or his authorized representative, the cost of rectification shall be borne by Corporation. The checking or inspection of any setting out of any line or level or works by Engineer or his representative shall not in any way relieve the Contractor of his responsibility or correctness thereof. The Contractor shall carefully protect and preserve all Bench Marks, Site Rails, Pegs and stones etc used in setting out the work. Marking out the centerlines of C D Works, necessary approaches, etc shall be done by the Contractor at his own cost as directed by the Engineer.

#### **ADDITIONAL SPECIAL CONDITIONS**

1 The Concrete Work for the works under this tender shall be carried out from Batch Type Ready Mix Concrete Plant only. The tenderer should produce required documentation about ownership of Batch Type RMC Plant in Envelope No I.

2 Plant calibration shall be valid for one year subject to the consistent supply of metal. Cost of calibration shall be borne by the contractor. Whenever required by the BSCDCL, recalibration of the plant shall be done by the contractor at his own cost.

3 The Contractor shall maintain and update all the project work and work process related information online in website format at a location specified by the Municipal Corporation. The Contractor shall be responsible for updating of all project related information on the website daily with due authentication from Engineer-in-Charge with time lag specified by Engineer in Charge. The cost of developing the website and hosting the data on the website shall be borne by the Contractor. No extra payment for the development of website or data uploading shall be made.

4 Applicants should make available the equipments & machinery whenever required and should attach register hire lease document or indemnity bond from either party on Rs 100/- stamp paper duly notarised as an documentary proof and attach the same with envelope no.1.

5 The Contractor shall submit the **Request for Inspection (RFI)** to the Engineer-in- Charge and Consultants one day in advance before starting of any Hot mix related work. In no case shall the Hot mix work be started without submitting the RFI one day before the activity and without the prior approval of Engineer-in-Charge and Consultants. The Contractor shall submit the previous day's Progress on the following day by 11.00 am positively in the standard prescribed format approved by Engineer-in-Charge.

6 The Contractor shall submit the regular printouts from the Batch Mix plant and RMC Plant indicating the following details for each batch;

- i. Date, time and location.
- ii. Weight of batch and individual aggregate fractions and Cement with filler.
- iii. Water Cement Ratio of the batch

8. The road roughness for all the project roads shall be measured in accordance to IRC SP 16 –2004. The Contractor shall arrange for and bear the cost of roughness testing of the completed roads. The minimum roughness allowable for the various surfaces measured in accordance to the above specifications is as follows.

- i. Bituminous Concrete wearing surface – less than 2000 mm/ Km
- ii. PQC (Concrete Pavement) Surface – less than 2200 mm/ Km

The Contractor shall arrange for necessary testing equipment and conduct the testing in consultation with Project Management Consultant and BSCDCL Engineers before commencement of work and after completion of wearing course. **If it is found that the Roughness Index of the BT/ PQC surface is outside the permissible limits then deduction in the BT/ PQC payment shall be enforced as per the directives of CEO BSCDCL, Roads.**At least 10% tests for the work must be performed in Third Party Laboratory approved by BSCDCL and the cost such tests shall be borne by Contractor.

9 In case of non-conformance to the quality control checks in accordance to the quality assurance plan for Concrete related works, no payment shall be made to Contractor for non-conformance of work.

10 It is evident that there shall be live utilities under the road. The contractor shall repair and restore damaged utility lines viz. telephone, electricity, OFC, water line, drainage line etc if damaged during the execution of work. No separate payment shall be made to the contractor for utility repair.

11 Every Bidder must have well equipped laboratory set up as described in NIT at plant site and mobile lab at every work site.

12 The source of material viz.the quarries shall be approved by BSCDCL or consultant appointed by BSCDCL.

13 The works shall be primarily carried out in day time only. Except the prior permission of development engineer (Road) to carry out the same at night time.

14 The longitudinal and cross sectional of work be taken along with the photographs before starting and after satisfactory completion of the work along with identification of all the main hole covers of existing services and steel / cement concrete grating storm water drains etc.

15 The original invoice of bitumen of manufactures shall be submitted to the department along with the test certificate of the manufactures and the bitumen be tested at plant site before it is put in to use.

**16 It will be sole responsibility of bidder to provide for sufficient traffic wardens and barricades during the entire project duration and make sure that there is sufficient space for safe movement of pedestrians and vehicles during the construction operations.**

17 Contractor must carry out survey of road using Total Station before commencing the first layer of resurfacing work in presence of BSCDCL engineer. The levels should be taken at longitudinal interval of 10 m cross sectional interval ( depending on the road width 2.00m to 5.00 m ) submit the detail cross section to department for cross check. This same procedure of levels will be applied after each layer of bitumen mix. Cores will have to be taken for each layer at the rate of one core per 250 Sqm in presence of BSCDCL Engineer / Consultant / Third Party Quality Assurance Agency.

18 The contractor shall also provide complete Videographing of the road before work commencement and during submission of each RA Bill along with chiangewisecoloured photographs in Hard Copy and Soft copy.

### **GENERAL TECHNICAL SPECIFICATIONS**

1. The General Technical Specifications comprise the "Specification for Road and Bridge Works" (Fifth Revision) issued by the Ministry of Road Transport and Highways (MORT&H), Government of India and published by the Indian Road Congress, New Delhi and for items not covered by these specification Standard Specifications of UADD deemed to be bound into this document, unless and otherwise specifically relaxed wholly or partly through a special clause in the contract document. & relevant BIS codes of practice.

#### 1.1 Abbreviations Used

- a) LM / Lm / RMT/Rgm = Linear Meter / Running Meter
- b) Cum. = Cubic Meter
- c) Sqm. = Square Meter
- d) Cum /cc = Cubic Centimeter
- e) No. = Numbers
- f) MT / Tonne = Metric Tonne
- g) Hr = Hours
- h) Ha = Hector
- i) MoRT&H = Ministry of Road Transport & Highways
- j) IRC = Indian Roads Congress
- k) BIS = Indian Standards.

### **2. MISCELLANEOUS :**

2.1 Rate shall be inclusive of all type of taxes and GST.

2.2 The special provision in detailed specifications or wording of any item shall gain precedence over corresponding contradictory provision (if any) in the standard specifications or P.W.D. Hand Book where reference to such specifications is given without re-producing the details in contract.

2.3 It is presumed that the Contractor has gone carefully through MORTH Specification & P.W.D. Hand Book and the Schedule of Rates of the Division and studied the site conditions before arriving at rates quoted by him. Decision of the Engineer-in-charge shall be final as regards interpretation of specifications.

2.4 Stacking and storage of construction material at site shall be in such a manner as to prevent deterioration or intrusion of foreign matter and to ensure the preservation of their quality, properties and

fitness for the work. Suitable precautions shall be taken by the Contractor to protect the material against atmospheric actions, fire and other hazards. The materials likely to be carried away by wind shall be stored in suitable stores or with suitable barricades and where there is likely-hood of subsidence of soil, such heavy materials shall be stored on approved platforms.

2.5 For road and grade separator works the contractor shall in addition to the specifications cited here, comply with requirements of relevant I.R.C. Code Practice. Latest edition of MORTH specification and BIS codes shall be applicable for this work.

2.6 The contractor shall be responsible for making good the damages done to the existing property during construction by his men.

2.7 If it is found necessary from safety point of view to test any part of the structure, the test shall be carried out by the contractor with the help of the Department at his own cost.

2.8 The contractor shall provide, maintain, furnish and remove on completion, temporary shed for office on work site for the use of Project Engineer's representative.

2.9 Defective work is liable to be rejected at any stage. The contractor on no account can refuse to rectify the defects merely on reasons that further work has been carried out. No payment shall be made for rectification.

2.10 General directions or detailed description of work, materials and all coverage of rates given in the specification are not necessary repeated in the Bill of Quantities. Reference is however, drawn to appropriate section clause(s) of the General specifications accordance with which the work is to be carried out.

2.11 In the absence of specific directions to the contrary, the rates and prices inserted in the terms are to be considered as the full inclusive rates and prices for the finished work described there-under and are cover all labour, materials, wastage, temporary work, plant overhead charges and profiles, as well as the general liabilities, obligations and risks arising out of the General Conditions of Contract.

2.12 The quantities set down against the item in the Schedule 'B' are only estimated quantities of each kind of work included in the Contract and are not to be taken as a guarantee that the quantities schedule will be carried out or required or that they will not be exceeded.

2.13 All measurements will be made in accordance with the methods indicated in the specification and read in conjunction with the General Conditions of Contract.

2.14 The details shown on drawings and all other information pertaining to the work shall be treated as indicative and provisional only and are liable to variation as found necessary while preparing working drawing which will be supplied by the BSCDCL during execution. The contractor shall not, on account of such variation be entitled to any increase over the ones quoted in the tender which are on quantity basis. The contractor has to make his own investigation before quoting for the work.

2.15 The recoveries if any from contractor will be affected as arrears of land revenue through the Collector of the District.

2.16 Clause 101 to 107 of Specifications of Road and Bridge works adhered herewith will be applicable to works as per Schedule 'B' unless specified otherwise in the detailed specifications of the relevant items.

2.17 All materials used in the construction shall conform to the requirement of Specification Clause under Section-100 "Materials for Structures" of Specification of Road and Bridge Works MORTH New Delhi.

2.18 Protection of underground telephone cable and aerial telephone wires and poles, transmission towers, electrical cables and water supplying lines. During the execution of work, it is likely that the contractor may meet with telephone cable, electrical cables, water supply lines etc. it will therefore be

the responsibility of the Contractor to protect them carefully. All such cases should be brought to the notice of the Engineer-in-charge by the contractor and also to the concerned department. Any damage whatsoever done to these cables and pipe lines by the contractor shall be made good by him at his cost.

### **3. Order of precedence, clarifications and interpretations:**

When various specifications and codes referred to in presiding portion are at variance with each other following order of precedence will generally be accepted.

- i) Special conditions of contract, Item wise specifications, revised specifications if provided and execution drawing notes etc.
- ii) MoRT&H Specifications (Specifications for Roads & Bridge work)
- iii) I.S. Codes of practice.
- iv) Standard specification 1979 PWD Govt. of Maharashtra.

In case of items for which specifications are not available in the above mentioned specifications good sound engineering practice shall be followed and in such case specifications given by the employer consultants shall be final & binding on the contractor.

### **4. Specifications for materials :**

All material to be used in work shall satisfy provision of relevant specifications of Road and Bridge.

### **5. Method of MEASUREMENT:**

The method of measurement and payment shall be as described under various items and bill of quantity where specific definitions are not given, the method described in MoRT&H Specification will be followed.

6. All works shall be carried out in line & level as shown on execution drawing and as directed by Engineer.

### **7. Clearance of SITE:**

The work of site clearance before & after completion of work shall be as per Section 200 of MoRT&H specifications. Contractor shall visit the site before submitting his offer and assess the quantum of work for clearing the site before execution, during execution & after completion of work.

Mode of measurement & payment for this item is on lump sum basis and include all type of site clearance as required by the Engineer, and include cost of labour material, T & P.

### **8. Excavation for ROAD:**

8.1 As per the respective BOQ items & their specifications mentioned. Contractor shall note that the water table may be at higher level which will necessitate the dewatering. Dewatering and removal of water is incidental to item of work. No separate payment for dewatering etc. will be made by BSCDCL.

#### **8.2 Setting Out :**

After site is cleared and leveled, alignment & location shall be mark and excavation limit shall be set out true to lines and section as shown on working drawings. The contractor shall provide all labour, survey instrument i.e. Total station and materials required for setting out.

#### **8.3 Disposal of excavated material :**

All excavated material shall be used in work as directed. Usable surplus material shall be stacked properly as directly. Unusable excavated material shall be disposed of by the contractor as specified & directed by the Engineer.

#### 8.4 Measurement :

Excavation work shall be measured for depth below existing road / ground level. Measurement shall generally confirm to MoRT&H Specification Section –300 Clause 304.40. Each change of strata shall be got certified by the Engineer in charge. Measurement for excavation shall be as required for the exact width length and depth as shown on the drawing or as directed by the Engineer.

No excess excavation will be considered for payment and extra work occasioned shall be done at contractor risk & cost.

#### 8.5 Rate include

- a) Excavation & disposing of material including backfilling etc. as directed.
- b) Setting out works profiles etc.
- c) leveling of surface
- d) Site clearing
- e) Dewatering

**The following specifications shall be followed for material and execution of work.**

#### 1.UADD Specifications

#### 2. PWD

#### 3. CPWD

#### 4. Applicable IS

### **SPECIFICATION SHALL BE ADOPTED FOR ITEM WORK**

#### **9. SPECIFICATIONS INTERLOCKING CEMENT CONCRETE PAVER BLOCKS**

The interlocking concrete blocks should be procured from manufacturer approved by BSCDCL and satisfying the following criteria. IRC SP 63 2004 shall be used as guideline for Paver Block work.

- a. Manufacturer shall have fully automatic vibro pressing plant with vertical vibration system to ensure maximum compaction to achieve required strength. The grade of concrete should be M-40, thickness 80mm M – 30, thickness 60mm and M – 50, thickness 100mm.
- b. Manufacturer shall have adequate capacity mixer with digital water meter / moisture control system to maintain constant water/ cement ratio.
- c. Manufacturing plant shall have complete automation with computerized weigh batching system for consistent quality of paving blocks.
- d. Blocks shall be moist cured for initial 24 hours and then water cured for at least 15 days before dispatch to site.
- e. Manufacturer shall have complete laboratory setup for testing blocks as per IS 15658- 2006 and should be on approved list of MPRRDA, MPPWD, CPWD or equivalent organization.
- f. Manufacturer shall possess excise registration certificate.

#### **10. TRAFFIC MANAGEMENT DURING CONSTRUCTION**

1 The Contractor shall at all times carry out work on the road in a manner creating least interference to the flow of traffic while consistent with the satisfactory execution of the same. For all works involving improvements to the existing highway, the Contractor shall, in accordance with the directives of the

Engineer, provide and maintain, during execution of the work, a passage for traffic either along a part of the existing carriageway under improvement, or along a temporary diversion constructed close to the highway. The contractor shall take prior approval of the Engineer regarding traffic arrangements during construction.

2 Signs, lights, barriers and other traffic control devices shall be provided and maintained in a satisfactory condition till such time they are required as directed by the Engineer, so as to ensure smooth and safe traffic on the road throughout the length. Necessary traffic arrangement at temporary diversions by signs, lights, barriers etc. is also included in the scope

3 The Contractor shall take all necessary measures for the safety of traffic during construction and provide, erect and maintain such barricades, including signs, markings, flags, lights and flagmen as may be required by the Engineer for information and protection of traffic approaching or passing through the section of the highway under improvement. Before taking up any construction, an agreed phased programme for the diversion of traffic on the highway shall be drawn up in consultation with the Engineer. The barricades erected on either side of the carriageway/portion of the carriageway closed to traffic, shall be of strong design to resist violation, and painted with alternate black and white stripes, Red lanterns or warning lights of similar type shall be mounted on the barricades at night and kept lit throughout from sunset to sunrise. At the points where traffic is to deviate from its normal path (whether on temporary diversion or part width of the carriageway) the channel for traffic shall be clearly marked with the aid of pavement markings, painted drums or a similar device to the directions of the Engineer. At night, the passage shall be delineated with lanterns of other suitable light source.

One-way traffic operation shall be established whenever the traffic is to be passed over part of the carriageway inadequate for two-lane traffic. This shall be done with the help of temporary traffic signals or flagmen kept positioned on opposite sides during all hours. For regulation of traffic, the flagmen shall be equipped with red and green flags and lanterns/lights. On both sides, suitable regulatory/warning signs as approved by the Engineer shall be installed for the guidance of road users. On each approach, at least two signs shall be put up, one close to the point where transition of carriageway begins and the other 120 m away. The signs shall be of approved design and of refractory type, if so directed by the Engineer. 4 Signs, lights, barriers and other traffic control devices, as well as the riding surface of diversions shall be maintained in a satisfactory condition till such time they are required as directed by the Engineer. The temporary travelled way shall be kept free of dust by frequent applications of water, if necessary.

### **TRAFFIC SAFETY MEASURES DURING CONSTRUCTION**

This includes providing traffic safety arrangement required for traffic control near the stretch of road where widening or resurfacing work is being taken up, before actual start of widening/ resurfacing work of road and during the actual work. The contractor will have to provide the traffic safety arrangement as per the detailed drawing. The traffic safety arrangements will have to be got approved from the Engineer by the contractor before taking any construction activities for widening or resurfacing of road. It will be sole responsibility of bidder to provide for sufficient traffic wardens and barricades along the road edge. The Engineer shall get himself satisfied about the traffic safety arrangement provided on the work site before allowing contractor to commence the widening activity and a certificate to that effect shall be recorded in the Measurement Book. The following traffic signs shall be provided by the contractor.

A) The sign No. 1 **"SPEED LIMIT (20)"** shall be placed at a distance of 120 m. away from point where the transition of carriageway begins. The sign board shall be in size 60 cm. dia. having white

background and red border and the numerals shall be in black colour as per IRC: 67-1977. Distance between sign No. 1 and sign No. 2 shall be minimum 20 m.

B) The sign No. 2 cautionary boards indicating **“NARROW ROAD AHEAD”** shall be placed at a distance of 80 m. away from the point of transition of carriageway. The signboard shall be of an equilateral triangle of size 90 cm. having white colour background. Retro-reflective border in red colour and non reflective symbol in black colour as per IRC: 67-1977.

C) The sign No. 3 signboard indicating **“MEN AT WORK / ROAD WORK AHEAD”** shall be placed at a distance of 40 m. away from the point of transition of carriageway. The signboard shall be of an equilateral triangle of size 90 cm. having white colour background. Retro-reflective border in red colour and non reflective symbol in black colour as per IRC: 67-1977.

D) The sign No. 4 the board displaying the message **“GO SLOW- WORK IN PROGRESS– SORRY FOR INCONVENIENCE”** shall be placed at the point of transition of carriageway. The size of signboard shall be 1.0 m x 1.0 m. having red background and retro- reflective messages in white colour.

#### **BARRICADING FOR WORK:**

The proper barricading of the construction zone for road widening or resurfacing shall be done by contractor by using the following devices and providing adequate number of persons with Flags / Whistles and reflective jackets for traffic control. □ Sand filled plastic cones mounted with Retro-reflective Arrow Hazard Marker sign shall be placed as indicated in the drawing. Plastic cone shall be 73 cm. in height having 39 cm. square/hexagonal bases. Sand filled plastic cones shall be placed along the work is in progress as shown in the drawing. Cones shall be fluorescent orange and shall be made of a material that can be struck without damaging vehicles on impact. For night time use, cones shall be retroreflective or equipped with lighting devices for maximum visibility. Retroreflection shall be provided by a white band 150 mm wide, no more than 100 mm from the top of the cone, and an additional 100 mm white band a minimum of 50 mm below the 150 mm top band. The reflective sheeting used for bands shall be of Class B sheeting as per IRC-67:2011. □ Retro-reflective Strong Inviolable Stand Type Barrier shall be placed at either ends of the widening area up to the edge of the Road. The barricades shall not be removed unless the permission is given by the responsible officer of the rank not less than Deputy Engineer. The Barricade shall have two plates of size 1.30 m x 0.20 m. painted black and shall have white Retro-reflective Strips of Class B sheeting as per IRC-67:2011. and mounted on Angle Iron Stand of 1.0 m. height. Minimum height of barricade shall be 1.50 m. alternatively, the barricading with continuous Tin sheets fixed on wooden posts at distance of not more than 2 m and height not less than 1.5 m shall be used. The tin sheets shall be painted in alternate Black and Yellow paint and maintain in good condition during the widening work. All the excavated portions of road / CD work/ RCC chambers etc shall be covered on all sides with painted Tin Sheet barricading. □ Yellow light flasher shall be kept lit from sunset to sunrise, 2 Nos. along transition line of traffic and 3 Nos. at barriers on both sides. □ Informatory sign board indicating Name of work, Contractor, Consultant, Amount of contract, completion period, Defect Liability period, and Telephone No., name of Junior Engineer, Consultant and Contractor Engineer with Telephone No. shall be provided at the starting point, end point of the stretch of road proposed for widening as per the scope of the agreement. The signs, lights, barricades and other traffic control devices shall be well maintained, till such time that the traffic is commissioned on the widened road. The size, shape and



colour of all the sign and caution boards shall be as mentioned above as per detailed drawings in accordance with the relevant IRC Specifications and as per Ministry of Road Transport & Highway (MORT&H) Specifications. The sign shall be erected when the maintenance or minor construction activity extends over longer period of time and is of a more stationary nature. It may also be used at intermediate locations on long construction areas to set apart certain road sections having a higher degree of construction activities than observed in other intersections.

SECTION-4

LABOUR SAFETY, HEALTH  
AND  
REGULATIONS INCLUDING FORMS

## **LABOUR SAFETY PROVISIONS**

Suitable scaffolds should be provided for workmen for all works that cannot safely be done from the ground, or from solid construction except such short period work as can be done safely from ladders. When a ladder is used an extra mazzdoor shall be engaged for holding the ladder and if the ladder is used for carrying materials as well, suitable footholds and hand holds shall be provided on the ladder and the ladder shall be given an inclination not steeper than 1/4 to 1 (1/4 horizontal and 1 vertical).

Scaffolding or staging more than 3.6m (12 feet) above the ground or floor, swung or suspended from an overhead support or erected with stationery support shall have a guard rail properly attached or bolted, braced and otherwise secured at least 90 cm. (3 feet) high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such opening as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.

Working platforms, gangways, and stairways should be so constructed that they should not sag unduly or unequally, and if the height of the platform or the gangway or the stairway is more that 3.6m (12 feet) above ground level or floor level, they should be closely boarded, should have adequate width & should be suitable fastened as described in (2.0) above.

Every opening in the floor of a building or in a working platform shall be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be 90 cm (3 feet).

Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9m. (30 feet) in length while the width between side rails in rung ladder shall in no case be less than 29 cm. (11.5") for ladder up to and including 3m (10 feet) in length. For longer ladders this width should be increased at least 1/4" for each additional 30 cm (1 ft.) of length. Uniform step spacing shall not exceed 30 cm (12"). Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the sites of the work shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The contractor shall provide all necessary fencing and lights to protect the public from accident, and shall be bound to bear the expenses of defense of every suit, action or other proceeding at law that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay any damages and cost which may be awarded in any such suit, action or proceedings to any such person or which may, with the consent of the Contractor, be paid to compensate any claim by any such person.

## **EXCAVATION AND TRENCHING**

All trenches, 1.2mts.(four feet) or more in depth, shall at all times be supplied with at least one ladder for each 30m.(100 feet) in length or fraction thereof, ladder shall be extended from bottom of the trench to at least 90cm (3feet) above the surface of the ground. The side of the trenches, which are 1.5 m. (5feet) or more in depth shall be stepped back to give suitable slope or securely held by timber bracing, so as to avoid the danger or sides to collapsing. The excavated materials shall not be placed within 1.5m (5 feet) of the edges of the trench or half of the depth of the trench whichever is more.

Cutting shall be done from top to bottom. Under no circumstances undermining or undercutting shall be done.

Demolition - Before any demolition work is commenced and also during the progress of the work following precautions shall be observed:

All roads and open areas adjacent to the work site shall either be closed or suitably protected.

No electric cable or apparatus which is likely to be a source of danger or a cable or apparatus used by the operator shall remain electrically charged.

All practical steps shall be taken to prevent danger to persons employed from risk of fire or explosion or flooding. No floor, roof or other part of the building shall be overloaded with debris or materials as to render it unsafe.

All necessary personal safety equipment's as considered adequate by the Engineer-in-charge should be kept available for the use of persons employed on the site and maintained in a condition suitable for immediate use, and the contractor should take adequate step to ensure proper use of equipment by those concerned. The following safety equipment shall be invariably provided.

Workers employed on mixing asphaltic materials, cement and lime mortars shall be provided with protective footwear and protective goggles.

Those engaged in white washing and mixing or stacking of cement bags or any materials which are injurious to the eye shall be provided with protective goggles.

- 4.1 Those engaged in welding works shall be provided with welders protective eye shields.

Stone breakers shall be provided with protective goggles and protective clothing and seated at sufficiently safe interval.

When workers are employed for works in sewers and manholes, which are in active use, the Contractors shall ensure that the manhole covers are opened and ventilated at-least for an hour before the workers are allowed to get into the manholes, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident the public. In addition, the contractor shall ensure that the following safety measures are adhered to:

Entry for workers into the sewer line shall not be allowed except under supervision of the JE or any other higher officer.

At least 5 to 6 manholes upstream and downstream should be kept open for at least 2 to 3 hours before any man is allowed to enter into the manholes for working inside.

Before entry, presence of Toxic gases should be tested by inserting wet lead acetate paper which changes color in the presence of such gases and gives indication of their presence. Presence of Oxygen should be verified by lowering a detector lamp into the manhole. In case, no Oxygen is found inside the sewer line, workers should be sent only with Oxygen kit.

Safety belt with rope should be provided to the workers. While working inside the manholes such rope should be handled by two men standing outside to enable him to be pulled out during emergency.

The area should be barricaded or cordoned off by suitable means to avoid mishaps of any kind. Proper warning signs should be displayed for the safety of the public whenever cleaning works are undertaken during night or day.

No smoking or open flames shall be allowed near the blocked manhole being cleaned.

The malba obtained on account of cleaning of blocked manholes and sewer lines should be immediately removed to avoid accidents on account of slippery nature of the malba.

Workers should not be allowed to work inside the manhole continuously. He should be given rest intermittently. The Engineer-In-charge may decide the time up to which a worker may be allowed to work continuously inside the manhole.

Gas masks with Oxygen Cylinder should be kept at site for use in emergency.

Air-blowers should be used for flow of fresh air through the manholes. Whenever called for, portable air-blowers are recommended for ventilating the manholes. The Motors for these shall be vapour proof and of totally enclosed type. Non sparking gas engines also could be used but they should be placed at-least 2 metres away from the opening and on the leeward side protected from wind so that they will not be a source of friction on any inflammable gas that might be present.

The workers engaged for cleaning the manholes / sewers should be properly trained before allowing to work in the manhole.

The workers shall be provided with Gumboots or non sparking shoes, bump helmets and gloves non sparking tools, safety lights and gas masks and portable air blowers (when necessary). They must be supplied with barrier cream for anointing the limbs before working inside the sewer lines.

Workmen descending a manhole shall try each ladder step or rung carefully before putting his full weight on it to guard against insecure fastening due to corrosion of the rung fixed to manhole well.

If a man has received a physical injury, he should be brought out of the sewer immediately and adequate medical aid should be provided to him.

The extent to which these precautions are to be taken depend on individual situation but the decision of the Engineer-In-charge regarding the steps to be taken in this regard in an individual case will be final.

The Contractor shall not employ men and women below the age of 18 years on the work of painting with products containing lead in any form wherever men above the age of 18 are employed on the work of lead painting the following precautions should be taken.

4.1.1 No paint containing lead or lead products shall be used except in the form of paste or readymade paint.

4.1.2 Suitable face masks should be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint is dry rubbed and scrapped.

4.1.3 Overalls shall be supplied by the Contractor to the workmen and adequate facilities shall be provided to enable the working painters to wash during the cessation of work.

4.1.4.1 a) White lead, sulphate or lead work products containing those pigments shall not be used in painting operation except in the form of paste or of paints ready for use. Measures shall be taken whenever required in order to prevent danger arising from the application of paint in the form of spray. Measures shall be taken, whenever practicable to prevent danger arising out of dust caused by dry rubbing down and scrapping.

b) Adequate facilities shall be provided to enable working painter to wash during and on cessation of work.

c) Suitable arrangements shall be made to prevent clothing put off during working hours being spoiled by painting materials.

4.1.4.2 a) Cases of lead poisoning and of suspected lead poisoning shall be notified and shall be subsequently verified by a medical man appointed by the competent authorities of BSCDCL.

The BSCDCL may require when necessary a medical examination of workers. Instructions with regard to the special hygienic precautions to be taken in the painting trade shall be distributed to working painters.

When the work is done near any place where there is risk of drowning, all necessary equipment's should be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provisions should be made for prompt first aid treatment for all injuries likely to be sustained during the course of the work.

Use of hoisting machines and tackle including their attachment encourage and supports shall conform to the following standard of conditions.

b) These shall be of good mechanical construction, sound material and adequate strength and free from patent, defects and shall be kept in good working order. Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength, and free from patent defects.

Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 years should be in-charge of any hoisting machine including any scaffolding, winch or giving signals to operator.

In case of every hoisting machine and of every chain ring hook, shackle swivel and pulley block used in hoisting or as means of suspension the safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load. In case of a hoisting machine having a variable safe working load, each safe working load and the conditions under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to above in this clause shall be loaded beyond the safe working load except for the purpose of testing.

In case of BSCDCL machines, the safe working load shall be notified by the Engineer-in- Charge. As regards Contractor's machines the Contractor shall notify the safe working load of the machine to the Engineer-in-charge whenever he brings any machinery to site of work and get verified by the Engineer-in-Charge.

Motors gearing, transmission electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safeguard. Hoisting appliances should be provided with such means as will reduce to the minimum the risk of accidental descent of the load. Adequate precautions should be taken to reduce the minimum the risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations, which are already energized, insulating mats, wearing apparel, such as gloves sleeves and boots as may be necessary be provided. The worker should not wear any rings, watches and carry keys or other materials, which are good conductors of electricity.

All scaffold, ladders, and other safety devices mentioned or described herein shall be maintained in safe condition and no scaffold ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities should be provided at or near places of work.

These safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent place of work spot. The person responsible for compliance of the safety codes shall be named therein by the contractor.

To ensure effective enforcement of the rules and regulations relating to safety precautions the arrangements made by the Contractor shall be open to inspection by BSCDCL Official or their representatives.

Notwithstanding the above Clauses from (i) to (xiv) there is nothing in these to exempt the contractor from the operations of any other Act or Rule in force in the Republic of India.

**SECTION-5**

**FORMS AND FORMATS**

**PROFORMAS:**

**PROFORMA- I**

The list of similar works as stated in the Minimum Qualification requirement for Bidders for Experience in Similar Works – Clause I

<b>PROFORMA- I</b>					
Sr.No.	Name of the Project	Name of the employer	Stipulated date of completion	Actual date of completion	Actual Cost o work done
1	2	3	4	5	6

**NOTE:**

Scanned Attested copies of completion/performance certificates from the Engineer-in- Charge for each work should be annexed in the support of information furnished in the above proforma.

Works shall be grouped financial year-wise.

**PROFORMA- II**

Yearly turnover of Civil Engineering Construction Works during the last three years.

<b>PROFORMA- II</b>					
Sr.No.	Financial year	Annual Turnover of Civil Engineering Works	Updated value to current year	Average of last 3years	Page No.
1					
2					
3					
Total					

**NOTE:** The above figures shall tally with the audited balance sheets uploaded by the Bidders duly certified by Chartered Accountant.



**FORM XXV**  
**DETAILS OF THE BALANCE WORK IN HAND AS ON \_\_\_\_\_**  
**(UPTO THE PRECEDING MONTH OF SUBMISSION OF BID) WITH BSCDCL**

**(To be submitted in Envelop-1)**

S. No	Name of the Unit/Zone/SBG/RGB	Contract Value	Date of start as per LOI/Contract	Date of completion as per LOI/Contract	Work done up to the preceding month of submission of bid	Balance value of work

**Note:** The bidder shall also include the value of all such works which are awarded to bidder but yet not started up to the preceding month of submission of bid.

**Appendix - 'O'**

**FORM XXVI**  
**AFFIDAVIT**

**(To be submitted by bidder on non-judicial stamp paper of Rs. 100/- (Rupees Hundred only) duly attached by Notary Public)**

**(To be submitted in Envelop-1)**

Affidavit of Mr. ....S/o ..... R/o  
 .....

I, the deponent above named do hereby solemnly affirm and declare as under: That I  
 am the Proprietor/Authorized signatory of M/s  
 .....  
 Having its Head Office/Regd. Office at  
 .....

That the information/documents/Experience certificates submitted by  
 M/s..... along with the tender for ..... (*NAME  
 OF WORK*).....

To BSCDCL are genuine and true and nothing has been concealed.

I shall have no objection in case BSCDCL verifies them from issuing authority (ies). I shall also have no objection in providing the original copy of the document(s), in case BSCDCL demand so for verification.

I hereby confirm that in case, any document, information & / or certificate submitted by me found to be incorrect / false / fabricated, BSCDCL at its discretion may disqualify / reject / terminate the bid/contract and also forfeit the EMD / All dues.

I shall have no objection in case BSCDCL verifies any or all Bank Guarantee(s) under any of the clause(s) of Contract including those issued towards EMD and Performance Guarantee from the Zonal Branch /office issuing Bank and I/We shall have no right or claim on my submitted EMD before BSCDCL receives said verification.

That the Bank Guarantee issued against the EMD issued by (name and address of the Bank) is genuine and if found at any stage to be incorrect / false / fabricated, BSCDCL shall reject my bid, cancel pre-qualification and debar me from participating in any future tender for three years.

I, ....., the Proprietor / Authorised signatory of M/s..... do hereby confirm that the contents of the above Affidavit are true to my knowledge and nothing has been concealed there from..... and that no part of it is false.

Verified at ..... this..... day of .....

DEPONENT

ATTESTED BY (NOTARY PUBLIC)

**APPLICATION FOR EXTENSION OF TIME**

(To be completed by the Contractor)

**P A R T –I**

Name of Contractor

Name of the work as given in the Agreement

Agreement No.

Estimated amount put to tender

Date of commencement work as per agreement

Period allowed for completion of work as per agreement

Date of completion stipulated as per agreement

Period for which extension of time  
has been give previously

Extension granted

First extension vide Engineer-in-charge letter No... ..date	Months	Days
---	--------	------

2nd extension vide Engineer-in-charge letter No..... date	Months	Days
---	--------	------

3rd extension vide Engineer-in-charge letter No..... date	Months	Days
---	--------	------

4th extension vide engineer-in-charge letter No..... date	Months	Days
---	--------	------

Total extension previously given

Reasons for which extension have been previously given (copies of the previous application should be attached)

Period for which extension is applied for:

Hindrances on account of which extension is applied for with dates on which hindrances occurred, and the period for which these are likely to last.

Serial No.

Nature of hindrance

Date of Occurrence

Period for which it is likely to last

Period for which extension required for this particular hindrance. Overlapping period, if any, with reference to item

Net extension applied for

Remarks, if any

Total period for which extension is now applied for on account of hindrances mentioned above ..... Month/ days.

Extension of time required for extra work.

Details of extra work and on the amount involved:

Total value of extra work

Proportionate period of extension of time based on estimated amount put to tender on account of extra work.

Total extension of time required for 11 & 12

Submitted to the Engineer-in-Charges office.

DATE

SIGNATURE OF CONTRACTOR

### **APPLICATION FOR EXTENSION OF TIME**

#### **(PART – II)**

Date of receipt of application from Contractor for the work in the Engineer-in-charge office.

Acknowledgement issued by Engineer-in-charge vide his letter No.dated

Engineer-in-charge remarks regarding hindrances mentioned by the Contractor.

Serial No.

Nature of hindrance

Date of occurrence of hindrance

Period for which hindrance, is likely to last

Extension of time period applied for by the contractor Over lapping period, if any, giving reference to items which over lap

Net period for which extension is recommended.

Remarks as to why the hindrance occurred and justification for extension recommended.

Engineer-in-charge recommendations.

The present progress of the work should be stated and whether the work is likely to be completed by the date up to which extension has been applied for. If extension of time is not recommended, what compensation is proposed to be levied under the agreement.

SIGNATURE OF ENGINEER-IN-  
CHARGE

**PROFORMA FOR EXTENSION OF  
TIME P A R T -III**

To

NAME

ADDRESS OF THE CONTRACTOR

SUBJECT:

Dear Sir(s)

Reference your letter No \_\_\_\_\_ dated \_\_\_\_\_, in connection with the grant of extension of time for completion of the work.....

The date of completion for the above mentioned work, is ..... as stipulated in the agreement, dated .....

Extension of time for completion of the above mentioned work is granted upto \_\_\_\_\_, without prejudice to the right of the BSCDCL to recover compensation for delay in accordance with the provision made in Clause of the said agreement dated the \_\_\_\_/\_\_\_\_/\_\_\_\_. It is also clearly understood that the BSCDCL shall not consider any revision in contract price or any other compensation whatsoever due to grant of this extension.

Provided that notwithstanding the extension hereby granted, time is and shall still continue to be the essence of the said agreement.

Yours faithfully,  
FOR Bhopal Smart City Development Corporation Ltd.

**PROFORMA OF BANK GUARANTEE IN LIEU OF E M D (TENDER BOND)**  
(Judicial Stamp paper of appropriate value as per stamp Act-of respective state)

Bhopal Smart City Development Corporation Ltd.  
Near Tatpar Petrol Pump, Sector A, Berkheda,  
Bhopal, Madhya Pradesh 462023

In consideration of Bhopal Smart City Development Corporation Limited, having its Registered Office at, Near Tatpar Petrol Pump Sector A, Berkheda (hereinafter called "BSCDCL" which expression shall unless repugnant to the subject or context include its successors and assigns) having issued Notice Inviting Tender No..... and M/s..... having its Registered Head Office at..... (hereinafter called the "BIDDER") is to participate in the said tender for.....

Whereas BSCDCL, as a special case, has agreed to accept an irrevocable and unconditional Tender Bond Guarantee for an amount of Rs..... valid upto.....from the Bidder in lieu of Cash Deposit of Rs..... required to be made by the Bidder, as a condition precedent for participation in the said tender.

We the ..... (hereinafter called the "BANK") having its Registered, Office at..... and branch office at..... do hereby unconditionally and irrevocably undertake to pay immediately on demand in writing and without demur/protest any amount but not exceeding Rs ..... Any such demand made by BSCDCL shall be conclusive and binding on us irrespective of any dispute or differences that may be raised by the Bidder. Any change in the constitution of the Bidder or the Bank shall not discharge our liability under the guarantee.

We, the..... Bank, lastly undertake not to revoke this guarantee during its currency without the prior consent of BSCDCL in writing and this guarantee shall remain valid upto.....Unless a claim is made within three months from the date of expiry i.e. .... (three months after the date of expiry), we shall be relieved of our liability under this guarantee thereafter.

FOR AND ON BEHALF OF BANK

PLACE :

DATED :

WITNESS.

1.

2.

**PROFORMA OF BANK GUARANTEE (PERFORMANCE)**

(Judicial Stamp paper of appropriate value as per stamp Act-of respective state)

Bhopal Smart City Development Corporation Ltd.  
Near Tatpar Petrol Pump, Sector A, Berkheda,  
Bhopal, Madhya Pradesh 462023

Whereas the Bhopal Smart City Development Corporation Limited, having its Registered Office at BSCDCL Near Tatpar Petrol Pump Sector A, Berkheda, Bhopal (hereinafter called "BSCDCL" which expression shall include its successors and assigns) having awarded a work order/contract / supply order No. dated (hereinafter called the contract) to M/s. (hereinafter called the contractor / supplier) at a total price of Rs. subject to the terms and conditions contained in the contract.

WHEREAS, the terms and conditions of the contract require the contractor to furnish a

Rs...  
..... (Rupees.....  
bank guarantee for .. ) being ..... % of the total value of the contract for proper execution and due fulfillment of the terms and conditions contained in the contract.

We, the Bank, (hereinafter called the "Bank") do hereby unconditionally and BSCDCL irrevocably undertake to pay to immediately on demand in writing and without protest/or demur all moneys payable by the contractor/supplier to BSCDCL in connection with the execution/supply of and performance of the works/equipment, inclusive of any loss, damages, charges, expenses and costs caused to or suffered by or which would be caused to or suffered by BSCDCL by reason of any breach by the contractor/supplier of any of the terms and conditions contained in the contract as specified in the notice of demand made by BSCDCL to the bank. Any such demand made by BSCDCL on the bank shall be conclusive evidence of the amount due and payable by the bank under this guarantee. However, the Bank's liability under this guarantee, shall be limited to Rs..... in the aggregate and the bank hereby agrees to the following terms and conditions:-

- (i) This guarantee shall be a continuing guarantee and irrevocable for all claims of BSCDCL as specified above and shall be valid during the period specified for the performance of the contract including the period of maintenance/warranty i.e. up to.....
- (ii) We, the said bank further agree with BSCDCL that BSCDCL shall have the fullest liberty without our consent and without affecting in any manner our obligations and liabilities hereunder to vary any of the terms and conditions of the said contract or to extend time for performance of contract by the contractor from time to time or to postpone for any time or from time to time any of the powers exercisable by BSCDCL against the contractor/supplier under the contract and forbear or enforce any of the terms and conditions relating to the said contract and we shall not be relieved from our liability by reason of any

such variations or extension being granted to the contractor or for any forbearance, act or omission on the part of BSCDCL or any indulgence by BSCDCL to the contractor or by any such matter or thing whatsoever, which under the law relating to the sureties would, but for this provision, have effect of so relieving us.

This guarantee/undertaking shall be in addition to any other guarantee or security whatsoever BSCDCL may now or at any time have in relation to the performance of the works/equipment and the company shall have full re-course to or enforce this security in performance to any other security or guarantee which the BSCDCL may have or obtained and there shall be no forbearance on the part of the company in enforcing or requiring enforcement of any other security which shall have the effect of releasing the Bank from its full liability. It shall not be necessary for BSCDCL to proceed against the said contractor/supplier before proceeding against the Bank.

This guarantee/ undertaking shall not be determined or affected by the liquidation or winding up, dissolution or change of constitution or insolvency of the supplier/ contractor, but shall in all respects and for all purposes be binding and operative until payment of all moneys payable to BSCDCL in terms thereof are paid by the Bank.

The Bank hereby waives all rights at any time inconsistent with the terms of this Guarantee and the obligations of the bank in terms hereof, shall not be otherwise effected or suspended by reasons of any dispute or disputes having been raised by the supplier/contractor (whether or not pending before any Arbitrator, Tribunal or Court) or any denial of liability by the supplier/contractor stopping or preventing or purporting to stop or prevent any payment by the Bank to BSCDCL in terms hereof.

We, the said Bank, lastly undertake not to revoke this guarantee during its currency except with the previous consent of BSCDCL in writing. Unless a claim is made in writing

within three months from the date of expiry of this guarantee i.e.....  
(three months after the date of expiry) we shall be relieved from all liabilities under  
this guarantee

thereafter.

Signed this ..... day of ..... at.....

For and on behalf of Bank

WITNESS.

1. \_\_\_\_\_

—

2. \_\_\_\_\_



**PROFORMA OF BANK GUARANTEE  
(FOR MOBILIZATION ADVANCE)**

(Judicial Stamp paper of appropriate value as per stamp Act-of respective state)

Bhopal Smart City Development Corporation Limited,  
Near Tatpar Petrol Pump, Sector A, Berkheda, Bhopal,  
Madhya Pradesh 462023

1.0 In consideration of the Bhopal Smart City Development Corporation Limited, having its Registered Office at BSCDCL, Near Tatpar Petrol Pump, Sector A, Berkheda, Bhopal (hereinafter called "BSCDCL" which expression shall unless repugnant to the subject or context include his successor and assigns) having agreed under the terms and conditions of Contract No..... dated..... made between..... and BSCDCL in connection with..... (hereinafter called "the said contract") to make at the request of the Contractor a Mobilization Advance of Rs..... for utilizing it for the purpose of the Contract on his furnishing a guarantee acceptable to BSCDCL, we the ..... Bank Ltd., (hereinafter referred to the "the said Bank") and having our registered office at..... do hereby guarantee the due recovery by BSCDCL of the said advance as provided according to the terms and conditions of the Contract. We..... do hereby undertake to pay the amount due and payable under this Guarantee without any demur, merely on a demand from BSCDCL stating that the amount claimed is due to BSCDCL under the said Agreement. Any such demand made on the..... shall be conclusive as regards the amount due and payable by the..... under this guarantee and..... agree that the liability of the ..... to pay BSCDCL the amount so demanded shall be absolute and unconditional notwithstanding any dispute or disputes raised by the Contractor and notwithstanding any legal proceeding pending in any court or Tribunal relating thereto. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs..... We ..... Bank further agree that BSCDCL shall be the sole judge of and as to whether the amount claimed has fallen due to BSCDCL under the said agreement or whether the said Contractor has not utilized the said advance or any part thereof for the purpose of the Contract and the extent of loss or damage caused to or suffered by BSCDCL on account of the said advance together with interest not being recovered in full and the decision of BSCDCL that the amount has fallen due from contractor or the said Contractor has not utilized the said advance or any part thereto for the purpose of the contract and as to the amount or amounts of loss or damage caused to or suffered by BSCDCL shall be final and binding on us. We, the said Bank, further agree that the Guarantee herein contained shall remain in full force and effect till the said advance has been fully recovered and its claims satisfied or discharged and till BSCDCL certify that the said advance has been fully recovered from the said Contractor, and accordingly discharges this Guarantee subject, however, that BSCDCL shall have no claims under this Guarantee after the said advance has been fully recovered, unless a notice of the claims under this Guarantee has been served on the Bank before the expiry of the said Bank Guarantee in which case the same shall be enforceable against the Bank.

BSCDCL shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee or indemnity from time to time to vary any of the terms and conditions of the said Contract or the advance or to extend time of performance by the said Contractor or to postpone for any time and from time to time of the

powers exercisable by it against the said Contractor and either to enforce or forbear from enforcing any of terms and conditions governing the said Contract or the advance or securities available to BSCDCL and the said Bank shall not be released from its liability under these presents by any exercise by BSCDCL of the liberty with reference to the matters aforesaid or by reasons of time being given to the said Contractor or any other forbearance, act or omission on the part of BSCDCL or any indulgence by BSCDCL to the said Contractor or of any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect of so releasing the bank from its such liability. 5.0 It shall not be necessary for BSCDCL to proceed against the Contractor before proceeding against the Bank and the Guarantee herein contained shall be enforceable against the Bank notwithstanding any security which BSCDCL may have obtained or obtain from the Contractor or shall at the time when proceedings are taken against the Bank hereunder be outstanding or unrealized.

We, the said Bank, lastly undertake not to revoke this Guarantee during its currency except with the previous consent of BSCDCL in writing and agree that any change in the constitution of the said Contractor or the said Bank shall not discharge our liability hereunder.

Dated this .....day of.....

Dated

For and on behalf of Bank

(NAME AND DESIGNATION)

**PROFORMA OF BANK GUARANTEE  
(IN LIEU OF SECURITY DEPOSIT)**

(Judicial Stamp paper of appropriate value as per stamp Act-of respective state)

Bhopal Smart City Development Corporation Ltd.,  
Near Tatpar Petrol Pump, Sector A, Berkheda, Bhopal

In consideration of the Bhopal Smart City Development Corporation Ltd., having its Registered Office at Near Tatpar Petrol Pump Sector A, Berkheda(hereinafter called "BSCDCL") which expression shall include its successors and assigns having awarded to M/s..... (hereinafter called "the Supplier/Contractor") which expression shall wherever the subject or context so permits includes its successors and assigns) a Contract in terms inter-alia of BSCDCL's letter No..... dated..... and the Contract/Purchase Conditions of BSCDCL and upon the condition of the Supplier/Contractor furnishing Security for the performance of the Supplier's obligations and /or discharge of the contractor's/supplier's liability under and/or in connection with the said supply contract upto a sum of Rs..... (Rupees..... only)

We,..... ((hereinafter called "The Bank") which expression shall include its successors and assigns) hereby undertake and guarantee payment to BSCDCL forthwith on the same day on demand in writing and without protest or demur of any and all moneys payable by the supplier/contractor to BSCDCL under, in respect or in connection with the said contract inclusive of all the losses, damages, costs, charges and expenses and other moneys payable in respect of the above as specified in any notice of demand made by BSCDCL to the Bank with reference to this guarantee up to and aggregate limit of Rs.....(Rupees.....only) and the bank hereby agree with BSCDCL that:

This Guarantee shall be continuing guarantee and shall ..... remain valid and irrevocable for all claims of BSCDCL and liabilities of Supplier/Contractor arising upto and until midnight of.....

This Guarantee shall be in addition to any other Guarantee or Security whatsoever that BSCDCL now or at any time have in relation to the Supplier's obligations/liabilities under and/or in connection with the said supply/contract, and BSCDCL shall have full authority to take recourse or to enforce this Security in preference to any other Guarantee or Security which BSCDCL may have or obtain and no forbearance on the part of BSCDCL in enforcing or requiring enforcement of any other Security shall have the effect of releasing the Bank from its liability hereunder.

BSCDCL shall be at liberty without reference to the Bank and without affecting the full liability of the Bank hereunder to take any other security in respect of the Supplier's/Contractor's obligations and/ or liabilities under or in connection with the said supply/contract or to grant time and / or indulgence to the supplier / contractor or to increase or otherwise vary the prices or the total contract value or to release or to forbear from enforcement of all or any of the conditions under the said supply / contract and / or the remedies of BSCDCL under any other security/securities now or hereafter held by BSCDCL and no such dealings, increase(s) or other indulgence(s) or arrangement(s) with the supplier / contractor or releasing or forbearance

whatsoever shall have the effect of releasing the Bank from its full liability to BSCDCL hereunder or prejudicing rights of BSCDCL against the Bank. This Guarantee shall not be determined or affected by the liquidation or winding up, dissolution or change of constitution or insolvency of the supplier / contractor but shall in all respects and for all purposes be binding and operative until payment of all moneys payable to BSCDCL in terms thereof.

5. The Bank hereby waives all rights at any time inconsistent with the terms of this Guarantee and the obligations of the Bank in terms hereof shall not be otherwise affected or suspended by reason of any dispute or disputes having been raised by the supplier /contractor (whether or not pending before any Arbitrator, Tribunal or Court) or any denial or liability by the supplier/ contractor stopping/ preventing or purporting to stop or prevent any payment by the Bank to BSCDCL in terms thereof.

The amount stated in any notice of demand addressed by BSCDCL to the Guarantor

as liable to be paid to BSCDCL by the supplier/contractor or as suffered or incurred by BSCDCL on account of any losses or damages, costs, charges and / or expenses shall as between the Bank

and BSCDCL be conclusive of the amount so liable to be paid to BSCDCL or suffered or incurred by BSCDCL as the case may be and payable by the Guarantor to BSCDCL in terms hereof subject to a maximum of Rs ..... (Rupees ..... only),

Unless demand or claim under this Guarantee is made on the Guarantor in writing within three months form the date of expiry of the Guarantee i.e upto ..... the Guarantor shall be discharged from all liabilities under this Guarantee there under.

Notwithstanding anything contained herein before our liability under this guarantee is restricted to Rs . ..... (Rupees .....only). This guarantee will expire on..... Any claim under this Guarantee must be received by us within three months from the date of expiry i.e. .... (date, three months after the expiry date) and if no such claim has been received by us by that date all your rights under this guarantee will cease.

For and on behalf of the Bank

Place Date

WITNESS:

1.

2.

**PROFORMA OF BANK GUARANTEE  
(FOR MOBILIZATION ADVANCE WITH INTEREST  
BEARING)**

(Judicial Stamp per Stamp Act - paper of appropriate value as respective state)

Bhopal Smart City Development Corporation Limited,  
Bhopal, Pin- 462023

In consideration of the Bhopal Smart City Development Corporation Limited., having its Registered Office at Bhopal -462023 (hereinafter called "BSCDCL" which expression shall unless repugnant to the subject: or context Include his successor and assigns) having agreed under the terms and conditions of Contract No. dated made between (name of the contractor) and BSCDCL in connection with (name of work) (hereinafter called "the said contract") to make at the request of the Contractor a Mobilization Advance of Rs. carrying interest @ ... % p.a. for utilizing it for the purpose of the Contract on his furnishing a guarantee acceptable to BSCDCL, we the Bank (hereinafter referred to the "the said Bank") and having our registered office at do hereby guarantee the due recovery by BSCDCL of the said advance alongwith interest as provided according to the terms and conditions of the contract. We ...

do hereby undertake to pay the amount due and payable under this Guarantee without any demur, merely, on a demand from BSCDCL stating that the amount claimed is due to BSCDCL under the said Agreement. Any such demand made on the said bank shall be conclusive as regards the amount due and payable by the said contractor under this guarantee and agree that the liability of the said bank to pay BSCDCL the amount so demanded shall be absolute and unconditional notwithstanding any dispute or disputes raised by the Contractor and notwithstanding any legal proceeding pending in any court or Tribunal relating thereto. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs ... inclusive of interest @ .....% p.a.

We the said bank further agree that BSCDCL shall be the sole judge of and as to whether the amount claimed has fallen due to BSCDCL under the said agreement or whether the said Contractor has not utilized the said advance or any part thereof for the purpose of the Contract and the extent of loss or damage caused to or suffered by BSCDCL on account of the said advance together with interest not being recovered in full and the decision of BSCDCL that the amount has fallen due from' contractor or the said Contractor has not utilized the said advance or any part thereto for the purpose of the contract and as to the amount or amounts of loss or damage caused to or suffered by BSCDCL shall be final and binding on us.

We, the said Bank, further agree that the Guarantee herein contained shall remain in full force and effect till the said advance has been fully recovered and its claims satisfied or discharged and till BSCDCL certify Contractor, and accordingly discharges this Guarantee subject, however, that BSCDCL shall have no claims under this Guarantee unless a notice of the claims under this Guarantee has been served on the Bank before the expiry of the said Bank Guarantee in which case the same shall be enforceable against the Bank.

BSCDCL shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee or indemnity from time to time to vary any of the

terms and conditions of the said Contract or the advance or to extend time of performance by the said Contractor or to postpone for any time and from time to time of the powers exercisable by it against the said Contractor and either to enforce or forbear from enforcing any of terms and conditions governing the said Contract or the advance or securities available to BSCDCL and the said Bank shall not be released from its liability under these presents by any exercise by BSCDCL of the liberty with reference to the matters aforesaid or by reasons of time being given to the said Contractor or any other forbearance, act or omission on the part of BSCDCL or any indulgence by BSCDCL to the said Contractor or of any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect of so releasing the bank from its such liability.

It shall not be necessary for BSCDCL to proceed against the Contractor before proceeding against the Bank and Guarantee herein contained shall be enforceable against the Bank notwithstanding any security which BSCDCL may have obtained or obtain from the Contractor or shall at the time when proceedings are taken against the Bank hereunder be outstanding or unrealized.

We, the said Bank, lastly undertake not to revoke this Guarantee during its currency except with the previous consent of BSCDCL in writing and agree that any change in the constitution of the said Contractor or the said Bank shall not discharge our liability hereunder.

Dated this..... day of.....

Place:

Date:

Witness:

1.

**FORM FOR GUARANTEE BOND  
FOR ANTI-TERMITE  
TREATMENT**

THIS AGREEMENT made this\_\_\_\_ day of Two thousand \_\_\_\_\_ between M/s\_ (hereinafter called the guarantor of the one part and M/s Bhopal Smart City Development Corporation Limited, hereinafter called the BSCDCL hereinafter called the OWNER of the other part.

Whereas this agreement is supplementary to the contract hereinafter called the contract dated made between the guarantor of the one part Bhopal Smart City Development Corporation Limited, of the other part whereby the contractor inter-alia, understood to render the buildings and structures in the said contract recited, completed, termite proof. And whereas the guarantor agreed to give a guarantee to the effect that the said structure will remain termite proof for TEN YEARS to be so reckoned from the date after the maintenance period prescribed in the contract expires.

During this period of guarantee the guarantor shall make good all defects and for that matter shall replace at his risk and cost such wooden member as may be damaged by termite and in case of any other defect being found, he shall render the building termite proof at his cost to the satisfaction of the Engineer-in-charge and shall commence the works of such rectification within seven days from date of issuing notice from the Engineer-in-Charge calling upon him to rectify the defects falling which the work shall be got done by BSCDCL/ OWNER by some other contractor at the guarantor's cost and risk and in the later case the decision of the Engineer-in-charge as to the cost recoverable from the guarantor shall be final and binding.

That if the Guarantor fails to execute the Anti-Termite treatment or commits breaches hereunder then the Guarantor will indemnify BSCDCL against all losses damages, cost expenses or otherwise which may be incurred by him by reasons of any default on the part of the guarantor in performance and observance of this supplemental Agreement. As to the amount of loss and or damage and/or cost incurred by BSCDCL/ OWNER decision of the Engineer-in-charge will be final and binding on the parties.

In witness where of these presents have been executed by the Guarantor\_\_\_\_\_ and by\_\_\_\_\_ for and on behalf of BSCDCL on the day of month and year first above written.

Signed sealed and delivered by (Guarantor)

IN THE PRESENCE OF:

- 1.
- 2.

Signed for and on behalf of BSCDCL by/ in presence of:

- 1.
- 2.

**GUARANTEE TO BE EXECUTED BY CONTRACTOR FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF WATER PROOFING WORKS**

The agreement made this ..... day of ..... Two thousand One and ..... between ..... (hereinafter called Guarantor of the one part) and the BSCDCL (hereinafter called the Execution Agency of the other part).

WHEREAS this agreement is supplementary to a contract(hereinafter called the Contract), dated ..... and made between the GUARANTOR OF THE ONE part and the BSCDCL of the other part, whereby the Contractor, inter-alia, undertook to render the buildings and structures in the said contract recited completely water and leak proof.

AND WHEREAS the Guarantor agreed to give a guarantee to the effect that the said structures will remain water and leak proof for ten years from the date of handing over o the structure of water proofing treatment.

NOW THE GUARANTOR hereby guarantees that water proofing treatment given by him will render the structures completely leak proof and the minimum life of such water proofing treatment shall be ten years to be reckoned from the date after the maintenance period prescribed in the contract.

Provided that the Guarantor will not be responsible for leakage caused by earthquake or structural defects or misuse of roof or alteration and for such purpose.

Misuse of roof shall mean any operation, which will damage proofing treatment, like chopping of fire wood and things of the same nature which might cause damage to the roof.

Alternation shall mean construction of an additional storey or a part of the roof or construction adjoining to existing roof whereby proofing treatment is removed in parts

The decision of the Engineer-in-Charge with regard to cause of leakage shall be final

During this period of guarantee, the Guarantor shall make good all defects and in case of any defect being found render the building water proof to the satisfaction of the Engineer-in-Charge at his cost and shall commence the work for such rectification within seven days from the date of issue of notice from the Engineer-in- Charge calling upon him to rectify the defects failing which the work shall be got done by the BSCDCL by some other Contractor at the guarantor's cost and risk. The decision of Engineer-in-Charge as to the cost, payable by the Guarantor shall be final and binding.

That if the Guarantor fails to execute the water proofing or commits breach there- under, then the Guarantor will indemnify the principal and his successors against all laws damage, cost, expense or otherwise which may be incurred by him by reason of any default on the part of the GUARANTOR in performance and observance of this supplementary agreement. As to the amount of loss and / or damage and/ or cost incurred by the BSCDCL, the decision of the Engineer-in-Charge will final and binding on the parties.



IN WITNESS WHEREOF these presents have been executed by the Obligor,,,,,.....and by ..... And for and on behalf of the BSCDCL on the day, month and year first above written.

Signed, sealed and delivered by Obligor in the presence of-

- 1.
- 2.

Signed for and on behalf of the BSCDCL by \_\_\_\_\_

In presence of:

- 1.
- 2.

**PROFORMA OF  
INDENTURE FOR SECURED ADVANCE OR CREDIT**

THIS INDENTURE made this day of \_\_\_\_\_ Between \_\_\_\_\_ (hereinafter called the contractor) which expression shall where the Context as admits or implies be deemed to include his executor/administrators and assign of the one part and \_\_\_\_\_ having its Registered Office at, Bhopal (hereinafter called the Engineer) which expression shall where the context so admits or implies be deemed to include its successors and assign of the other part.

Whereas by an agreement dated (hereinafter called the said agreement). The Contractor has agreed to construct.....

And whereas the Contractor has applied to the Engineer that he may be or be given credited for materials brought by him to the site of the work subject to the said agreement for use in construction of the work.

NOW THIS INDENTURE WITNESSETH that in pursuance of the said agreement and in consideration of the sum of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only) paid to the contractor by the Engineer. The receipt where the Contractor hereby acknowledges and of such advance or credited (if any) as may be made to him as aforesaid the Contractor hereby covenants and agrees with The Engineer and declares as follows:

That all sums given as advance or credit by The Engineer to the Contractor as aforesaid shall be employed by the Constructor in or toward the execution of the said works and for no other purpose whatsoever.

That the material for which the advance or credit is given are offered to and accepted by The Engineer as security and are absolutely the Contractor's own

property and free from encumbrances of any kind the Contractor will not make any application for or receives further advance or credit on the security or material which are not absolutely his own property and free from encumbrances of any kind and the Contractor shall indemnify The Engineer against any claims to any material in respect of which advance or credit has been made to him as aforesaid.

That the said material and all other material on the security of which any further advance or advances or credit may be given as aforesaid (hereinafter called the said materials) shall be used by the Contractor solely in the execution of the said works in accordance with the direction of the Engineer and in terms of said agreement.

That the Contractor shall make at his own cost all necessary and adequate arrangement for the proper safe custody and protection against all risks of the said material and that until used in the construction as aforesaid the material shall remain at the site of the said works in Contractor's custody and on his responsibility and shall at all times be open to inspection by The Engineer. In the events of the materials or any part thereof being stolen, destroyed or damaged or becoming deteriorated in greater degree than in due to reasonable use and wear thereof the Contractor will replace the same with other materials of like quality of repair and make good the same as required by The Engineer.

That said material shall not on any account be removed from the site of work except with the written permission of The Engineer.

That the advance shall be repayable in full when or before Contractor receives payment from The Engineer of the price payable to him for the said work under the term and provisions of the said agreement. Provided that if any intermediate payments are made to the Contractor on account of work done then on the occasion

of each payment The Engineer will be at liberty to make a recovery from the Contractor's bill from such payments by deducting there from the value of the said materials than actually used in the contraction and in respect of which recovery has not been made previously. The value of this purpose being determined in respect of each description of materials at the rates at which the amounts of the advance as made under these presents was calculated.

That if the Contractor shall at any time make at any default in the performance of observance in respect of any of the terms and provisions of the said agreement or of that provisions the total amount of the advance or advances that may still be owing to The Engineer, shall immediately on the happening of such default be repayable by the Contractor to The Engineer together with interest thereon at 12% p.a. from the date of respective dated to such advance or advances to the date of payment and with all costs. Damages and expenses incurred by The Engineer in or for recovery hereof or the Contractor hereby covenants and agrees with The Engineer to repay and pay the same respective to him accordingly

That the Contractor hereby charges all the said materials with the repayment to The Engineer of all sums advances or credit as aforesaid and all costs. Charges, damages and expenses payable under these presents PROVIDED ALWAYS it is hereby agreed and declared that notwithstanding anything in the said agreement and without prejudice to the powers contained therein if and wherever the covenant for payment and repayment herein before contained shall be become enforceable and the money owing shall not be paid in accordance therewith. The Engineer may at any time thereafter adopt all or any of the following courses he may deem best:

Seize the utilize the said material or any part thereof in the completion of the said works in accordance with the provision in that behalf contained in the said agreement debating the Contractor with the actual cost of effecting such completion and the amount due in respect of advance or credit under these presents and crediting the Contractor with value of work done as if he has carried it out in accordance with the said agreement and the rates thereby provided if the balance is against the Contractor is to pay the same to the engineer on demand.

Remove and sell by public action the seized materials or any part thereof and out of the money arising from the sale repay the engineer under these presents and pay over the surplus (if any) to the Contractor.

Deduct all or any part of the moneys owing from any sums due to the contractor under said agreement.

Except in the event of such default on the part of contractor as aforesaid, interest on the said advance shall not be payable.

That in the event of conflict between the provisions of these presents and the said agreements, the provision of these presents shall prevail and in the event of any dispute or difference arising over the construction or effect of these presents, the settlement of which has not been hereinbefore expressly provided for the same shall so far as is lawful be subject to jurisdiction of BHOPAL courts only.

IN WITNESS whereof the said the engineer and the contractor hereunto set their respective hands and seals the day year first above written.

Signed Sealed and delivered by

Contractor

The Engineers

## AGREEMENT FORM

This agreement made this day of (Month) (Year), between the **Bhopal Smart City Development Corporation Limited (BSCDCL)**, a company incorporated under the Companies Act, 1956 having its Registered Office at BSCDCL, Bhopal 462023 (hereinafter referred to as the “BSCDCL” which expression shall include its administrators, successors, executors and assigns) of the one part and **M/s(NAME OF CONTRACTOR)** (hereinafter referred to as the ‘Contractor’ which expression shall unless the context requires otherwise include its administrators, successors, executors and permitted assigns) of the other part.

WHEREAS, BSCDCL, has desirous of construction of **(NAME OF WORK)** (hereinafter referred to as the “PROJECT”) on behalf of the **(NAME OF OWNER/MINISTRY)** (hereinafter referred to as “OWNER”), had invited tenders as per Tender documents vide NIT No. \_\_\_\_\_.

AND WHEREAS **(NAME OF CONTRACTOR)** had participated in the above referred tender vide their tender dated \_\_\_\_\_ and BSCDCL has accepted their aforesaid tender and award the contract for **(NAME OF PROJECT)** on the terms and conditions contained in its Letter of Intent No. \_\_\_\_\_ and the documents referred to therein, which have been unequivocally accepted by **(NAME OF CONTRACTOR)** vide their acceptance letter dated \_\_\_\_\_ resulting into a contract.

NOW THEREFORE THIS DEED WITNESSETH AS UNDER:

### **ARTICLE 1.0 – AWARD OF CONTRACT SCOPE OF WORK**

BSCDCL has awarded the contract to **(NAME OF CONTRACTOR)** for the work of **(NAME OF WORK)** on the terms and conditions in its letter of intent No.

\_\_\_\_\_ dated \_\_\_\_\_ and the documents referred to therein. The award has taken effect from **(DATE)** i.e. the date of issue of aforesaid letter of intent. The terms and expressions used in this agreement shall have the same meanings as are assigned to them in the “Contract Documents” referred to in the succeeding Article.

### **ARTICLE 2.0 – CONTRACT DOCUMENTS**

The contract shall be performed strictly as per the terms and conditions stipulated herein and in the following documents attached herewith (hereinafter referred to as “Contract Documents”).

BSCDCL Notice Inviting Tender vide No. \_\_\_\_\_ date \_\_\_\_\_ and BSCDCL’s tender documents consisting of:

General Conditions of Contract (GCC) along with amendments/errata to GCC (if any) issued (Volume-I).

Special Conditions of Contract including Appendices & Annexures, Volume-II. Bill of

Quantities along with amendments/corrigendum of schedule items, if any (Volume-II).

\_\_\_\_\_

\_\_\_\_\_ **(NAME OF CONTRACTOR)** letter proposal dated \_\_\_\_\_ and their subsequent communication:

Letter of Acceptance of Tender Conditions dated \_\_\_\_\_

\_\_\_\_\_

BSCDCL's detailed Letter of Intent No. \_\_\_\_\_ dated \_\_\_\_\_ including Bill of Quantities. Agreed time schedule, Contractor's Organization Chart and list of Plant and Equipment's submitted by Contractor.

All the aforesaid contract documents referred to in Para 2.1 and 2.2 above shall form an integral part of this Agreement, in so far as the same or any part thereof conform, to the tender documents and what has been specifically agreed to by BSCDCL in its Letter of Intent. Any matter inconsistent therewith, contrary or repugnant thereto or deviations taken by the Contractor in its "TENDER" but not agreed to specifically by BSCDCL in its Letter of Intent, shall be deemed to have been withdrawn by the Contractor without any cost implication to BSCDCL. For the sake of brevity, this Agreement along with its aforesaid contract documents and Letter of Intent shall be referred to as the "Contract".

### **ARTICLE 3.0 – CONDITIONS & CONVENANTS**

The scope of Contract, Consideration, terms of payments, advance, security deposits, taxes wherever applicable, insurance, agreed time schedule, compensation for delay and all other terms and conditions contained in BSCDCL's Letter of Intent No. \_\_\_\_\_ dated \_\_\_\_\_ are to be read in conjunction with other aforesaid contract documents. The contract shall be duly performed by the contractor strictly and faithfully in accordance with the terms of this contract.

The scope of work shall also include all such items which are not specifically mentioned in the Contract Documents but which are reasonably implied for the satisfactory completion of the entire scope of work envisaged under this contract unless otherwise specifically excluded from the scope of work in the Letter of Intent. Contractor shall adhere to all requirements stipulated in the Contract documents. Time is the essence of the Contract and it shall be strictly adhered to. The progress of work shall conform to agreed works schedule/contract documents and Letter of Intent.

This agreement constitutes full and complete understanding between the parties and terms of the presents. It shall supersede all prior correspondence to the extent of inconsistency or repugnancy to the terms and conditions contained in Agreement. Any modification of the Agreement shall be effected only by a written instrument signed by the authorized representative of both the parties.

The total contract price for the entire scope of this contract as detailed in Letter of Intent is Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only), which shall be governed by the stipulations of the contract documents.

### **ARTICLE 4.0 – NO WAIVER OF RIGHTS**

Neither the inspection by BSCDCL or the Engineer-in-Charge or Owner or any of their officials, employees or agents nor order by BSCDCL or the Engineer-in-Charge for payment of money or any payment for or acceptance of, the whole or any part of the work by BSCDCL or the Engineer-in-Charge nor any extension of time nor any possession taken by the Engineer-in-Charge shall operate as waiver of any provisions of the contract, or of any power herein reserved to BSCDCL, or any right to damage herein provided, nor shall any waiver of any breach in the contract be held to be a waiver or any other or subsequent breach.

**ARTICLE 5.0 – GOVERNING LAW AND JURISDICTION**

The Laws applicable to this contract shall be the laws in force in India and jurisdiction of BHOPAL Court (s) only.

**Notice of Default**

Notice of default given by either party to the other party under the Agreement shall be in writing and shall be deemed to have been duly and properly served upon the parties hereto, if delivered against acknowledgment due or by FAX or by registered mail duly addressed to the signatories at the address mentioned herein above.

IN WITNESS WHEREOF, the parties through their duly authorized representatives have executed these presents (execution whereof has been approved by the Competent Authorities of both the parties) on the day, month and year first above mentioned at BHOPAL.

For and on behalf of:

For and on behalf of:

(NAME OF CONTRACTOR) (M/s Bhopal Smart City Development Corporation)

WITNESS:

WITNESS:

1.

1.

**FORM 7 - FORM OF POWER OF ATTORNEY FOR SIGNING THE BID DOCUMENTS**

*(On a Stamp Paper of relevant value)*

Know all men by these presents, we, ..... (name of Contractor and address of the registered office) do hereby irrevocably constitute, nominate, appoint and authorize Mr / Ms..... son/daughter/wife of ..... and presently residing at ....., who is presently employed with us and holding the position of ..... as our true and lawful attorney (hereinafter referred to as the “Attorney”) to do in our name and on our behalf, all such acts, deeds and things as are necessary or required in connection with or incidental to submission of bid for the for “Visual Improvement/Augumentaion of street/colony by Architecture Redesigning of Footpath & Utility Duct, Road Markings, Directional signages, Landscaping/Horticulture works and other Miscellaneous works including O&M of Tendered works for Period of Two Years under “SMART CITY MISSION” on design Procurement and Construction Basis at different places of Bhopal city” being developed by the BSCDCL including but not limited to signing and submission of all applications, proposals/bids and other documents and writings, participating in pre-bid and other conferences and providing information/ responses to BSCDCL, representing us in all matters before BSCDCL, signing and execution of all contracts and undertakings consequent to acceptance of our proposal and generally dealing with BSCDCL in all matters in connection with or relating to or arising out of our Proposal for the said work and/or upon award thereof to us till the entering into of the agreement with BSCDCL.

AND GENERALLY to act as our Attorney or agent on behalf of us in relation to the bid for “Visual Improvement of Roads consisting of Up gradation, Augmentation, Foot path & Cycle track works, Utility Duct, Road Markings,Street Furniture, Traffic signage, Bus Shelter, Vending Kiosk,Street Landscaping works and other Miscellaneous works along with Operation and Maintenance of Tendered works for Period of Five Years Under “SMART CITY MISSION” on Prepartion of Working Drawings, Procurement and Construction Basis (and to execute and do all instruments, acts, deeds, matters and things in relation to the said Proposal or any incidental or ancillary activity, as fully and effectually in all respects as we could do if personally present.

AND We hereby agree to ratify and confirm and agree to ratify and confirm all acts, deeds and things whatsoever lawfully done or caused to be done by our said Attorney and that all acts, deeds and things done by our said Attorney in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us.

IN WITNESS WHEREOF WE, ..... THE ABOVE NAMED PRINCIPAL HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS ..... DAY OF ....., 2017

For

.....

(Signature, name, designation and address)

Witness

- 1.
- 2.

Notarized

Accepted

-----

(Signature, name, designation and address of the Attorney)

**AFFIDAVIT \*(Black listing)**

- 1. I, the undersigned, do hereby certify that all the statements made in the Tender document are true and correct.
- 2. The undersigned also hereby certifies that neither our firm M/s. \_\_\_\_\_ nor any of its constituent partners are blacklisted by any of the Govt./Semi Govt. institutions and not have abandoned any work of buildings / Infrastructures works in India nor any contract awarded to us for such works have been rescinded, during last five years prior to the date of this application.

\_\_\_\_\_  
Signed by an Authorized Officer of the Firm

\_\_\_\_\_  
Title of Officer

\_\_\_\_\_  
Name of Firm

\_\_\_\_\_  
Date



**SECTION-6**

**SPECIAL CONDITION  
OF CONTRACT (SCC)**

## **SPECIAL CONDITIONS OF CONTRACT (SCC)**

- 6.1 The following special conditions shall be read in conjunction with General conditions of contract. If there are any provisions in these Special Conditions, which are at variance with the provisions of General Conditions of Contract, the provisions in the Special Conditions shall take precedence.
- 6.2 Where any portion of Special Conditions of Contract is repugnant to or at variance with any provision of the instructions to Bidder and General Conditions of Contract and / or the other documents forming part of the contract then unless a different intention appears the provision of the Special Conditions of Contract shall be deemed to override the provisions of the general conditions of contract and / or the other documents forming part of the contract only to the extent such repugnant/various in the special conditions of contract as are not possible of being reconciled with the provisions in the special conditions of contract as are not possible of being reconciled with the provision with instructions to Bidder or General Conditions of contract and / or the other documents from part of the contract.
- 6.3 Working drawing shall be according to the drawing given in the Tender document.
- 6.4 Items mentioned in the BOQ may vary or any changes are needed then it should bring to the attention of BSCDCL.
- 6.5 Working drawings are given by BSCDCL in tender document; if any deviations found and correction required then it should be brought to BSCDCL for rectification.
- 6.6 The items which are missing or not defined in the given BOQ in this Tender Document, then the contractor has to submit the items for approval to BSCDCL.
- 6.7 The contractor has to submit sample of the items defined in BOQ the same to be Approved by BSCDCL, before use. BSCDCL will depute special team to expedite document approval process, and same will be approved at reasonable time, if submitted with maintaining quality as per Scope and specification
- 6.8 It is Item rate tender bidder should quote percentage above or below of PAC.
- 6.9 Contractors shall construct/ refurbish Store, Cement Godown, Lab, Office for their use or shall make for BSCDCL. The space shall be provided by BSCDCL. It is assumed that the parties submitting their offers are well aware about the site conditions, nature of work to be carried out etc. Non familiarity with site conditions shall not attract or construed any increase in the rates after acceptance of the offer.
- 6.10 The rates quoted by the party shall be inclusive of service charge, Service tax and other statutory benefits given to the personnel as per labour laws.
- 6.11 The rates quoted by the party shall be firm for acceptance for a period of 120 days from the date of submission of quotation.
- 6.12 The work has to be carried out in neat and tidy manner to the satisfaction of the In-charge and all care has to be taken to ensure that no part of the cycle track get damage during execution of works. Materials used for carrying out the work shall be of standard quality
- 6.13 Amount shall be released after completion of work in all respect and as per actual quantum of work executed. Necessary statutory deduction as applicable shall be effected from the payment. No advance payment whatsoever shall be made.

- 6.14 Security deposit @ 5% of the bill value done shall be retained by the Corporation from the each bill and same shall be released to them within 90 days after completion of the tenure .
- 6.15 The personnel deployed by the party shall always remain employee of the party and in no case or circumstances whatsoever shall claim to be employee of the BSCDCL.
- 6.16 The party shall be fully responsible for any damage or injuries happens to their workmen deployed for carrying out the work at site and BSCDCL has nothing to do with the same. The party shall also be fully responsible for compliance of all statutory labour laws like ESI, PF, insurance etc. as per prevailing norms and BSCDCL shall in no way be held responsible for non-adherence of the same by the party.
- 6.17 The quotation submitted should be valid for a period of 90 days from the last date of opening of quotation. The rate quoted shall be valid for a period of 2 years from the first cleaning.
- 6.18 The work shall be carried-out in the cycle track area and hence party shall take all necessary safety precautions during execution of the works and ensure that no un-due disturbances caused to the people.
- 6.19 The party has to submit their credentials by giving the details of the works where they are carrying out AMC work with name of contact person and their telephone number.
- 6.20 The EMD deposited by the successful party shall be converted into security deposit. The EMD of the rest of parties will be refunded after award of the contract to successful party.
- 6.21 The AMC shall be initially for a period of two year which may be extended for further on the same terms conditions and based upon the satisfactory performance of the party. However, the Corporation shall have the sole discretion for extending the AMC period.
- 6.22 If the party fails to undertake the job satisfactorily or violates the terms conditions or not attending the work effectively, the corporation has every right to cancel the contract and forfeit the security deposit without assigning any reason what so ever.
- 6.23 The party will be responsible for all his employees in observing security and safety regulations and instructions as may be issued by the BSCDCL Office from time to time.
- 6.24 The party shall employ only adult trained, efficient and responsible staff with good health and sound mind for Cleaning .
- 6.25 In case the any material/property of Cycle track are damaged due to misuse or mishandling or carelessness by the Contractor or his employees, the Contractor will immediately inform the Engineer in charge. In such a case, the Contractor will be liable to replace the item at his own cost or the BSCDCL shall have the right to recover the loss from the Contractor's monthly bill.
- 6.26 The personnel deployed by the party shall perform their duties with due diligence and sincerity and shall not indulge in any unethical practices. If it is noticed that the personnel are involved in unethical practices, they shall be immediately replaced with suitable alternative without hampering the work
- 6.27 After acceptance of the offer of the party, the party has to enter into an agreement with BSCDCL on non-judicial stamp paper of Rs. 100/- or requisite value whichever is higher, within 10 days from the confirmation of acceptance. The cost of the non-judicial stamp paper shall be borne by the party.
- 6.28 The party agrees that they are an independent business entity and not an employee or agent of BSCDCL. The party further agrees that it is their sole duty to discharge all their legal and

statutory responsibility including those mentioned herein irrespective of any factor or reason attributable to BSCDCL bear no responsibility whatsoever for any liabilities for legal or statutory matter.

- 6.29 The necessary statutory deduction as applicable shall be deducted from the amount payable to the party and it is mandatory on the part of party to provide PAN number, Goods & Service tax registration number etc. whenever asked for.
- 6.30 The party has to accept and are fully responsible for all the liabilities arising out with regard to any compensations /remunerations under any Statutory bodies of whatsoever nature of any major or minor or fatal accident or incident occurred /sustained by their personnel posted at BSCDCL site, during the course of discharge of their duties
- 6.31 The party shall be fully responsible to safeguard the equipment, materials, assets and other properties during their presence. The BSCDCL has every right to recover the amounts from the party for any damages which arise due to negligence operation.
- 6.32 The party shall not involve themselves in any manner which is detrimental to the BSCDCL interest or associated themselves in any capacity with BSCDCL employees. The personnel deployed by the party shall be disciplined by observing all rules and regulations of BSCDCL. In case of noncompliance, BSCDCL reserves the right to terminate the contract without any notice and recovery of the damages shall be effected from the amount payable to the party.
- 6.33 The performance of the firm shall be reviewed in every quarter and if the performance is not found satisfactorily, the contract will be terminated by giving 30 days' notice.

**Signature of the Contractor**

**SECTION-7**

**SCOPE OF WORK,**

**AND**

**TECHNICAL**

**SPECIFICATIONS**

## SCOPE OF WORK

The work to be carried out under this contract shall consist of various items as generally described in Tender Documents. The works under Contract comprises the construction of proposed improvement of roads, Junction, drainage works, construction of utility ducts, cross drains, culverts, foot path, cycle track, development of parking areas & bus bays, Street landscaping, Street Furniture, Miscellaneous works and Maintenance of Tendered works for Period of two years

The Work Shall be executed on Preparation of working Drawing, design, Procurement and Construction Basis. Details and drawings given in Tender document is for information purpose only and successful bidder shall undertake confirmatory survey for accuracy and completeness of data. It is in scope of successful Bidder to undertake all Site surveys, Geotechnical investigations, Underground Utility Survey and Scanning of the roads for utility shifting, obtaining all required approvals from the relevant authorities, Carry out Design and Drawings for all the components of the work as per Employers requirement and submit the same to client for review and approval, Prepare Good for Construction design AND Drawings, submit maintenance manual to client for approval before start of Maintenance period.

The successful bidder shall have to prepare and submit 'As Built Drawings' depicting the exact construction carried out on site, in soft and hard copy format. Statutory and other charges for getting various required approvals shall be in scope of Successful bidder. The scope of work also includes :

### 1.1 Construction and completion of the following

- a. Surveying, Designing, Engineering, Procurement, Site clearance, demolition works, earthworks, survey temporary works, traffic diversion, barricading the construction site, utility shifting and all ancillary works deemed necessary for the carrying out of temporary & permanent construction works.
- b. Widening/ re-cambering/ raising/ miling down & overlaying of existing carriageways, flexible/ rigid pavement at grade road intersections & accesses to adjoining developments. Work also includes removal of street furniture, exiting foot path, existing median, exiting signages, trees if any way of revised ROW, existing structures that obstruct the revised ROW as per instruction of BSCDCL.
- c. Tree cutting (if any) as indicated in the drawings.
- d. Construction of Utility ducts, cross drains as per approved drawing.
- e. Retrofitting the existing roads as per the proposed road sections wrt carriageways, provision of footpath, cycle track, services lanes.
- f. Installing RPM, making road markings along the road edge, road center line & as per IRC guidelines, bus stop marking, cycle track marking, construction of medians & speed breakers, & junction improvements as per the drawings & in accordance with the Employer's requirements and to the satisfaction of the Engineer in charge.
- g. Construction of footpaths, kerbs, railings, vehicular impact guardrails and other road related facilities as per the guidelines of IRC in accordance with the Employer's requirements and to the satisfaction of the Engineer in charge.
- h. Supply and installation of new traffic signage, directional signage, street name signs & re-sitting of such existing signs & other road signs to be retained, inclusive of support & foundation as per Employers Requirement.
- i. Supply & installation of street furniture seating bench, planter box, bollards, cycle hoops, advertisement/ branding/ wayfinding boards & poles in accordance with the Employer's requirements and to the satisfaction of the Engineer in charge.
- j. Planting of trees, shrubs and installation of lawns as a part of Landscape work & installation of services for the same, as per the drawing in accordance with the Employer's requirements and to the satisfaction of the Engineer in charge.

k. All other works and services ancillary or related to the full completion of the Works in accordance with the Employer's requirement

1.2 The Contractor shall ascertain, determine and verify the locations of all utility services by scanning the roads in the vicinity of the works, and co-ordinate with utility agencies for the diversion of affected services and the laying of new services. The Contractor shall support and protect services that need not be diverted or pending diversion and remove all abandoned services. Contractor shall be responsible for relocation, reconstruction, reconfiguration of driveways, site accesses, temporary and permanent drains, pipe conduits and necessary connections for public lighting and traffic lighting, earth works, turfing, environmental assessments, necessary safety measures and protection works, sewer lines etc

1.3 The Contractor's responsibility for the design and build works includes the submissions to relevant government authorities / technical departments for obtaining all necessary clearances/approvals.

1.4 The Contractor shall co-ordinate and interfaces his works with that of all other contractors, subcontractors, utility services, statutory authorities, etc. and achieve the completion of the Works to the satisfaction of the Engineer

1.5 The Contractor shall verify the proposed road reserve, cadastral boundary and contract boundary and all dimensions on Site prior to submission of Tender. The Contractor is responsible for clarifying any discrepancy between the Drawings and actual condition on Site.

1.6 The Contractor shall make good all works including road surfaces, drains, concrete slabs, gratings, kerbs, pavements, turfing, railing, fence, boundary wall, etc. affected or damaged during the course of construction, to the satisfaction of the Engineer. The costs of making good all these defects shall be borne solely by the Contractor and deemed included in his Contract Sum

1.7 All works specified shall include the provision of all labour, tools, equipment, material, traffic control, transport and everything else necessary for the satisfactory completion of the Work by the Contractor to the satisfaction of the Engineer.

1.8 Description of the Works involved in this Contract is given in the Specifications for the guidance of the Contractor. The Contractor shall be solely and fully responsible for investigating and ensuring the actual extent and nature of the Works comprised in this Contract prior to submission of his Tender.

1.9 Construction, management and quality of the Works shall comply with the Drawings, Specifications and Employers requirement

2.10 The entire area shall be maintain by the developer (Successful bidder) for a period of two years of the completion of work

2.11 The individual project shall be given completion, their shall be defect liability period of two (2) years.

The work to be carried out under this contract shall consist of various items as generally described in Tender Documents The works under Contract comprises the construction of proposed improvement of roads, Junction, drainage works, construction of utility ducts, cross drains, culverts, foot path, cycle track, development of parking areas & bus bays, Street landscaping, Street Furniture, Miscellaneous works and Maintenance of Tendered works for Period of two years

The Work Shall be executed on Preparation of Working Drawings, Procurement and Construction Basis. Details and drawings given in Tender document is for information purpose only and successful bidder shall undertake confirmatory survey for accuracy and completeness of data. It is in scope of successful Bidder to undertake all Site surveys, Geotechnical investigations, Underground Utility Survey and Scanning of the roads for utility shifting, obtaining all required approvals from the relevant authorities, Carry out Design and Drawings for all the components of the work as per Employers requirement and submit the same to client for

review and approval, Prepare Good for Construction Drawings, submit maintenance manual to client for approval before start of Maintenance period.

The successful bidder shall have to prepare and submit 'As Built Drawings' depicting the exact construction carried out on site, in soft and hard copy format. Statutory and other charges for getting various required approvals shall be in scope of Successful bidder The scope of work also includes :

1.1 Construction and completion of the following

- a. Site clearance, demolition works, earthworks, temporary works, traffic diversion, barricading the construction site, utility shifting and all ancillary works deemed necessary for the carrying out of temporary & permanent construction works.
- b. Widening/ re-cambering/ raising/ milling down & overlaying of existing carriageways, flexible/ rigid pavement at grade road intersections & accesses to adjoining developments. Work also includes removal of street furniture, existing foot path, existing median, existing signages, trees if any way of revised ROW, existing structures that obstruct the revised ROW as per instruction of BSCDCL.
- c. Tree cutting (if any) as indicated in the drawings.
- d. Construction of Utility ducts, cross drains as per approved drawing.
- e. Retrofitting the existing roads as per the proposed road sections wrt carriageways, provision of footpath, cycle track, services lanes.
- f. Installing RPM, making road markings along the road edge, road center line & as per IRC guidelines, bus stop marking, cycle track marking, construction of medians & speed breakers, & junction improvements as per the drawings & in accordance with the Employer's requirements and to the satisfaction of the Engineer in charge.
- g. Construction of footpaths, kerbs, railings, vehicular impact guardrails and other road related facilities as per the guidelines of IRC in accordance with the Employer's requirements and to the satisfaction of the Engineer in charge.
- h. Supply and installation of new traffic signage, directional signage, street name signs & re-sitting of such existing signs & other road signs to be retained, inclusive of support & foundation as per Employers Requirement.
- i. Supply & installation of street furniture seating bench, planter box, bollards, cycle hoops, advertisement/ branding/ wayfinding boards & poles in accordance with the Employer's requirements and to the satisfaction of the Engineer in charge.
- j. Planting of trees, shrubs and installation of lawns as a part of Landscape work & installation of services for the same, as per the drawing in accordance with the Employer's requirements and to the satisfaction of the Engineer in charge.
- k. All other works and services ancillary or related to the full completion of the Works in accordance with the Employer's requirements

1.2 The Contractor shall ascertain, determine and verify the locations of all utility services by scanning the roads in the vicinity of the works, and co-ordinate with utility agencies for the diversion of affected services and the laying of new services. The Contractor shall support and protect services that need not be diverted or pending diversion and remove all abandoned services. Contractor shall be responsible for relocation, reconstruction, reconfiguration of driveways, site accesses, temporary and permanent drains, pipe conduits and necessary connections for public lighting and traffic lighting, earth works, turfing, environmental assessments, necessary safety measures and protection works, sewer lines etc

1.3 The Contractor's responsibility for the design and build works includes the submissions to relevant government authorities / technical departments for obtaining all necessary clearances/approvals.

1.4 The Contractor shall co-ordinate and interfaces his works with that of all other contractors, subcontractors, utility services, statutory authorities, etc. and achieve the completion of the Works to the satisfaction of the Engineer



1.5 The Contractor shall verify the proposed road reserve, cadastral boundary and contract boundary and all dimensions on Site prior to submission of Tender. The Contractor is responsible for clarifying any discrepancy between the Drawings and actual condition on Site.

1.6 The Contractor shall make good all works including road surfaces, drains, concrete slabs, gratings, kerbs, pavements, turfing, railing, fence, boundary wall, etc. affected or damaged during the course of construction, to the satisfaction of the Engineer. The costs of making good all these defects shall be borne solely by the Contractor and deemed included in his Contract Sum

1.7 All works specified shall include the provision of all labour, tools, equipment, material, traffic control, transport and everything else necessary for the satisfactory completion of the Work by the Contractor to the satisfaction of the Engineer.

1.8 Description of the Works involved in this Contract is given in the Specifications for the guidance of the Contractor. The Contractor shall be solely and fully responsible for investigating and ensuring the actual extent and nature of the Works comprised in this Contract prior to submission of his Tender.

1.9 Construction, management and quality of the Works shall comply with the Drawings, Specifications and Employers requirement

2.12 The entire area shall be maintained by the developer (Successful bidder) for a period of two years of the completion of work

2.13 The individual project shall be given completion, their shall be defect liability period of two (2) years.

The works under Contract comprises the construction of proposed improvement of roads, Junction, drainage works, construction of utility ducts, cross drains, culverts, foot path, cycle track, development of parking areas & bus bays, Street landscaping, Street Furniture, Miscellaneous works and Maintenance of Tendered works for Period of Two years

The Work Shall be executed on Architectural design, Preparation of Working Drawings, Procurement and Construction Basis. Details and drawings given in Tender document is for information purpose only and successful bidder shall undertake confirmatory survey for accuracy and completeness of data. It is in scope of successful Bidder to undertake all Site surveys, Geotechnical investigations, Underground Utility Survey and Scanning of the roads for utility shifting, obtaining all required approvals from the relevant authorities, Carry out Design and Drawings for all the components of the work as per Employers requirement and submit the same to client for review and approval, Prepare Good for Construction Drawings, submit maintenance manual to client for approval before start of Maintenance period.

The successful bidder shall have to prepare and submit 'As Built Drawings' depicting the exact construction carried out on site, in soft and hard copy format.

Statutory and other charges for getting various required approvals shall be in scope of Successful bidder.

1.1 Deleted

1.2 The Contractor shall ascertain, determine and verify the locations of all utility services by scanning the roads in the vicinity of the Works, and co-ordinate with utility agencies for the diversion of affected services and the laying of new services. The Contractor shall support and protect services that need not be diverted or pending diversion and remove all abandoned services. Contractor shall be responsible for relocation, reconstruction, reconfiguration of driveways, site accesses, temporary and permanent drains, pipe conduits and necessary connections for public lighting and traffic lighting, earth works, turfing, environmental assessments, necessary safety measures and protection works, sewer lines etc

1.3 The Contractor's responsibility for the design and build works includes the submissions to relevant government authorities / technical departments for obtaining all necessary clearances/approvals.

1.4 The Contractor shall co-ordinate and interfaces his works with that of all other contractors, subcontractors, utility services, statutory authorities, etc. and achieve the completion of the Works to the satisfaction of the Engineer

1.5 The Contractor shall verify the proposed road reserve, cadastral boundary and contract boundary and all dimensions on Site prior to submission of Tender. The Contractor is responsible for clarifying any discrepancy between the Drawings and actual condition on Site.

1.6 The Contractor shall make good all works including road surfaces, drains, concrete slabs, gratings, kerbs, pavements, turfing, railing, fence, boundary wall, etc. affected or damaged during the course of construction, to the satisfaction of the Engineer. The costs of making good all these defects shall be borne solely by the Contractor and deemed included in his Contract Sum

1.7 All works specified shall include the provision of all labour, tools, equipment, material, traffic control, transport and everything else necessary for the satisfactory completion of the Work by the Contractor to the satisfaction of the Engineer.

1.8 Description of the Works involved in this Contract is given in the Specifications for the guidance of the Contractor. The Contractor shall be solely and fully responsible for investigating and ensuring the actual extent and nature of the Works comprised in this Contract prior to submission of his Tender.

1.9 Construction, management and quality of the Works shall comply with the Drawings, Specifications and Employers requirement

## **B. CONTRACTOR'S OBLIGATION**

1.1 The Contractor shall submit Architectural design, Preparation of Working Drawings, Procurement and Construction of various projects.

### **1.2 SETTING OUT AND EXISTING LEVELS**

DELETED

### **1.3 DESIGN OF WORKS :**

The Contractor shall carry out, and be responsible for the design of the Works, including any site surveys, subsoil investigations, materials testing, and all other things necessary for proper planning and design.

With 10 days from Award of work, the Contractor shall start submitting drawings, construction documents, etc., for review and approval by the Employer's Representative. The Contractor will be fully responsible for ensuring that its designs, drawings, and construction documents satisfy all requirements for constructing Works that are complete and fully functional in all respects.

The Contractor shall prepare, and keep up-to-date, a complete set of "as-built" records of the execution of the Works, showing the exact as-built locations, sizes and details of the work as executed. These records shall be kept on the Site and Two sets of such records shall be Submitted to Employer.

In addition, the Contractor shall supply to the Employer's Representative as-built drawings of the Works, showing all Works as executed.

#### **1.4.2 Programme Details**

The level of programme development, information and detail shall be sufficient to accurately define the Contractor's intentions and sequence of works. The programme shall show every significant activity required for the completion of the Contract that include but not limited to the following:

- a. key dates, milestones, interface and handover dates, phased completion and completion of Whole of the Works;
- b. Contractor's design including dates for submission to and acceptance by the Engineer;
- c. submission and acceptance of road diversion plan, utilities diversion plan, Temporary Works and other works requiring approvals from authorities;
- d. procurement of major equipment and material, in particular long lead items and the delivery to site;
- e. all on-site works, including preliminary and Temporary Works by the Contractor, is sub-contractors and suppliers;
- f. any off-site work such as the production and/or fabrication of any components or materials;
- g. the different stages of traffic diversion and specific requirements with regard to traffic aspects as given in this Specification;
- h. interface with Utility Agencies and work done by Utility Agencies or the Contractor for diversion;
- i. interface with other contracts/contractors; and
- j. any outside influence which will or may affect the progress of Works

#### **1.5 SITE MEETINGS**

The Contractor shall provide all facilities at the site for the purpose of conducting joint site meetings between the Contractor and the Engineer. The Contractor's key representatives (Project Manager, Construction Managers, Safety and Health Officer, Environmental Control Officer and site engineers, etc.) are required to attend daily pre-work meeting punctually prior to commencement of site activities and submit daily and weekly works programme to the Engineer (or his representatives).

#### **1.7.1 Diversion and Maintenance of Existing Drains**

Upon award of the contract and prior to the commencement of the works, the contractor shall submit to the engineer his proposal for the diversion and maintenance of existing drains for the whole period of construction to the engineer and respective authority for approval.

The contractor shall be responsible for the maintenance of the free flow of the drains at all times. At no time shall the contractor obstruct or reduce the free flow area of the existing canal / drain without the prior approval of the engineer and respective authority.

If, in the opinion of the engineer, the contractor has not carried out or is unable to carry out such maintenance of temporary drain diversion to his satisfaction, the engineer reserves the right to employ others to carry out such works and deduct the cost of all such works from any money due to or to become due to the contractor.

The contractor shall remove all temporary works as soon as these are no longer required and reinstate the site to its original condition to the satisfaction of the engineer and respective authority.

The contractor shall take all necessary precautions to prevent any damage to the existing culverts and drains. Existing drains/culverts/sumps etc. Made redundant when the new drains / culverts sumps are completed, shall be completely removed and filled with suitable materials to the satisfaction of the Engineer

### **1.8 Interface with Government Authorities / Consultants / Contractors / Vendors**

Contractor shall Coordinate with Various Government Authorities / Agencies , State Electricity Board, ICT Consultant, ICT Contractor, various other Contractors / Vendors engaged by Employer for this Project for finalizing the Drawings, Implementation Schedule, shifting and Alignment of Utilities, for Proper Execution of works. All the Statutory Charges/ Fees. etc required for the same shall be borne by the Contractor.

Interface Matrix is given as a Guideline to the Contractor, However it is in the scope of Contractor to coordinate with all Relevant Authorities for Proper Execution and Completion of Works

### **1.9 Operation & maintenance Requirement**

During Operation & Maintenance period, it shall be the responsibility of the contractor to clean the roads, footpaths, dividers, cat's eyes, maintain the footpaths, dividers, kerb, signage and street furniture, road markings, pedestrian crossings, tree / shrub cutting, minor or major maintenance of arboriculture etc at an acceptable serviceability level as directed by the Engineer in charge. Before Commencement of Operation & maintenance Period, the Contractor shall submit Operation & Maintenance manual to BSCDCL for approval. BSCDCL shall review and finalize Operation and Maintenance requirements to be carried out by the Contractor. Operation & maintenance period will commence only after getting approval to Operation & Maintenance manual from BSCDCL. During the operation and maintenance period contractor shall provide a supervisor level staff for attending to all the O& M activities during the O&M Period. All the Operation and Maintenance obligations as approved by BSCDCL shall be carried out by the Contractor. The contractor shall carry out the two coat painting of all kerbs, dividers, street furniture (where applicable) twice annually and once annually for the Road markings. The monthly report on the Operation and Maintenance shall be submitted to the Engineer and Quarterly payment for O& M as per the BOQ shall be released to the contractor based on the work carried out by him and assessment by the Engineer in charge. BSCDCL reserves the right for reduction in such payments, for any delay in attending the Maintenance obligation within the stipulated time as approved by BSCDCL.

### **1.10 Design and Drawings to be submitted for review and Approval**

On Award of work the Contractor shall submit the design and Drawing for review and approval. Contractor shall not limit himself to the same but it is in scope of Contractor to submit all required design and Drawings for review and approval as per Instruction from Engineer-In-Charge

#### **D. SPECIFICATIONS**

##### **1.1. PREAMBLE**

This section contains the specifications for proposed work and shall be read in conjunction with the various other sections forming the Contract namely, Instructions to Bidder, General Conditions, Special Conditions, Bill of Quantities, Drawings and other related documents mentioned in this Tender Document together with any Addendum issued thereto.

The General Technical Specifications comprise the “Specification for Road and Bridge Works” (Fifth Revision) issued by the Ministry of Road Transport and Highways (MORT&H) Government of India and published by the Indian Road Congress, New Delhi, Latest specifications Latest Specifications of CPWD, Specifications as per Tender Documents and as Approved by Engineer-In-Charge.

#### **1.1.1 A1 : Demolition & other works**

Removal of existing street furniture, foot path, manhole covers, existing median, existing signages, trees if any way as per revised ROW, existing structures that obstruct the revised ROW. Item also includes all materials, labour, equipments, dismantling, transportation & disposing where required etc. complete.

#### **1.1.2 CLEARING AND GRABBING**

##### **1.1.2.1.1 Scope**

This work shall consist of cutting, removing and disposing of all materials such as trees, bushes, shrubs, stumps, roots, grass, weeds, top organic soil not exceeding 150 mm in thickness, Rubbish etc., which in the opinion of the Site Engineer are unsuitable for incorporation in the works, from the area of road land containing road embankment, drains, cross-drainage structures and such other areas as may be specified on the drawings or by the Engineer., It shall include necessary excavation, backfilling of pits resulting from uprooting of trees and stumps to required compaction, handling, salvaging, and disposal of cleared materials. Clearing and grubbing shall be performed in advance of earthwork operations and in accordance with the requirements of these Specifications.

##### **1.1.2.1.2 Preservation of Property/Amenities**

Roadside trees, shrubs, any other plants, pole lines, fences, signs, monuments, buildings, pipelines, sewers and all highway facilities within or adjacent to the highway which are not to be disturbed shall be protected from injury or damage. The Contractor shall provide and install at his own expense, suitable safeguards approved by the Engineer for this purpose.

During clearing and grubbing, the Contractor shall take all adequate precautions against soil erosion, water pollution, etc., and where required, undertake additional works to that effect Specs, Before start of operations, the Contractor shall submit to the Engineer for approval, his work plan including the procedure to be followed for disposal of waste materials, etc., and the schedules for carrying out temporary and permanent erosion control works

##### **1.1.2.1.3 Methods, Tools and Equipments**

Only such methods, tools and equipment as are approved by the Engineer and which will not affect the property to be preserved shall be adopted for the Work. If the area has thick Vegetation/roots/trees, a crawler or pneumatic tyred dozer of adequate capacity may be used for clearance purposes. The dozer shall have ripper attachments for removal of tree stumps. All trees, stumps, etc., falling within excavation and fill lines shall be cut to such depth below ground level that in no case these fall within 500 mm of the sub-grade. Also, all vegetation such as roots, under- growth, grass and other deleterious matter unsuitable for incorporation in the embankment/sub- grade shall be removed between fill lines to the satisfaction of the Engineer. On areas beyond these limits, trees and stumps required to be removed as directed by the Engineer shall be cut down to 1 m below ground level so that these do not present an unsightly appearance. All branches of trees extending above the roadway shall be trimmed as directed by the Engineer-in- Charge

All excavations below the general ground level arising out of the removal of trees, stumps, etc., shall be filled with suitable material and compacted thoroughly so as to make the surface at these points conform to the surrounding area.

Ant-hills both above and below the ground, as are liable to collapse and obstruct free subsoil water flow shall be removed and their workings, which may extend to several meters, shall be suitably treated.

#### **1.1.2.1.4 Disposal of Materials**

All materials arising from clearing and grubbing operations shall be the property of client and shall be disposed of by the Contractor as hereinafter provided or directed by the Engineer.

Trunks, branches and stumps of trees shall be cleaned of limbs and roots and slacked. Also boulders, stones and other materials usable in road construction shall be neatly stacked as directed by the Engineer. Stacking of stumps, boulders, stones etc., shall be done at specified spots with all lifts and upto a lead of 1000 m.

All products of clearing and grubbing which, in the opinion of the Engineer, cannot be used or auctioned shall be cleared away from the roadside in a manner as directed by the Engineer. Care shall be taken to see that unsuitable waste materials are disposed of in such a manner that there is no likelihood of these getting mixed up with the materials meant for embankment, sub-grade and road construction.

### **1.3.2 C2 -CEMENT CONCRETE KERB AND KERB WITH CHANNEL**

#### **1.3.2.1.1 Scope**

This work shall consist of constructing cement concrete kerbs and kerbs with channel in the central median and/or along the footpaths specified in the drawings.

#### **1.3.2.1.2 Materials**

Kerbs and kerb with channel shall be provided in cement concrete of grade M20

#### **1.3.2.1.3 Type of Construction**

These shall be cast- in-situ construction with suitable kerb casting machine in all situations except at locations where continues casting with equipment is not practicable. In those situations, precast concrete blocks shall be used.

#### **1.3.2.1.4 Equipment**

A continuous kerb casting equipment of adequate capacity and controls, capable of laying the kerbs in required cross-sections and producing a well-compacted mass of concrete free of voids and honeycombs, shall be used.

#### **1.3.2.1.5 Construction operations**

- Kerbs shall be laid on firm foundation of minimum 150 mm thickness and extending minimum 100 mm beyond the kerb which may consist of extended width of pavement or concrete of M 15 grade cast in situ or bituminous premix material of the same Specification as the profile corrective course. Before laying ti-c foundation, its base shall be leveled, watered and compacted with plate

compactor/power rammer. In case of foundation consisting of granular material, the base of foundation shall be well compacted with plate compactor/power rammer and bituminous primer applied @ 14.6 kg/10 sq. m.

- In the median portions in the straight reaches, the kerb shall be cast in continuous lengths. In the portions where footpath is provided and/or the slope of the carriageway is towards median (as in case of super-elevated portions), there shall be sufficient gap/recess left in the kerb to facilitate drainage openings.
- After laying the kerbs and just prior to hardening of the concrete, saw-cut grooves shall be provided at 10 m intervals or as specified by the Engineer.
- Kerbs on the drainage ends such as along the footpath or the median in super elevated portions shall be cast with monolithic concrete channels as indicated in drawings. The slope of the channel towards drainage pipes shall be ensured for efficient drainage of the road surface. Vertical and horizontal tolerances with respect to true line and level shall be  $\pm 6$  mm.
- Measurements for Payment
- Cement concrete kerb/kerb with channel shall be measured in linear metre for the complete item of work. Foundation of kerb, where separately provided shall be measured in linear metre for complete item of work.

#### **1.3.2.1.6 Rate**

The Contract unit rates for cement concrete kerb with channel and foundation for kerb shall be payment in full compensation for furnishing all materials, labour, tools, equipment for construction and other incidental cost necessary to complete the work.

### **1.3.4 C4 - Kerb paint**

#### **1.3.4.1.1 Scope**

Painting two coats with Synthetic Enamel paint over a coat of enamel primer on concrete surface including cost, conveyance, taxes, of all materials, T&P, labour etc.

#### **1.3.4.1.2 Material –**

Synthetic Enamel paint of approved black & yellow color of Asian paint or equivalent brand

Application –

- Ensure that the road surface is clean, free from dust, oil and grease
- Heavy deposits of earlier paint or thermoplastic should be removed
- Wire brushing and water washing is recommended for removal of dust from road surface
- The surface should be thoroughly dry and free from moisture before painting
- Surface temperature must be at least 3°C above dew point but not above 50°C
- Do not paint at temperatures below 10°C or at relative humidity over 85%
- Under cold and humid conditions, the paint would require longer drying time
- Two coat application is recommended for optimum performance

<b>Brush</b>	Recommended thinner : Municipal/ Potable water Volume of Thinner : 5 - 15 %
<b>Air Spray</b>	Recommended Thinner : Municipal/ Potable water Volume of Thinner : 10 - 30 % Nozzle Orifice : 1.5 - 3.0 mm Nozzle Pressure : 0.3 - 0.4 MPa (=approx 3 - 4 atm; 43 - 57 p.s.i)
<b>Airless Spray</b>	Recommended Thinner : Municipal/ Potable water Volume of Thinner : 5 - 15 % Nozzle Orifice : 0.33 - 0.49 mm Nozzle Pressure : 12 - 15 MPa(=approx 120 - 150 atm; 1700 - 2100 p.s.i)

#### **1.3.4.1.3 Measurements for Payment**

Synthetic Enamel paint shall be measured on per litre basis along with the total running meter of kerb painted

#### **1.3.4.1.4 Rate**

The Contract unit rates for Enamel paint shall be payment in full compensation for furnishing all materials, labour, tools, equipment for construction and other incidental cost necessary to complete the work

### **1.3.5 D -Visual Improvement- Carpeting / Re-Carpeting of Roads**

#### **1.3.5.1.1 Scope**

Collecting, carting and stacking STONE DUST on road side as directed and flushing the same on Bituminous surfaces at the rate of 0.030 cmt. Per 10 smt. As directed by Engineer in charge. SCARIFYING the graveled macadam, bituminous macadam surface 6 cm. To 10 cm. Deep including cleaning and removal of loose and unsuitable material on the road surface, stacking the useful materials and disposing remaining stuff including loading and unloading and carting the same within city limit as directed by Engineer in charge.

Providing and applying evenly TACK COAT on road surface with bitumen 60/70 grade at the rate as specified below including heating the asphalt and spraying the same. Providing and laying 25mm to 100mm thick compacted BITUMINOUS CONCRETE using aggregates as per gradation and percentage of asphalt for mixing shall be as arrived from mix design, provided in no case asphalt percentage shall be less than 5.5 % by Wt. of total mix as binder by drum mix type hot mix plant and laying by sensor paver finisher including consolidation by vibrator roller including providing and operating plant, sensor paver and machinery, cost of fuel, oil, lubricant and labour charges including cost of asphalt, aggregate and filler ( if found required as per mix design)etc.complete (But excluding cost of providing & applying tack coat.) (Thickness - 50 mm compacted)

Providing and laying premix seal coat 15 mm thick for sealing the voids in the bituminous surface laid to specified levels, grade and cross fall using type B seal coat with bitumen grade 80/100 (VG-10) at 1.5 Kg/Sq.M.. and spreading grit, brushing, rolling, etc. complete as per clause No 513 of MoRTH specifications and as directed by Engineer In Charge.

#### **1.3.5.1.2 Materials**

Binder:



The binder shall be an appropriate type of bituminous material complying with the relevant Indian Standard (IS), as defined in the appropriate Clause (MORTH) of these Specifications, or as otherwise specified herein. The choice of binder shall be stipulated in the Contract or by the Engineer. Where penetration grades of bitumen are specified, they are referred to by a single- figure designation in accordance with IS:73. Thus bitumen grade 35 refers to bitumen in the penetration range 30 to 40. Where Modified Binder is specified, the Clause 5.21 of these Specifications shall apply.

**Coarse Aggregates:** The coarse aggregates shall consist of crushed rock, crushed gravel or other hard material retained on the 2.36 mm sieve. They shall be clean, hard, and durable, of cubical shape, free from dust and soft or friable matter, organic or other deleterious matter. Where the Contractor's selected sources of aggregates have poor affinity for bitumen, as a condition for the approval of that source, the bitumen shall be treated with approved anti-stripping agents, as per the manufacturer's recommendations, without additional payment. Before approval of the source the aggregates shall be tested for stripping.

The aggregates shall satisfy the physical requirements set forth in the individual relevant Clause (MORTH) for the material in question.

Where crushed gravel is proposed for use as aggregate, not less than 90% by weight of the crushed material retained on the 4.75 mm sieve shall have at least two fractured faces.

**Fine Aggregates:**

Fine aggregates shall consist of crushed or naturally occurring material, or a combination of the two, passing 2.36mm sieve and retained on the 75 micron sieve. They shall be clean, hard, durable, dry and free from dust, and soft or friable matter, organic or other deleterious matter.

**Source of material:**

The source of all materials to be used on the project must be tested to the satisfaction of and be expressly approved by the Engineer. The Engineer may from time to time withdraw approval of a specific source, or attach conditions to the existing approval. Any change in aggregate source for bituminous mixes, will require a new mix design, and laying trials, where the mix is based on a job mix design. Stockpiled from different sources, approved or otherwise, shall be kept separate, such that there is no contamination between one material and another. Each source submitted for approval shall contain sufficient material for at least 5 days work.

### **1.3.5.1.3 Mixing**

Pre-mixed bituminous materials, including bituminous macadam, dense bituminous macadam, semi-dense bituminous concrete and bituminous concrete, shall be prepared in a hot mix plant of adequate capacity and capable of yielding a mix of proper and uniform quality with thoroughly coated aggregates. Appropriate mixing temperatures can be found in Table 500-5 of these Specifications; the difference in temperature between the binder and aggregate should at no time exceed 14°C. In order to ensure uniform quality of the mix and better coating of aggregates, the hot mix plant shall be calibrated from time to time. If a continuous mixing-plant is to be used for mixing the bituminous bound macadam; the Contractor must demonstrate by laboratory analysis that the cold feed combined grading is within the grading limits specified for that bituminous bound material. In the case of a designed job mix, the bitumen and filler content shall be derived using this combined grading. Further details are available in the Manual for Construction and Supervision of Bituminous Works.

#### **1.3.5.1.4 Transporting**

Bituminous materials shall be transported in clean insulated vehicles, and unless otherwise agreed by the Engineer, shall be covered while in transit or awaiting tipping. Subject to the approval of the Engineer, a thin coating of diesel or lubricating oil may be applied to the interior of the vehicle to prevent sticking and to facilitate discharge of the material.

#### **1.3.5.1.5 Laying**

Weather and seasonal limitations:

Laying shall be suspended while free-standing water is present on the surface to be covered, or during rain, fog and dust storms. After rain, the bituminous surface, prime or tack coat, shall be blown off with a high pressure air jet to remove excess moisture, or the surface left to dry before laying shall start. Laying of bituminous mixtures shall not be carried out when the air temperature at the surface on which it is to be laid is below 10°C or when the wind speed at any temperature exceeds 40 km/h at 2m height unless specifically approved by the Engineer.

Cleaning of surface:

The surface on which the bituminous work is to be laid shall be cleaned of all loose and extraneous matter by means of a mechanical broom or any other approved equipment / method as specified in the contract. The use of a high pressure air jet from a compressor to remove dust or loose matter shall be available full time on the site, unless otherwise specified in the Contract.

Spreading:

Except in areas where a mechanical paver cannot access, bituminous materials shall be spread, leveled and tamped by an approved self-propelled paving machine. As soon as possible after arrival at site, the materials shall be supplied continuously to the paver and laid without delay

The rate of delivery of material to the paver shall be regulated to enable the paver to operate continuously. The travel rate of the paver, and its method of operations, shall be adjusted to ensure an even and uniform flow of bituminous material across the screen, free from dragging, tearing and segregation of the material. In areas with restricted space where a mechanical paver cannot be used, the material shall be spread, raked and levelled with suitable hand tools by experienced staff, and compacted to the satisfaction of the Engineer.

The minimum thickness of material laid in each paver pass shall be in accordance with the minimum values given in the relevant parts of these Specifications. When laying binder course or wearing course approaching an expansion joint of a structure, machine laying shall stop 300mm short of the joint. The remainder of the pavement up to the joint, and the corresponding area beyond it, shall be laid by hand, and the joint or joint cavity shall be kept clear of surfacing material.

Bituminous material, with a temperature greater than 145°C, shall not be laid or, deposited on bridge deck waterproofing systems, unless precautions against heat damage have been approved by the Engineer.

Hand placing of pre-mixed bituminous materials shall only be permitted in the following circumstances: For laying regulating courses of irregular shape and varying thickness.

In confined spaces where it is impracticable for a paver to operate. For footways. At the approaches to expansion joints at bridges, viaducts or other structures. For filling of potholes. Where directed by the Engineer.

Manual spreading of pre - mixed wearing course material or the addition of such material by hand-spreading to the paved area, for adjustment of level, shall only be permitted in the following circumstances:

At the edges of the layers of material and at gullies and manholes. At the approaches to expansion joints at bridges, viaducts or other structures. As directed by the Engineer.

Cleanliness and overlaying:

Bituminous material shall be kept clean and uncontaminated. The only traffic permitted to run on bituminous material to be overlaid shall be that engaged in laying and compacting the next course or, where a binder course is to be sealed or surface dressed, that engaged on such surface treatment. Should any bituminous material become contaminated the Contractor shall make it good to the satisfaction of the Engineer

Binder course material shall not remain uncovered by either the wearing course or surface treatment, whichever is specified in the Contract, for more than three consecutive days after being laid. The Engineer may extend this period, by the minimum amount of time necessary, because of weather conditions or for any other reason. If the surface of the base course is subjected to traffic, or not covered within three days, a tack coat shall be applied, as directed by the Engineer.

#### **1.3.5.1.6 Compaction**

Bituminous materials shall be laid and compacted in layers which enable the specified thickness, surface level, regularity requirements and compaction to be achieved.

Compaction of bituminous materials shall commence as soon as possible after laying. Compaction shall be substantially completed before the temperature falls below the minimum rolling temperatures stated in the relevant part of these Specifications. Rolling of the longitudinal joints shall be done immediately behind the paving operation. After this, rolling shall commence at the edges and progress towards the centre longitudinally except that on super elevated and unidirectional cambered portions, it shall progress from the lower to the upper edge parallel to the centre line of the pavement. Rolling shall continue until all roller marks have been removed from the surface. All deficiencies in the surface after laying shall be made good by the attendants behind the paver, before initial rolling is commenced. The initial or breakdown rolling shall be done with 8-10 tonnes dead weight smooth-wheeled rollers. The intermediate rolling, shall be done with 8-10 tonnes dead weight or vibratory roller or with a pneumatic tyred roller of 12 to 15 tonnes weight having nine wheels, with a tyre pressure of at least 5.6 kg/sqcm. The finish rolling shall be done with 6 to 8 tonnes smooth wheeled tandem rollers.

Where compaction is to be determined by density of cores the requirements to prove the performance of rollers shall apply in order to demonstrate that the specified density can be achieved. In such cases the Contractor shall nominate the plant, and the method by which he intends to achieve the specified level of compaction and finish at temperatures above the minimum specified rolling temperature. Laying trials shall then demonstrate the acceptability of the plant and method used. Bituminous materials shall be rolled in a longitudinal direction, with the driven rolls nearest the paver. The roller shall first compact material adjacent to joints and then work from the lower to the upper side of the layer, overlapping on successive passes by at least one-third of the width of the rear roll or, in the case of a pneumatic -tyred roller, at least the nominal

width of 300mm. In portions with super-elevated and uni-directional camber, after the edge has been rolled, the roller shall progress from the lower to the upper edge.

Rollers should move at a speed of not more than 5 km per hour. The roller shall not be permitted to stand on pavement which has not been fully compacted, and necessary precautions shall be taken to prevent dropping of oil, grease, petrol or other foreign matter on the pavement either when the rollers are operating or standing. The wheels of rollers shall be kept moist with water, and the spray system provided with the machine shall be in good working order, to prevent the mixture from adhering to the wheels. Only sufficient moisture to prevent adhesion between the wheels of rollers and the mixture should be used. Surplus water shall not be allowed to stand on the partially compacted pavement.

#### Joins

Where longitudinal joints are made in pre-mixed bituminous materials, the materials shall be fully compacted and the joint made flush in one of the following ways; only method (iii) shall be used for transverse joints:

By heating the joints with an approved joint beater when the adjacent width is being laid, but without cutting back or coating with binder. The heater shall raise the temperature of the full depth of material, to within the specified range of minimum rolling temperature and maximum temperature at any stage for the material, for a width not less, than 75 mm, The Contractor shall have equipment available, for use in the event of a beater breakdown, to form joints by method (iii);

By using two or more pavers operating in echelon, where this is practicable, and in sufficient proximity for adjacent widths to be fully compacted by continuous rolling;

By cutting back exposed for a distance equal to the specified layer thickness to vertical face, discarding all loosened material and coating the vertical face completely, with 80/100 penetration grade hot bitumen, or cold-applied bitumen, or polymer modified adhesive bitumen tape with a minimum thickness of 2 mm, before the adjacent width is laid.

All joints shall be offset at least 300 mm from parallel joints in the layer beneath or as directed, and in a layout approved by the Engineer. Joints in the wearing course shall coincide with either the lane edge or the lane marking, whichever is appropriate. Longitudinal joints shall not be situated in wheel track zones.

#### **1.3.5.1.7 Preparation of Surface**

##### Scope:

This work shall consist of preparing an existing granular Or black-topped surface bituminous course. The work shall be performed on such widths and lengths as shown on the drawings or as instructed by the Engineer. The existing surface shall be firm and clean, and treated with Prime or Tack coat as shown on the drawings as otherwise stated in the Contract.

##### Materials:

For scarifying and re-laying the granular surface: The material used shall be coarse aggregate salvaged from the scarification of the existing granular base course supplemented by fresh coarse aggregate and screenings so that aggregates and screenings thus supplemented correspond to Clause – 4.4: Water Bound Macadam or Clause-4.6: Wet Mix Macadam of the Ministry's Specification for Road and Bridge Works (third revision) 1995.

For patching potholes and sealing cracks: Where the existing surface to be overlaid is bituminous, any existing potholes and cracks shall be repaired and sealed in as directed by the Engineer.

For profile corrective course: A profile corrective course for correcting the existing pavement profile shall be laid to varying thickness as shown on the Drawings, or as indicated in the Contract Documents. The profile corrective course shall be laid to tolerances and densities as specified for wearing course if a single layer, or base course, if it is to be covered with a wearing course layer. Profile corrective course and its application: The type of material for use as profile corrective course shall be as shown on the drawings or as directed by the Engineer. Where it is to be laid as part of the overlay/strengthening course, the profile corrective course material shall be of the same specification as that of the overlay/ strengthening course. However, if provided as a separate layer, it shall be of the specification and details given in the contract drawings.

Any high spots in the existing surface shall be removed by a milling machine or other approved method, and all loose material shall be removed to the satisfaction of the Engineer.

Where the maximum thickness of profile corrective course will be not more than 40 mm, the profile corrective course shall be constructed as an integral part of the overlay course. In other cases, the profile corrective course shall be constructed as a separate layer, adopting such construction procedures and using such equipment as approved by the Engineer, to lay the specified type of material, to thickness and tolerance as specified, for the course, to be provided.

#### Construction Operations:

Preparing existing granular surface: Where the existing surface is granular, all loose material shall be removed to the satisfaction of the Engineer. Where the profile corrective course to be provided as a separate layer is also granular. Where the profile corrective course of bituminous material is to be laid over the existing granular surface, the latter shall, after removal of all loose material, be primed in accordance with Clause – 5.2.

The surface finish of all granular layers on which bituminous works are to be placed, shall, unless otherwise specifically instructed by the Engineer, be free from dust. All such layers must be capable of being swept, after the removal of any non- integral loose material, by means of a mechanical broom, without shedding significant quantities of material and dust removed by air jet, washing, or other means approved by the Engineer. After cleaning the surface shall be correct to line and level, within the tolerances specified for base course.

Scarifying existing bituminous surface: Where specified or shown on the drawings, the existing bituminous layer in the specified width shall be removed with care and without causing undue disturbance to the underlying layer, by a suitable method approved by the Engineer. After removal, all loose and disintegrated material, the underlying layers which might have been disturbed should be suitably reworked and compacted to line and level. After supplementing the base material as necessary with suitable fresh stone, the compacted finished surface shall be primed . Reusable materials shall be stacked as directed by the Engineer within 1000 m of their origin.

Patching of potholes and sealing of cracks: Where the existing surface to be overlaid is bituminous, any existing potholes and cracks shall be repaired and sealed in accordance with Clause (MORTH)s 3004.2 and 3004.3, or as directed by the Engineer.

Laying the profile corrective course

Laying on granular base: After preparing the granular surface in accordance with Clause -5.1.8.3 the profile corrective course shall be laid using material as described in Clause -5.1.8.2, or as otherwise described in the Contract, and compacted to the requirements of the particular Specification.

Laying on existing bituminous surface: The existing bituminous surface shall be prepared in accordance with Clause-5.1.8.3 and after applying a tack coat conforming to Clause-5.3, the bituminous profile corrective course shall be laid and compacted to the requirements of the particular Specification.

Correction of local depressions: Where local sags or depressions occur in the existing pavement, a specific filling operation shall be instructed by the Engineer, which should be laid in accordance with Figure 500-1. Normally, the maximum layer thickness at any point should not exceed 100 mm. In placing multiple lifts, they should be arranged according to the correct method as illustrated.

For correction of camber or super -elevation of the existing carriageway, the method shown in . Morth 500-2 shall be adopted, depending on the profile of the existing carriageway.

Covering the profile corrective courses: Profile corrective course particularly shall be so planned that the layer shall be covered by the designed base/wearing course at the earliest opportunity, before opening to regular traffic.

Surface finish and quality control of work: The relevant provisions of Section 900 shall apply.

Arrangements for traffic: During construction operations, arrangements for traffic shall be made in accordance with the provisions of Clause-1.12 of the Ministry's Specification for Road and Bridge Works (third revision) 1995.

Environmental protection: The provisions of Clause -1.11 of the Ministry's Specification for Road and Bridge Works (third revision) 1995 and the provision of Annexure 2 (to Clause (MORTH) 5.1) shall apply.

#### Measurements for Payment

Potholes and cracks: The work of filling potholes shall be measured separately and be paid for in square meters. The work of filling cracks by applying fog spray or emulsion slurry seal shall be measured in square meters, for the area covered by the spray.

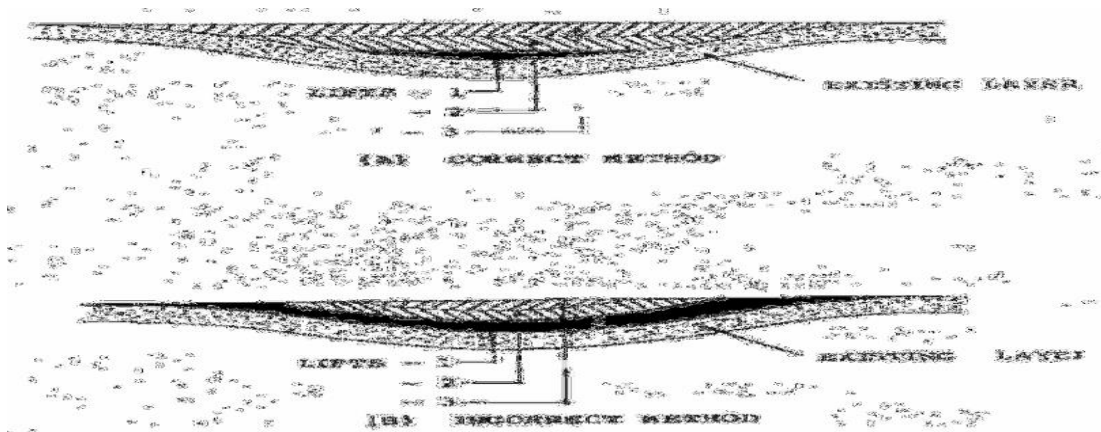


Figure 1 Methods for providing corrective course for short sags and depressions

Note: Profile corrective course material to be in accordance with the lift thickness

The work in filling-cracks larger than 3mm in width shall be measured and paid for- on a linear meter basis.

**Scarifying:** Scarifying the existing bituminous surface shall be measured on a square meter basis.

**Profile corrective course:** Profile corrective course shall be measured as the volume instructed and compacted in position and measured in cubic meters, or in tonnage, as stipulated in the Contract. The volume shall be calculated by plotting the exact profile of profile corrective course as required, and laid, superimposed on the existing pavement profile. Cross-sectional areas of the profile corrective course shall be measured at intervals as used in the design, or as determined by the Engineer, and the volume shall be calculated using the method of end areas.

**Prime coat:** Prime coat is to be measured and paid for on a per square meter basis.

**Tack coat:** This is to be a PROVISIONAL item, which may be used in-part or not at all, at the Engineers direction, and is to be measured and paid if used, on a square meter basis.

#### **1.3.5.1.8 Rates**

Rate for scarifying:

The contract unit rate for scarifying existing bituminous surfaces, including repairing / reworking disturbed underlying layers and removing and stacking reusable / unusable materials, shall include for but not necessarily be limited to, the cost of all labour, supply of materials needed for repair /reworking, hire charges of tools and plant, and transportation of scarified materials within 1000 m of their origin.

Rate for premixed bituminous material:

The contract unit rate for premixed bituminous material shall be payment in full for carrying out the required operations including full compensation for, but not necessarily limited to:

- Making arrangements for traffic except for initial treatment to verge, shoulders and construction of diversions;
- Preparation of the surface to receive the material.
- Providing all materials to be incorporated in the work including arrangement for stock yards, all royalties, fees rents where necessary and all leads and lifts;
- Mixing, transporting, laying and compacting the mix, as specified.
- All labour, tools, equipment, plant including installation of hot mix plant, power supply un its and all machinery, incidental to complete the work to these Specifications;
- Carrying out the work in part widths of the road where directed; (vii) Carrying out all tests for control of quality, and
- The rate shall cover the provision of bitumen at the rate specified in the contract, with the provision that the variation in actual percentage of bitumen used will be assessed and the payment adjusted accordingly.
- The rates for premixed material are to include for all wastage in cutting of joints etc.

- The rates are to include for all necessary testing, mix design, transporting and testing of samples, and cores. If there is not a project specific laboratory, the Contractor must arrange to carry out all necessary testing at an outside Laboratory, approved by the Engineer, and all costs incurred are deemed to be included in the rate quoted for the material.
- The cost of all plant and laying trials as specified to prove the mixing and laying methods is deemed to be included in the Contractor's rates for the material.

Rate for potholes and crack sealing:

The rate for patching potholes shall include for breaking out, trimming edges, cleaning out, painting edges and bottom with bitumen, and filling and compacting the excavation with the specified material. The rate should be inclusive of all plant, tools, labour and materials, transport, and disposal of surplus material, the contract unit rate for sealing cracks by applying fog spray shall be inclusive of providing all materials, tools, labour and plant and carrying out the work. The contract unit rate for sealing cracks by providing emulsion slurry seal

The contract unit rate for crack sealing 3mm to 6mm cracks with straight run or other specified bitumen shall be based on either a square meter basis, or linear meter of cracks as measured, as stipulated by the Contract.

The contract unit rate for cracks between 6mm and 15mm is to be measured on a linear meter basis, and the rate is to include for all materials, tools, plant, labour, and transport.

### **1.3.6 PRIME COAT OVER GRANULAR BASE**

#### **1.3.6.1.1 Scope**

This work shall consist of the application of a single coat of low viscosity liquid bituminous material to a porous granular surface preparatory to the superimposition of bituminous treatment or mix.

#### **1.3.6.1.2 Materials**

Primer:

The choice of a bituminous primer shall depend upon the porosity characteristics of the surface to be primed as classified in IRC: 16. These are:

- Surfaces of low porosity; such as wet mix macadam and water bound macadam, •
- Surfaces of medium porosity; such as cement stabilized soil base
- Surfaces of high porosity; such as a gravel base

Primer viscosity:

The type and viscosity of the primer shall comply with the requirements of IS 8887, as sampled and tested for bituminous primer in accordance with these standards. Guidance on viscosity and rate of spray is given in Table 11.

Table 1 Viscosity Requirement and quantity of liquid bituminous primer



Type of surface	Kinematic Viscosity of Primer at 60°C  (Centistokes)	Quantity of Liquid Bituminous Material per 10 Sq. m.  (kg)
Low porosity	30 – 60	6 to 9
Medium porosity	70 -140	9 to 12
High porosity	250-500	12 to 15

Choice of primer:

The primer shall be bitumen emulsion, complying with IS 8887 of a type and grade as specified in the Contract or as directed by the Engineer. The use of medium curing cutback as per IS 217 shall be restricted only for sites at sub-zero temperatures or for emergency applications as directed by the Engineer.

Weather and Seasonal Limitations

Bituminous primer shall not be applied to a wet surface (see 5.2.4.2) or during a dust storm or when the weather is foggy, rainy or windy or when the temperature in the shade is less than 10°C. Surfaces which are to receive emulsion primer should be damp, but no free or standing water shall be present.

#### **1.3.6.1.3 Construction**

Equipment:

#### **1.3.6.1.4 Quality Control of Work**

For control of the quality of materials supplied and the works carried out, the relevant provisions of Section 900 (MORTH) shall apply.

#### **1.3.6.1.5 Measurements for Payment**

Prime coat shall be measured in terms of surface area of application in square metres.

#### **1.3.6.1.6 Rate**

The contract unit rate for prime coat with adjustments shall be payment in full for carrying out the required operations including full compensation for all components, and as applicable to the work specified in these Specifications. Payment shall be made on the basis of the provision of prime coat at an application rate of 0.6 kg per square meter, with adjustment, plus or minus, for the variation between this amount and the actual amount approved by the Engineer after the preliminary trials

### **1.3.7 E - Visual Improvement- Other Civil Works**

#### **1.3.8 E1 - Shared zone paving**

##### **1.3.8.1.1 Scope**

Supply & laying Modular Paving Stones with PremierShield protection size as per product description. Water absorption: not over 4.5%, Compressive strength: 500kg/cu cm, Colours: UV light resistant & as approved by BMC. Installation complete as per drawing & technical specification and as directed by Engineer in charge. Item also includes all materials, labour, equipments, tools, watering, cleaning etc. complete.

### **1.3.8.1.2 Materials**

The shared zone paving shall be constructed with any of the following types:

- Cast-in-situ cement concrete of Grade M20 as per Section 1700 of the Specifications.
- Precast cement concrete blocks/tiles of Grade M20 as per Section 1700 of the Specifications. The minimum thickness of the cement concrete block/tile shall be 25 mm and minimum size shall be 300 mm x 300 mm.
- Natural stone slab cut and dressed from stone of good and sound quality, uniform in texture, free from defects and at least equal to a sample submitted by the Contractor and approved by the Engineer. The minimum thickness of the natural stone slab shall be 25 mm and minimum size shall be 300 mm x 300 mm.

### **1.3.8.1.3 Construction operations**

- Drainage pipes below the shared zone originating from the kerbs shall be first laid in the required slope and connected to the drains/sumps/storm water drain/drainage chutes as per provisions of the drawings, or as specified.
- Portion on back side of kerbs shall be filled and compacted with granular sub-base material as per Clause-4.1 of the Specifications in specified thickness.
- The base shall be prepared and finished to the required lines, levels and dimensions as indicated in the drawings with the following :-
  - a) Minimum 150 mm thick, compacted granular sub-base material as per Clause 4.1 of the Specifications.
  - b) Minimum 25 mm thick cement concrete of Grade M 15,
- Over the prepared base, precast concrete blocks/tiles/natural stone slabs and/or cast- in-situ slab shall be set/ laid
- Precast cement concrete blocks/tiles/natural stone slab: The blocks/tiles/slabs shall be set on a layer of average 12 mm thick cement- sand mortar (1:3) laid on prepared base in such a way that there is no rocking. The gaps between the blocks/tiles/slabs shall not be more than 12 mm and shall be filled with cement-sand mortar (1:3).
- Cast-in-situ cement concrete: The minimum thickness of the cement concrete shall be 25 mm and it shall be cast on the prepared base in panels of specified size in a staggered manner. Construction joints shall be provided.

### **1.3.8.1.4 Measurements for Payment**

Footpaths and separators shall be measured respective unitas per BQO.

### **1.3.8.1.5 Rate**

Contract unit rates shall be inclusive of full compensation of all labour, materials, tools, equipment and incidentals to construction of footpaths. Cost of providing pipes and arrangement for their discharge into appropriate drainage channels shall be incidental to the construction of footpaths.

### **1.3.8.1.6 SPECIFICATIONS CONCRETE PAVER BLOCKS**

- The concrete blocks should be procured from manufacturer approved by Engineer-In-Charge and satisfying the following criteria. IRC SP 63 2004 shall be used as guideline for Paver Block work. ensure maximum compaction to achieve required strength.
- The grade of concrete should be AS PER Design/BOQ.
- Manufacturer shall have adequate capacity mixer with digital water meter / moisture control system to maintain constant water/ cement ratio.
- Manufacturing plant shall have complete automation with computerized weigh batching system for consistent quality of paving blocks.
- Blocks shall be moist cured for initial 24 hours and then water cured for at least 15 days before dispatch to site.
- Manufacturer shall have complete laboratory setup for testing blocks as per IS 15658- 2006 and should be on approved list of BMC Manufacturer shall possess excise registration certificate.

### **1.3.9 E2 - Median**

#### **1.3.9.1.1 Scope**

The work shall consist of constructing shoulder (hard/paved/ earthen with brick or stone block edging) on either side of the pavement, median in the road dividing the carriageway into separate lanes and islands for channelising the traffic at junctions in accordance with the requirements of these Specifications and in conformity with the lines, grades and cross-sections shown on the drawings or as directed by the Engineer.

#### **1.3.9.1.2 Materials**

Shoulder on either side of the road may be of selected earth/ granular material/ paved conforming to the requirement and the median may be of selected each conforming to the requirements of Clause 305.

Median/Traffic islands shall be raised and kerbed at the perimeter and the enclosed area filled with earth and suitably covered with grass turf/shrubs

Paved shoulders shall consist of sub-base, base and surfacing courses, as shown in the drawings and materials for the same shall conform to relevant Specifications of the corresponding items. Where paved or hard shoulders are not provided, the pavement shall be provided with brick/stone block edgings as shown in the drawings. The bricks shall conform to Clause (MORTH)-1003 of these Specifications.

Stone blocks shall conform to Clause (MORTH)-1004 of these Specifications and shall be of size 225 mm x 110 mm x 75 mm.

Size of Shoulder/Median/Islands

Shoulder (earthen/hard/paved)/median/traffic island dimensions shall be as shown on the drawings or as directed by the Engineer.

#### **1.3.9.1.3 Construction Operations**

Shoulder:

The sequence of operations shall be such that the construction of paved shoulder is done in layers each matching the thickness of adjoining pavement layer. Only after a layer of pavement and corresponding layers in paved and earth shoulder portion have been laid and compacted, the construction of next layer of pavement and shoulder shall be taken up.

Where the materials in adjacent layers are different, these shall be laid together and the pavement layer shall be compacted first. The corresponding layer in paved shoulder portion shall be compacted thereafter, which shall be followed by compaction of earth shoulder layer. The adjacent layers having same material shall be laid and compacted together.

In all cases where paved shoulders have to be provided along side of existing carriageway, the existing shoulders shall be excavated in full width and to the required depth as per Clause -3.1.3.7. Under no circumstances, box cutting shall be done for construction of shoulders. Compaction requirement of earthen shoulder shall be as per Table 300-2. In the case of bituminous courses, work on shoulder (earthen/ hard/paved), shall start only after the pavement course has been laid and compacted.

During all stages of shoulder (earthen/hard/paved) construction, the required crossfall shall be maintained to drain off surface water.

Regardless of the method of laying, all shoulder construction material shall be placed directly on the shoulder. Any spilled material dragged on to the pavement surface shall be immediately removed, without damage to the pavement, and the area so affected thoroughly cleaned,

#### Median

Median shall be constructed in a manner similar to shoulder up to the road level. Thereafter the median and islands, if raised, shall be raised at AS PER approved design by using kerb stones of approved material and dimensions and suitably finished and painted as directed by the Engineer. If not raised, the median and islands shall be differentiated from the shoulder/ pavement as the case may be, as directed by the Engineer. The confined area of the median and islands shall be filled with local earth or granular material or any other approved material and compacted by plate compactor/power rammer. The confined area after filling with earth shall be turfed with grass or planted with shrubs and in case of granular fill it can be finished with tiles/slabs as directed by the Engineer.

### **1.3.11 G - Visual Improvement- Landscape Works**

#### LANDSCAPE WORK

#### **1.3.12 Scope of work:**

The planting contractor shall provide all horticultural operations and services specified on the drawings/ schedule of quantities as specified herein or both, as instructed by the Executive Engineer(Hort)/ including :-

- (a) Provide all equipment services and transport as required. Tractors with Trolleys, Water Tankers, Levelers, Spray Pumps, Augers etc as required for the project.
- (b) Provide all plant material
- (c) Provide topsoil for all plants

- (d) Provide fertilizers, chemicals and manure as specified
- (e) Preparation of planting locations
- (f) Prepare plants pits, back filling, prepare “saucers” at least 5” deep for watering ,adding soil after settlement.
- (g) Spraying before planting
- (h) Staking supporting, wrapping and tying plant materials
- (i) Transplanting, if any
- (j) Disposal of debris and unused materials
- (k) Guarantee of trees and plants for a period as per the tender requirement
- (l) Plant material – Trees, Shrubs etc.
- (m) Plant list – plants are listed in the drawings. The plants list is enclosed herein.
- (n) Nomenclature – The names of the plants species confirm to standardized botanical names. Quality and general requirements of plants

Plants shall be typical of their species and variety have normal growth habits , well developed branches, densely foliated with vigorous and fibrous root systems. Plant shall be free from disease and insects. Bark shall be free from abrasion.

Plants shall be grown in pots/bags. Plants shall have been grown under climatic conditions similar to those in locality of project. Nursery grown plants shall have been at least once transplanted. Plants growing in natural ground prior to supply shall not be accepted.

Each plant shall be properly identified by weather-proof labels securely attached there to before delivery to project site. No plant shall be delivered to the project site, except for required samples, untill inspection has been made in the field or at the nursery or unless specifically authorized in writing by the Executive Engineer(Horticulture)/Landscape Architect

Baled and Burlap plants must be moved with the root system as solid units in balls of earth firmly wrapped with burlap. The diameter and depth of the balls of earth must be sufficient to encompass the fibrous and feeding root system necessary for the healthy development of the plant. No plant shall be used when the ball of earth surrounding its roots have been badly cracked or broken prior to or during the process of planting or after the equipment required in connection with its transplanting has been removed. The plant and earth ball shall remain intact as one unit during all operations.

Container grown stock shall have been grown in container long enough for the root system to have developed sufficiently to hold its soil together, firm and whole. No plant shall be loose in container.

All plants shall be hardy under climatic conditions similar to those in he locality of the project. When plants of kinds or sizes specified are not available, substitution may be made upon request by the contractor if approved by the Project Engineer/Landscape Architect .

All plants should be strong sufficiently to stand straight without any support, but exceptional trees, soon after planting shall be properly supported to ensure their safety against wind or other factor which may effect it adversely.

Size of Plants:

All plants shall be equal to or exceed the sizes given in the plant list, which are minimum acceptable sizes plants shall be measured before pruning, with branches in normal position. Trees shall be minimum length as specified and shall be straight and symmetrical with a crown and having a persistent main stem. The size of the crown shall be in good overall proportion to the height of the tree. The height of the tree shall be measured from the top of foliage including the rootball.

Shrubs shall be well foliated with a crown typical of the species and variety. Shrub height dimension shall be taken from the top of foliage and upto, and including the rootball.

Sweet Earth :

Shall be friable foam material, fertile, typical of the cultivated top soil of the locality, containing at least 2% of decay organic matter sweet earth shall be taken from well drained arable sites, it shall be reasonably free of subsoil, stones, weeds, earth, clods, sticks, roots or other objectionable extraneous matter or debris and shall contain no toxic materials. Representative samples shall be tested for fertility and general texture by the contractor or by a recognised commercial or government Contractor. No sweet earth shall be delivered in frozen or muddy condition.

Manure:

Shall be well – rotted, unleached (“Cow Dung Manure”) free of harmful chemicals and other substances which may affect plant life. Manure shall be free of weeds, straw leaves or inorganic debris.

### **1.3.12.1.1 Planting Operations**

Time of planting : Planting operations shall be conducted under favorable weather conditions, the contractor will be notified by the Engineer-In-Charge when areas of work are sufficiently clear of construction work for the contractor to commence work on planting.

Planting shall be done by experienced workmen familiar with planting procedures under the supervision of a qualified foreman.

Planting pits shall be excavated with vertical sides, except for those designated to be planted in beds. Plants pits shall be of the following sizes 0.90 m x 0.90m x 0.90m depth minimum for trees. Tree points shall be large enough to accommodate the root ball + 1/3 root ball depth on all sides shrubs - 0.45m x 0.45m x 0.45m depth excluding 5” depth for watering for both trees and shrubs.

Executive Engineer(Hort)/Landscape Architect shall inspect and approve plants pits before the contractor proceeds with placing of plants. Topsoil shall be made ready for planting before plants are delivered to the site. The pits/beds shall be given anti termite treatment @ 20 ml. Radar per pit after back filling.

Placing of plants: Plants shall be placed at the centre of pits, plumb and straight. The Executive Engineer(Hort)/Landscape Architect shall inspect and approve placing of plants before the contractor proceeds with further operations.

Final Consideration: Sweet earth shall be compacted around basin of balls to fill all voids. Roots shall be properly spread out and sweet earth carefully worked in among them.

Watering: Immediately after plants pit is backfilled a shallow base slightly larger than pit shall be formed with a ridge of soil tone facilitate and contain watering. After planting cultivate the soil between plant pit and rake smooth. Spray the soil with water to settle.

Guying and Staking: All plants shall be inspected for injury to trunks, evidence of insect done immediately after planting. Trees shall stand straight without staking. Executive Engineer (Hort)/Landscape Architect shall inspect and approve plant pits before the contractor proceeds with placing of plants.

After Planting care Watering: Water tree and other plants by flooding within two hours of the time of planting.

Guarantee Period: All plants shall be guaranteed by the contractor for a period as per the tender requirement, after the certified date of completion. During this time any plant which dies due to natural causes or does not grow sufficiently shall be replaced free of cost by the contractor. Trees which perish due to unnatural causes such as human interference, cattle grazing etc. shall not be replaced free of cost but under instructions from engineer in charge and landscape architect shall be replanted and repaid for.

Replacement: All replacements of plants shall be made by the same species/variety and sizes as specified in the plant list. The cost of replacement shall be borne by the contractor.

### **1.3.13 H - Visual Improvement- Road Works**

#### **1.3.13.1.1 ROAD MARKING**

General The colour, width and layout of road markings shall be in accordance with the Code of Practice for Road Markings with paints, IRC : 35, and as specified in the drawings or as directed by the Engineer. 803.2.

Materials Road markings shall be of ordinary road marking paint, hot applied thermoplastic compound, or reflectorised paint as specified in the item and the material shall meet the requirements as specified below.

#### **Hot Applied Thermoplastic Road Marking**

General :

The work under this section consists of marking traffic stripes using a thermoplastic compound meeting the requirements specified herein.

The thermoplastic compound shall be screeded/extruded on to the pavement surface in a molten state by suitable machine capable of controlled preparation and laying with surface application of glass beads at a specific rate. Upon cooling to ambient pavement temperature, it shall produce an adherent pavement marking of specified thickness and width and capable of resisting deformation by traffic,

The colour of the compound shall be white or yellow (IS colour No. 556) as specified in the drawings or as directed by the Engineer.

Where the compound is to be applied to cement concrete pavement, a sealing primer as recommended by the manufacturer, shall be applied to the pavement in advance of placing of the stripes to ensure proper bonding of the compound. On new concrete surface any laitance and/or curing compound shall be removed before the markings are applied.

#### Thermoplastic Material

General : The thermoplastic material shall be homogeneously composed of aggregate, pigment, resins and glass reflectorizing beads.

#### Requirements :

Composition: The pigment, beads, and aggregate shall be uniformly dispersed in the resin. The material shall be free from all skins, dirt and foreign objects and shall comply with requirements indicated in Table below.

#### PROPORTIONS OF CONSTITUENTS OF MARKING MATERIAL

(Percentage by weight)

Component	White	Yellow
Binder	18.0 min.	18.0 min.
Glass Beads	30-40	30-40
Titanium Dioxide	10.0 min.	—
Calcium Carbonate and Inert Fillers	42.0 max.	See
Yellow Pigments	—	Note

Note : Amount of yellow pigment, calcium carbonate and inert fillers shall be at the option of the manufacturer, provided all other requirements of this Specification are met

Properties: The properties of thermoplastic material, when tested in accordance with ASTM D36/BS-3 262-(Part 1), shall be as below:

#### Luminance :

White : Daylight luminance at 45 degrees-65 per cent min. as per AASHTO M 249

Yellow: Daylight luminance at 45 degrees-45 per cent min. as per AASHTO M 249

Drying time : When applied at a temperature specified by the manufacturer and to the required thickness, the material shall set LO bear traffic in not more than 15 minutes.

Skid resistance : not less than 45 as per BS 6044.

Cracking resistance at low temperature : The material shall show i-o cracks on application to concrete blocks.



Softening point :  $102.5 \pm 9,5^{\circ}$  C as per ASTM D 36.

How resistance : Not more than 25 per cent as per AASHTO M 249.

Yellowness index (for white thermoplastic paint): not more than 0.12 as per AASHTO M 249

Storage life : The material shall meet the requirements of these Specifications for a period of one year. The thermoplastic material must also melt uniformly with no evidence of skins or unmelted panicles for the one year storage period. Any material not meeting the above requirements shall be replaced by the manufacturer/ supplier/Contractor.

Reflectorisation : Shall be achieved by incorporation of beads, the grading and other properties of the beads shall be as specified in Clause 803.4.3

Marking : Each container of the thermoplastic material shall be clearly and indelibly marked with the following information:

The name, trade mark or other means of identification of manufacturer

Batch number

Date of manufacture

Colour (white or yellow)

Maximum application temperature and maximum safe heating temperature.

Reflectorising glass beads

General: This Specification covers two types of glass beads 10 be used for the production of reflectorised pavement markings.

Type 1 beads are those which are a constituent of the basic thermoplastic compound vide Table above and Type 2 beads are those which are to be sprayed on the surface

The glass beads shall be transparent, colourless and free from milkiness, dark particles and excessive air inclusions.

Specific requirements

Gradation: The glass beads shall meet the gradation requirements for the two types as given in below;

**GRADATION REQUIREMENTS FOR GLASS BEADS**

Sieve size	Per cent retained	
	Type 1	Type 2
1.18 mm	0 to 3	
850 micron	5 to 20	0 to 5
600 -do-	-	5 to 20
425 -do-	65 to 95	-
300 -do-	-	30 to 75
ISO -do-	0 to 10	10 to 30
below 180 micron	-	0 to 15

Roundness: The glass beads shall have a minimum of 70 per cent true spheres.

Refractive index: The glass beads shall have a minimum re-fractive index of 1.50.

Free flowing properties : The glass beads shall be free of hard lumps and clusters and shall dispense readily under any conditions suitable for paint striping. They shall pass the free flow-test.

Test methods: The specific requirements shall be tested with the following methods: (i)

Free-flow test- Spread 100 grams of beads evenly in a 100 mm diameter glass dish. Place the dish in a 250 mm inside diameter desiccator which is filled within 25 mm of the top of a desiccator plate with sulphuric acid water solution { specific gravity 1.10). Cover the desiccator and let it stand for 4 hours at 20 to 29 degree C. Remove sample from desiccator, transfer beads to a pan and inspect for lumps or clusters. Then pour beads into a clean, dry glass funnel having a 100 mm stem and 6 mm orifice. If necessary, initiate flow by lightly tapping the funnel. The glass spheres shall be essentially free of lumps and clusters and shall flow freely through the funnel.

The requirements of gradation, roundness and refractive index of glass beads and the amount of glass beads in the compound shall be tested as per B3 6088 and BS 3262 (Part I).

The Contractor shall furnish to the Employer a copy of certified test reports from the manufacturer of glass beads obtained from a reputed laboratory showing results of all tests specified herein and shall certify that the material meets all requirements of this Specification. However, if so required, these tests may be carried out as directed by the Engineer.

Application properties of thermoplastic material

The thermoplastic material shall readily get screeded/ extruded at temperatures specified by the manufacturers for respective method of application to produce a line of specified thickness which shall be continuous and uniform in shape having clear and sharp edges. 803.4.4.2. The material upon heating

to application temperatures, shall not exude fumes, which are toxic, obnoxious or injurious to persons or property.

#### Preparation:

The material shall be melted in accordance with the manufacturer's instructions in a heater filled with a mechanical stirrer to give a smooth consistency to the thermoplastic material to avoid local overheating. The temperature of the mass shall be within the range specified by the manufacturer, and shall on no account be allowed to exceed the maximum temperature stated by the manufacturer. The molten material should be used as expeditiously as possible and for thermoplastic material which has natural binders or is otherwise sensitive to prolonged heating, the material shall not be maintained in a molten condition for more than 4 hours.

After transfer to the laying equipment, the material shall be maintained within the temperature range specified by the manufacturer for achieving the desired consistency for laying.

The material shall be melted in accordance with the manufacturer's instructions in a heater filled with a mechanical stirrer to give a smooth consistency to the thermoplastic material to avoid local overheating. The temperature of the mass shall be within the range specified by the manufacturer, and shall on no account be allowed to exceed the maximum temperature stated by the manufacturer. The molten material should be used as expeditiously as possible and for thermoplastic material which has natural binders or is otherwise sensitive to prolonged heating, the material shall not be maintained in a molten condition for more than 4 hours.

After transfer to the laying equipment, the material shall be maintained within the temperature range specified by the manufacturer for achieving the desired consistency for laying.

#### Properties of finished road marking :

The stripe shall not be slippery when wet.

The marking shall not lift from the pavement in freezing weather.

After application and proper drying, the stripe shall show no appreciable deformation or discolouration under traffic and under road temperatures upto 60°C.

The marking shall not deteriorate by contact with sodium chloride, calcium chloride or oil drippings from traffic.

The stripe or marking shall maintain its original dimensions and position. Cold ductility of the material shall be such as to permit normal movement with the road surface without chipping or cracking.

The colour of yellow marking shall conform to IS Colour No. 356 as given in IS: 164.

#### Reflectorised Paint

Reflectorised paint, if used, shall conform to the Specification by the manufacturers and approved by the Engineer. Reflectorising glass beads for reflectorising paints where used shall conform to the requirement of Clause of Reflectorising glass beads.

## Application

Marking shall be done by machine. For locations where painting cannot be done by machine, approved manual methods shall be used with prior approval of the Engineer. The Contractor shall maintain control over traffic while painting operations are in progress so as to cause minimum inconvenience to traffic compatible with protecting the workmen.

The thermoplastic material shall be applied hot either by screeding or extrusion process. After transfer to the laying apparatus, the material shall be laid at a temperature within the range specified by the manufacturer for the particular method of laying being used. The paint shall be applied using a screed or extrusion machine.

The pavement temperature shall not be less than 10°C during application. All surfaces to be marked shall be thoroughly cleaned of all dust, dirt, grease, oil and all other foreign matter before application of the paint. The material, when formed into traffic stripes, must be readily renewable by placing an overlay of new material directly over an old line of compatible material. Such new material shall so bond itself to the old line that no splitting or separation takes place. Thermoplastic paint shall be applied in intermittent or continuous lines of uniform thickness of at least 2.5 mm unless specified otherwise. Where arrows or letters are to be provided, thermoplastic compound may be hand-sprayed. In addition to the beads included in the material, a further quantity of glass beads of Type 2, conforming to the above noted Specification shall be sprayed uniformly into a mono-layer on to the hot paint line in quick succession of the paint spraying operation. The glass beads shall be applied at the rate of 250 grams per square metre area.

The minimum thickness specified is exclusive of surface applied glass beads. The method of thickness measurement shall be in accordance with Appendices B and C of BS - 3262 (Part 3).

The finished lines shall be free from ruggedness on sides and ends and be parallel to the general alignment of the carriageway. The upper surface of the lines shall be level, uniform and free from streaks

## Measurements for Payment

The painted markings shall be measured in sq. metres of actual area marked (excluding the gaps, if any). In respect of markings like directional arrows and lettering, etc., the measurement shall be by numbers

## Rate

The Contract unit rate for road markings shall be payment in full compensation for furnishing all labour, materials, tools, equipment, including all incidental costs necessary for carrying out the work at the site conforming to these Specifications complete as per the approved drawing(s) or as directed by the Engineer and all other incidental costs necessary to complete the work to these Specifications.

### **1.3.15 REFLECTIVE PAVEMENT MARKERS (ROAD STUDS)**

#### General

The work cover the providing and fixing of reflective pavement marker (RPM) or road stud, a device which is bonded to or anchored within the road surface, for lane marking and

delineation for night-time visibility. It reflects incident light in directions close to the direction from which it came.

**Material**

Plastic body of RPM/road stud shall be moulded from ASA (Acrylic Styrene Acrylonitrile) or HIPS (Hi-impact Polystyrene) or Acrylonitrile Butadiene Styrene (ABS) or any other suitable material approved by the Engineer. The markers shall support a load of 13,635 kg tested in accordance with ASTM D4280.

Reflective panels shall consist of number of lenses containing single or dual prismatic cubes capable of providing total internal reflection of the light entering the lens face. Lenses shall be moulded of methyl methacrylate conforming to ASTM D 788 or equivalent.

**Design**

The slope or retro-reflecting surface shall preferably be  $35 \pm 5^\circ$  to base and the area of each retro-reflecting surface shall not be less than 13.0 sq.cm.

**Optical Performance**

**Unidirectional and bi-directional studs**

Each reflector or combination of reflectors on each face of the stud shall have a Coefficient of Luminous Intensity (C.I.L), not less than that given in Table below as appropriate,

**Omni-directional studs**

Each Omni-directional stud shall have a minimum (C.I.L) of not less than 2 mcd/lx.

Table 1- Minimum CIL values for Category A studs

Entrance angle	Observation angle	C.I.L in mcd/lx		
		White	Amber	Red
0° U 5° L & R	0.3°	220	110	44
0° U 10° L & R	0.5°	120	60	24

Table 1- Minimum CIL values for Category B studs

Entrance angle	Observation angle	C.I.L in mcd/lx		
		White	Amber	Red
0° U 6° L & R	0.3°	20	10	4
0° U 10° L & R	0.5°	15	7.5	3

*Note* : 1) The entrance angle of 0° U corresponds to the normal aspect of the reflectors when the reflecting road stud is installed in horizontal road surface.

2) The stud incorporating one or more corner cube reflectors shall be included in category 'A'. The stud incorporating one or more bi-convex reflectors shall be included in category 'B'.

#### Tests

Co-efficient of luminance intensity can be measured by procedure described in ASTM E 809 "Practice for Measuring Photometric Characteristics" or as recommended in BS:873-Part 4: 1973. .

Under test conditions, a stud shall not be considered to fail the photometric requirements if the measured C.I.L. at any one position of measurement is less than the values specified in Table above provided that the value is not less than 80 percent of the specified minimum, and the average of the left and right measurements for the specific angle is greater than the specified minimum.

#### **1.3.16 Solar Powered Road Markers (Solar Studs)**

The solar studs shall be made of Aluminium alloy and poly carbonate material which shall be absolutely weather resistance and strong enough to support a load of 13,635 kg tested in accordance with ASTM D4280. Its colour may be white, red, yellow, green or blue or combination as directed by the Engineer. Its water resistance shall meet the requirements of IP 65 in accordance with IS :12063:1987 Category 2 for protection against water ingress. The dimensions of solar studs shall not be less than 100 mm x 100 mm x 10 mm. It shall have super bright LEDs so as to provide long visibility from a distance of more than 800 m. Its flashing rate shall not be less than 1 Hz. It should be able to give the prescribed performance in the temperature range of -40°C to +55°C. Its life shall be not less than 3 years .

#### Fixing of Reflective Markers Requirements

The enveloping profile of the head of the stud shall be smooth and the studs shall not present any sharp edges to traffic. The reflecting portions of the studs shall be free from crevices or ledges where dirt might accumulate. Marker height shall not be less than 10mm and shall not exceed 20 mm and its width shall not exceed 130 mm. The base of the marker shall be flat within 1.3 mm. If the bottom of the marker is configured, the outermost faces of the configurations shall not deviate more than 1.3 mm from a flat surface. All road studs shall be legibly marked with the name, trade mark or other means of identification of the manufacturer. .

#### Placement

The reflective marker shall be fixed to the road surface using the adhesives and the procedure recommended by the manufacturer, No nails shall be used to affix the marker so that they do not pose safety hazard on the roads. Regardless of the type of adhesive used, the markers shall not be fixed if the pavement is not surface dry and on new asphalt concrete surfacing until the surface has been opened to traffic for a period of not less than 14hours. The portions of the road surface, to which the marker is to be bonded by the adhesive, shall be free of dirt, curing compound, grease, oil, moisture, loose or unsound layers, paint and any other material which would adversely affect the bond of the adhesive. The adhesive shall be placed uniformly on the cleaned pavement surface or on the bottom

of the of the marker in a quantity sufficient to result in complete coverage of the area of contract of the marker with no voids present and with a slight excess after the marker has been lightly pressed in place. For epoxy installations, excess adhesive around the edge of the marker, excess adhesive on the pavement and adhesive on the exposed surfaces of the markers shall be immediately removed.

#### Warranty and durability

The Contractor shall submit a two year warranty for satisfactory field performance including stipulated retro-reflectance of the reflecting panel, to the Engineer. In addition, a two year warranty for satisfactory infield performance of the finished road marker shall also be given by the Contractor who carries out the work of fixing of reflective road markers. In case the markers are displaced, damaged, get worn out or lose their reflectivity compared to stipulated standards, the Contractor would be required to replace all such markers within 15 days of the intimation from the Engineer, at his own cost.

#### Measurement for Payment

The measurement of reflective road markers shall be in numbers of different types of markers supplied and fixed Rate

The contract unit rate for reflective road markers shall be payment in full compensation for furnishing all labour, materials, tools, equipment including incidental costs necessary for carrying out the Work at site conforming to the specification complete as per approved drawings or as directed by the Engineer.

### **1.3.17 TUBULAR STEEL RAILING**

#### General

The work shall consist of supplying, fixing and erecting tubular steel railings designing, drawings and as directed by the Engineer.

The railings shall be of tubular steel in conformance to IS:1239. The fabrication and painting except for the final coat shall be completed before despatch to the site. Prior to the painting, all surfaces shall be grit blasted to the satisfaction of the Engineer and pickled. The priming coat of paint shall be applied as soon as the steel has dried,

The posts shall be vertical and of the type as approved drawing with a tolerance not exceeding 6 mm in a length of 3 m. The railing shall be erected true to line and grade.

#### Measurements for Payment

The railing shall be measured unit mentioned in BOQ from end to end along the face of the railing, including end and intermediate posts, with no deductions for gaps as shown on the drawings.

#### Rate

The Contract unit rate for Tubular Steel Railing shall be payment in full compensation for furnishing all labour, materials, tools, equipment and plant required for fabrication, connection, oiling, painting, temporary erection, inspection, test and final erection at site and all other incidental costs necessary to complete the work to these Specifications.

### **1.3.18 STREET FURNITURE**

#### General Conditions:

The above mentioned Street Furniture items and their respective specifications are minimum. The Contractor may propose better specifications than specified above. They shall form the integral part of this project, at sole discretion of bscdcl. All the materials used for the street furniture items shall be non flammable and suitable for all weather conditions.

The Contractor shall follow all the bye laws, guidelines, norms and standards as set out by any Statutory Authority with regards to the erection of Street Furniture items and advertising thereon. Also, prior permission of the same shall also be taken by the Contractor at its cost and risk and payment of License fees, taxes, or any other sum payable to such authorities shall be sole responsibility of the Contractor.

The Contractor shall alone be responsible for lost/theft/damage etc. of any of the street furniture items.



The Contractor shall be responsible for the electric, water supply and other required connections required for any of the Street Furniture item. Also, he shall be responsible for disposing-off the litter, drainage, etc. at the locations approved by the S M C . Further to this, the Contractor shall be responsible to pay all the bills, charges, etc. of any services used for any street furniture items.

No bill boards or hoardings shall be a part of this project.

All the Street Furniture items shall be fixed to the ground with concrete foundation, etc. so that they cannot be removed easily

## **8 HORTICULTURE WORK**

The horticultural operations shall be started on the ground previously leveled and dressed to the required formation levels and slopes. In case where unsuitable soil is met with, it shall be removed, replaced or covered over to a thickness decided by the Engineer-in-charge with good earth.

### **8.1 TRENCHING IN ORDINARY SOIL**

**8.1.1 Trenching** is done in order to loosen the soil, turn over the top layer containing weeds etc. and to bring up the lower layer of good earth to form a proper medium for grassing, regressing. Hedging and shrubbery. During horticultural operations, any walls, foundations, etc. met with in trenching or excavation shall not be dismantled without pre-measurement and prior to the written permission of the Engineer-incharge. The depth is generally 30 cm for grassing and 60 cm for regressing in good soil. The trenched ground shall, after rough dress, be flooded with water by making small kiaries to enable the soil to settle down. Any local depression unevenness etc. shall be made good by dressing and/or filling with good earth. Weeds or other vegetation which appear on the ground are then uprooted and removed and disposed off and paid.

Trenching shall consist of the following operations:

1. The whole plot area shall be divided into narrow rectangular strips of about 1.5 m width then these strips shall be sub-divided lengthwise into about 1 m long which shall be excavated serially and excavated soil deposited in the adjacent section preceding it,
2. In excavating and depositing care shall be taken that the top soil with all previous plant growth including roots, get buried in the bottom layer of trenched area, the dead plants so buried incidentally being formed into humus.
3. The excavated soil shall be straight away dumped into the adjoining sections so that double handling otherwise involved in dumping the excavated stuff outside and in back filling in the trenches with leads is practically eliminated.

#### **8.1.2 Measurements**

Length and breadth of the plot shall be measure correct to 0.1 m and depths correct to cm and cubical contents shall be calculated in cum, correct to two places of decimal. No deduction shall be made nor extra paid for removing stones, brick bats and other foreign matter met with during excavation upto initial lead of 50 m and stacking the same.

#### **8.1.3 Rate**

The rate shall include the cost of all labour and material involved in the operations of trenching as described above, including cost of all precautionary measures to be taken for protections and supporting all services etc. It does not include the cost of mixing of earth, sludge or manure.

### **8.2 GOOD EARTH**

8.2.1 At site the earth shall be stacked at site in stacks not less than 50 cm high and not less than 3.0 cum in volume.

#### **8.2.2 Measurements:**

In stacks of good earth Length, breadth and height shall be measured correct to a cm and 20% shall be reduced for wide's in volume before payment unless otherwise described.

**8.2.3 Rate:** The rate shall include the cost of excavating and transporting the earth from areas lying at distance not exceeding one km. from the site, breaking of clods and stacking at places indicated. The rate shall also include royalty if payable.

### **8.3 OILCAKE**

#### **8.3.1 Neem/Castor:**

The cake shall be free from grit and any other foreign matter and should be undecorticated and pulverized. Before supply the quality of cake should be got approved by the Engineer-in-charge.

### **8.3.2 Measurements**

The arrangement for weighing shall be made at site by the department. The gunny bags shall be the property of the government. The material shall be packed in old serviceable gunny bags of 50 kgs capacity approximately excluding weight of gunny bag shall be made for net quantity.

**8.3.3 Rate:** The rate shall include the cost of labour and material involved in all operations described above, carriage up to site of work with all lead and lifts and, weighing etc.

### **8.4 SUPPLY AND STACKING OF SLUDGE**

18.4.1 It shall be transported to the site in lorries with efficient arrangement to prevent spilling enrooted and stacked at site. Each stack shall not be less than 50 cm height and volume not less than 3 cum.

#### **8.4.2 Measurements**

Length, breadth and depth of stacks shall be measured correct to a cm, and the volume of the stack shall be reduced by 8% for looseness in stacking and to arrive at the net quantity for payment.

#### **8.4.3 Rate**

The rate shall include the cost of labour and material involved in all operations described above, including carriage up to one km and royalty if payable.

**8.5 SUPPLY AND STACKING OF MANURE** Same as above in para 18.4 to 18.4.3

### **8.6 ROUGH DRESSING OF THE TRENCHED GROUND**

**8.6.1** Rough dressing of the area shall include making kiaries for flooding. The trenched ground shall be leveled and rough dressed and if there are any hollows and depressions resulting from subsidence which cannot be so leveled, these shall be filled properly with earth brought from outside to bring the depressed surface to the level of the adjoining land and to remove discontinuity of slope and then rough dressed again. The supply and spreading of soil in such depressions is payable separately. In rough dressing, the soil at the surface and for 75 mm depth below shall be broken down to particle size not more than 10 mm in any direction.

#### **8.6.2 Measurements**

Length, breadth of superficial area shall be measured correct to 0.1 meter. The area shall be calculated in sqm. Correct to two places of decimal.

#### **8.6.3 Rate**

The rate shall include the cost of all the labour and material involved in all the operations described as above.

### **8.7 UPROOTING WEEDS FROM TRENCHED AREAS**

**8.7.1** After 10 days and within 15 days of flooding the rough dressed trenched ground with water, the weeds appearing on the ground shall be rooted out carefully and the rubbish disposed off as directed by the Engineer-in-charge.

#### **8.7.2 Measurements**

Superficial area length and breadth of the weeded ground shall be measured correct to 0.1 meter.

#### **8.7.3 Rate**

The rate shall include the cost of all the labour and material involved in all the operations described above.

### **8.8 FINE DRESSING THE GROUND**

18.8.1 Slight unevenness, ups, and downs and shallow depressions resulting from the settlement of the flooded ground, in drying and from the subsequent weeding operations, shall be removed by fine dressing the surface to the formation levels of the adjoining land as directed by the Engineer-in-charge, and by adding suitable quantities of good earth brought from outside, if necessary.

#### **8.8.2 Measurements**

Length, breadth and depth of stacks shall be measured correct to a cm. The area shall be calculated in sqm.correct to two places of decimal.

#### **8.8.3 Rate**

The rate shall include the cost of all the labour and material involved in all the operations described above.

### **8.9 SPREADING GOOD EARTH**

8.9.1 Good earth shall be removed from stacks by head load and spread evenly over the surface on entire area with a twisting motion in uniform way to avoid segregation.

8.9.2 Measurements: The quantity shall be determined by the difference in the volume of good earth in stacks before and after spreading duly reduced for looseness in stacking by 20% of good earth.

8.9.3 Rate: The rate shall include of all the labour and material involved in all the operations described above, but excluding cost of the good earth which shall be paid for separately unless specifically described in the item.

### **8.10 SPREADING SLUDGE OR MANURE**

8.10.1 Good earth shall be thoroughly mixed with sludge or manure in specified proportion as described in the item and mixture shall be spread in as described in para 18.9.1 to the thickness as directed by the Engineer-in-Charge.

#### **8.10. 2 Measurements**

The quantity of good earth and sludge or manure mixed shall be determined by the difference in the volume of good earth and sludge or manure in stack, before and after spreading duly accounted for voids and looseness in stack.

#### **8.10. 3 Rate**

The rate shall include of all the labour and material involved in all the operations described as above, but excluding the cost of good earth sludge or manure which shall be paid for separately, unless otherwise described in the item.

## 8.11 MIXING OF GOOD EARTH AND SLUDGE/MANURE

8.11.1 The stacked earth before mixing shall be broken down top particle of sizes not exceeding 6 mm in any direction. Good earth shall be thoroughly mixed with sludge or manure in specified proportion as described in the item or as directed by the Engineer-in-charge.

### 8.11.2 Measurements

The quantity of good earth and sludge or manure mixed shall be determined by the difference in the volume of good earth, sludge or manure in stack, before and after spreading duly accounted for voids and looseness in stack.

### 8.11.3 Rate

The rate shall include the cost of all labour and materials involved in all the operations described above, but does not include the cost of good earth sludge or manure which shall be paid for separately, unless otherwise described in the item.

## 8.12 GRASSING WITH SELECT GRASS NO. 1

8.12.1 At the time of execution of work the area from where the grass roots are to be obtained shall be specified by the Engineer-in-Charge. No royalty shall be charged on this account from the contractor. Grass is to be arranged by contractor (cost of grass to be paid separately).

8.12.2 The soil shall be suitably moistened and then the operation of planting grass shall be commenced. The grass shall be dibbled at 10 cm, 7.5 cm, 5 cm apart in any direction or other spacing as described in the item. Dead grass and weeded shall not be planted. The contractor shall be responsible for watering and maintenance of levels and the lawn for 30 days or till the grass forms a thick lawn free from weeded and fit for moving whichever is later. Generally planting in other direction at 15 cm, 10 cm, spacing is done in the case of large open spaces, at 7.5 cm spacing in residential lawn and at 5cm spacing for Tennis Court and sports ground lawn. Rates are including cost of labour and material (grass shall be paid separately.)

8.12.3 Constant watch shall be maintain to ensure that During the maintenance period, any irregularities arising in ground levels due to watering or due to trampling by labour, or due to cattle 461 straying thereon, shall be constantly made up to the proper levels with earth as available or brought from outside as necessary and dead patches are replanted and weeds are removed.

### 8.12.4 Measurements

Length, breadth of the lawn grassed shall be measured correct to 0.1 meter and the area shall be calculated in sqm. correct to two places of decimal.

### 8.12.5 Rate

The rate shall include of all the labour and material involved in all the operations described above, excluding supply of the requisite quantity of good earth and grass so needed for properly maintaining the levels of the lawns, (payment of grass to be paid separately).

## 8.13 RENOVATION OF LAWNS

8.13.1 The area shall be first weeded out of all undesirable growth. The entire grass shall be scrapped (cheeled) without damaging roots and level of the grounds. Slight irregularities in surface shall be leveled off and the area shall then be forked so as to aerate the roots of the grass without, however uprooting them. Specified quantity of sludge or manure shall then be spread uniformly with wooden straight edge (phatti). The area shall then be slightly sprinkled with water so as to facilitate proper integration of the manure or sludge with the soil and later flooded. The contractor shall be responsible for watering, proper maintenance and tending of the lawn for 30 days or till the grass forms an lawn fit for mowing, whichever is later. All undesirable growths shall be constantly weeded out and all rubbish removed and disposed off as directed by the Engineer-in-Charge.

### 8.13.2 Measurements

Length, breadth of the lawn renovated shall be measured correct to 0.1 meter and the area shall be calculated in sqm. Correct to two places of decimal.

### 8.13.3 Rate

The rate shall include of all the labour and T&P (excluding RH pipe/grass) involved in all the operations described above, excluding the supply of the requisite quantity of good earth if so needed for proper maintenance of the levels of the lawns. The cost of the sludge or manure shall be measured and paid for separately, unless its supply is specifically included in the description of the item.

## 8.14 UPROOTING RANK VEGETATION AND WEEDS AND PREPARING THE GROUND FOR PLANTING SELECT GRASS NO. 1

8.14.1 Initially the area shall be dug up to a depth of 30 cm. and weeds and rank vegetarian with roots removed thereon by repeated forking, The whole area then shall be retrenched to a depth of 60 cm in the same manner as described in 8.1. Clods of excavated earth shall then be broken upto the size not more than 75 mm in any direction. The area shall then be flooded with water and after 10 days and within 15 days of flooding, weeds shall be uprooted carefully. The rubbish arising from the above operations shall be removed and disposed off in a manner directed by the Engineer-in-charge, away from the site. The earth shall then be rough dressed and fine dressed as described in 18.6 & 18.8.

### 8.14.2 Measurements

Length, breadth of uprooted area shall be measured correct to 0.1 meter and the area shall be calculated in sqm. correct to two places of decimal.

#### **8.14.3 Rate**

The rate shall include the cost of all the labour and material involved in all the operations described above.

#### **8.15 EXCAVATION AND TRENCHING FOR PREPARATION OF BEDS FOR HEDGE AND SHRUBBERY**

8.15.1 Beds for hedges and shrubbery are generally prepared to width of 60 cm. to 125 cm. and 2 to 4 meters respectively.

8.15.2 Beds for hedges and shrubbery shall be prepared in the following manner. The beds shall first be excavated to a depth of 60 cm. and the excavated soil shall be stacked on the sides of the beds. The surface of the excavated bed shall then be trenched to a further depth of 30 cm, in order to loosen the soil, in the manner described in 18.1. No flooding will be done at this stage but the top surface shall be rough dressed and leveled. The excavated soil from the top 60 cm depth of the bed stacked at the site shall then be thoroughly mixed with sludge over manure in the proportion 8:1 by ratio or other proportion described in the item. The mixed earth and manure shall be refilled over the trenched bed, leveled neatly and profusely flooded so that the water reaches even the bottom most layers of the trenched depth of the bed- The surface after full subsidence shall again be refilled with the earth and manure mixture, watered and allowed to settle and finally fine dressed to the level of 50 mm to 75 mm below the adjoining ground or as directed by the Engineer-in-Charge. Surplus earth if any, shall be disposed off as directed by the Engineer-in-charge. Any surplus earth if removed beyond initially lead shall be paid separately. Stones, bricks bats and other foreign matter if met with during excavation or trenching shall be removed and stacked within initially lead & lift, such material as is declared unserviceable by the Engineer-in-charge shall be disposed by spreading and leveling at places ordered by him. If disposed outside the initial lead & lift, then the transport for the extra leads will be paid for separately. If a large proportion of material unsuitable for the hedging and shrubbery operations is met with and earth from outside is required to be brought in for mixing with manure and filling, the supply and stacking of such earth will be paid for separately.

#### **8.15.3 Measurements**

Length, breadth and depth of the pit excavated and trenched shall be measured correct to a cm. The cubical contents shall be calculated in cubic meter correct to two places of decimal.

#### **8.15.4 Rate**

The rate shall include the cost of all the labour and material involved in all the operations described above. The rate shall not include the cost of supply & stacking of the manure unless the same is specifically included in the description of the item.

#### **8.16 DIGGING HOLES FOR PLANTING TREES**

8.16.1 In ordinary soil, including refilling earth after mixing with oil cake, manure and watering. Holes of circular shape in ordinary soil shall be excavated to the dimensions described in the items and excavated soil broken to clods of size not exceeding 75 mm in any direction, shall be stacked outside the hole, stones, brick bats, unsuitable earth and other rubbish, all roots and other undesirable growth met with during excavation shall be separated out and unserviceable material removed from the site as directed. Useful material, if any, shall be stacked properly and separately. Good earth in quantities as required to replace such discarded stuff shall be brought and stacked at site by the contractor which shall be paid for separately. The material shall be packed in old serviceable gunny bags of 50 kgs capacity approximately. The weight of gunny bag shall be deducted @ 1 kg per bag and payment shall be made for net quantity. The tree holes shall be manured with powdered Neam/castor oil cake at the specified rate along with farm yard manure over sludge shall be uniformly mixed with the excavated soil after the manure has been broken down to powder, (size of particle not be exceeded 6 mm in any direction) in the specified proportion, the mixture shall be filled in to the hole up to the level of adjoining ground and then profusely watered and enable the soil to subside the refilled soil shall then be dressed evenly with its surface about 50 to 75 mm below the adjoining ground level or as directed by the Engineer-in-charge.

8.16.1.2 Measurements: Holes shall be enumerated.

8.16.1.3 Rate; The rate shall include the cost of all the labour and material involved in all the operations described above, excluding the cost of supply and stacking the requisite quantity of manure/sludge and oil cake.

8.16.2 In Soil other than Ordinary Soil Where holes are dug in (a) Hard soil (b) Ordinary rock or (c) Hard rock, the above soils occurring independently over in conjunction with each other and /or ordinary soil in any hole, the different excavated soil shall be stacked separately. Excavation in hard rock shall be carried out by chiseling only. The stack measurement of ordinary rock and hard rock shall be reduced by 50% and of soil by 20% to arrive at the excavated volume. This excavation shall be paid for as extra over the rate for holes dug in ordinary soil above, at rate appropriate to particular soil concerned.

8.16.2.1 Sufficient quantity of good soil to replace the solid volume of stones, brick bats, unsuitable earth and other rubbish, all roots and other undesirable growth, ordinary and hard stacks shall be brought and stacked at site but the supply and stacking of such shall be paid for separately.

8.16.2.2 The useless excavated stuff shall be disposed off by spreading at places as ordered by the Engineer-in-charge. If such places are outside initially leads, carriage for the extra lead shall be paid for separately.

8.16.2.3 The ordinary soil excavated from the hole and the earth brought from outside shall then be mixed with manure screened through sieve of IS designation 16 mm in the proportion specified in the description of the item and filled with the pit and the same watered and finally dressed.

8.16.2.4 Measurements: The pit shall be enumerated. The volume of excavation in soil and other than a ordinary soil shall be determined by reducing the stack volume of the relevant soil with respective percentage for voids specified in 8.14.2.2.

8.16.2.5 Rate: The rate shall include the cost of all the labour and material involved in all the operations described above, including mixing refilling, watering, dressing etc. but shall not include (a) cost of manure over sludge (b) cost of supplying and stacking of good earth for replacement and (c) the cost of carriage beyond initial lead for disposing off useless materials. The excavation other than that of ordinary soil shall be paid extra over and above the rate if excavation in ordinary soil.

#### **8.17 M.S. FLAT IRON TREE GUARD**

8.17.1 M.S. Iron Riveted Tree Guard The tree guard shall be 600 mm in diameter and 2 meter high above ground level and 25 cm in below ground level.

8.17.1.1 The tree guard shall be framed of 4 nos. 25 x 6 m M.S. flat 2 meter long excluding displayed outward at lower and upto an extent 10 cm and 8 nos. 25 x 3 mm vertical M.S. Flat Riveted to 3 Nos. 25 x 6 mm Flat iron rings in two halves, bolted together 8 mm dia and 30 mm long M.S. bolts and nuts. The entire tree guard shall be given two coats of synthetic enamel paint of approved brand and manufacturer of required shade over a priming coat of ready mixed steel primer of approved branded manufacturer.

8.17.1.2 Measurement: The tree guard shall be enumerated.

8.17.1.3 Rate: The rate shall include the cost of all the labour and material involved in all the operations described above.

#### **8.17.2 M.S. Flat Iron Welded Tree Guard**

The tree guard shall be 600 mm in diameter and 2 meter high above ground level and 25 cm in below ground level.

8.17.2.1 The tree guard shall be framed of 4 nos. 25 x 6 m M.S. flat 2 meter long excluding displayed outward at lower and upto an extent 10 cm and 8 nos. 25 x 3 mm vertical M.S. Flat Riveted to 3 Nos. 25 x 6 mm Flat iron rings in two halves, bolted together 8 mm dia and 30 mm long M.S. bolts and nuts. The entire tree guard shall be given two coats of synthetic enamel paint of approved brand and manufacturer of required shade over a priming coat of ready mixed steel primer of approved branded manufacturer.

8.17.2.2 Measurement and Rates: as per para 8.16.1.2 and 8.16.1.3

#### **8.18 FILLING MIXTURE OF EARTH & SLUDGE OVER MANURE**

8.18.0 The separately specified earth and sludge shall be broken down to particles of size not exceeding 6 mm in any directions before mixing. Good earth shall be thoroughly mixed with sludge over manure in specified proportions as directed by Engineer-in-Charge. During the process of preparing the mixture as above, trenches shall be flooded with water and leveled.

#### **8.18.1 Measurements**

Measurement shall be made in (Length, breadth and height of stacks) cubic meter. The cubical contents shall be worked out to the nearest two places of decimal in cubic meter.

#### **8.18.2 Rate**

The rate shall include the cost of all the labour and material involved in all the operations described above, but do not include the good earth, sludge or manure which will be paid separately.

#### **8.19 EXCAVATION OF DUMPED STONE OR MALBA**

8.19.1 Excavation operations shall include excavation and getting out water if required. During the excavation stone, brick bats and other foreign material if met shall be removed and stacked within 50 meter lead and 1.5 m lift. Such material as is declared unserviceable by the Engineer-in-Charge be disposed within 50 m. The excavated surface shall be neatly dressed and leveled.

#### **8.19.2 Measurements**

Measurement shall be made in (Length, breadth and height of stacks) cubic meter. The cubical contents shall be worked out to the nearest two places of decimal in cubic meter.

#### **8.19.3 Rate**

The rate shall include the cost of all the labour and material involve in all the operations described above.

#### **8.20 EXCAVATION IN BAJRI PATH**

8.20.1 All excavated operations shall include excavation and stacking of serviceable and unserviceable material. Excavated surface of Bajri path shall be removed and stacked upto 50 meter lead and disposed material neatly dressed.

#### **8.20.2 Measurements**

Same as 8.18.2.

#### **8.20.3 Rate**

Same as 8.18.3.

#### **8.21 EXCAVATION OF WATER BOUND MACADAM**

8.21.1 All excavated operations shall include excavation, stacking of serviceable and unserviceable material. Excavation shall be straight and uniform in width. Soling stone and aggregate obtained from excavation of W.B.M.

shall be stacked separately and unserviceable materials disposed off with lead upto 50 meter and lift upto 1.50 meter and neatly dressed.

#### 8.21.2 Measurements

Measurement shall be made in (Length, breadth and height of stacks) cubic meter. The cubical contents shall be worked out to the nearest two places of decimal in cubic meter.

#### 8.21.3 Rate

The rate shall include the cost of all the labour and material involved in all the operations described above.

### **8.22 FLOODING THE GROUND WITH WATER AND MAKING KIARIES**

8.22.1 The water for flooding shall be of soft water and free from chemical and good for growing the trees and shrubs etc. Before flooding the kiaries shall be made in required size and shape as per directions of Officer-in-charge. After uprooting weeds from the trenched area and uprooting vegetation, kiaries shall be dismantled.

#### 8.22.2 Measurements

Measurement shall be made in sqm. of area.

#### 8.22.3 Rate

The rate shall be for 100 sqm of area and include the cost of all the labour and material involved in all the operations described above.

## **QUALITY ASSURANCE AND QUALITY CONTROL**

- I. The work shall conform to high standards of design and workmanship, shall be structurally sound and aesthetically pleasing. Quality standards prescribed shall form the backbone for the Quality Assurance and Quality Control system.
- II. At the site level the Contractor shall arrange the materials, their stacking/ storage in appropriate manner to ensure the quality. Contractor shall provide equipment and manpower to test continuously the quality of materials, assemblies, etc., as directed by the Engineer. The tests shall be conducted continuously and the results of tests maintained. In addition, the Contractor shall keep appropriate tools and equipment for checking alignments, levels, slopes and evenness of the surface.
- III. The Engineer shall be free to carry out such tests as may be decided by him at his sole discretion, from time to time, in addition to those specified in this document. The Contractor shall provide the samples and labour for collecting the samples. Nothing extra shall be payable to the Contractor for samples or for the collection of the samples.
  - a) The test shall be conducted at the Site laboratory that may be established by the Contractor or at any other Standard Laboratory selected by the Engineer.
  - b) The Contractor shall transport the samples to the laboratory for which nothing extra shall be payable. In the event of Contractor failing to arrange transportation of the samples in proper time Engineer shall have them transported and recover two times the actual cost from the Contractor's bills.
  - c) The testing charges shall be borne by the Contractor.
  - d) Testing may be witnessed by the Contractor or his authorised representative. Whether witnessed by the Contractor or not, the test results shall be binding on the Contractor.

**SECTION-9**  
**Bill of**  
**Quantities**

S.No.	SOR ITEM No.	DESCRIPTION	UNIT	RATE	QUANTITY	AMOUNT
1	V2_2.1	Earthwork in surface excavation not exceeding 30cm in depth but exceeding 1.5m in width as well as 10 sqm on plan including disposal of excavated earth upto 50m and lift upto 1.5m, disposed soil to be levelled and neatly dressed				
	V2_2.1.1	All kinds of Soil	Sq.M.	27.00	3150.0	85050.0
2	V2_2.6	Earthwork in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5m in width as well as 10 sqm on plan) including disposal of excavated earth. Lead upto 50m and lift upto 1.5m disposed earth to be levelled and neatly dressed.				
	V2_2.6.1	All kinds of Soil	Cum	127.00	2140.0	271780.0
3	V2_2.10	Excavating trenches of required width for pipes, cables, etc. including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 1.5m including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50m:				
	V2_2.10.1	All kinds of Soil				
	V2_2.10.1.1	Pipes,cables,etc, not exceeding 80mm dia.	Meter	89.00	1450.0	129050.0
4	V2_2.27	Supplying and filling in plinth under floors including, watering, ramming consolidating and dressing complete.				
	V2_2.27.1	Crusher Stone Dust	Cum	628.00	740.0	464720.0
	V2_2.27.2	Local Sand	Cum	1201.00	620.0	744620.0
	V2_2.27.3	Moorum/ Hard Copra	Cum	570.00	940.0	535800.0



5	V2_2.31	Clearing jungle including uprooting of rank vegetation, grass, brushwood, trees and saplings of girth upto 30 cm measured at a height of 1m above ground level and removal of rubbish upto a distance of 50 meter outside the periphery of the area cleared.	100 SqM	341.00	950.0	323950.0
6	V2_2.33	Felling trees of the girth (measured at a height of 1m above ground level) including cutting of trunks and branches removing the roots and stacking of serviceable material and disposal of unserviceable material				
	V2_2.33.1	Beyond 30cm girth upto and including 60cm girth	Each	104.00	30.0	3120.0
		Beyond 60cm girth upto and including 120cm girth	Each	466.00	30.0	13980.0
7	V2_2.34	Diluting and injecting chemical emulsion for Post-Constructional anti-termite treatment (excluding the cost of chemical emulsion).				
	V2_2.34.1	Along external wall where the apron is not provided using chemical emulsion @ 7.5 liters/ sq.m. of the vertical surface of the substructure to a depth of 300mm including excavation channel along the wall and rodding etc. complete.				
	V2_2.34.1.1	With Chlorpyrifos/ Lindane E.C.20% with 1 % concentration	Meter	9.00	1700.0	15300.0
8	V2_3.4	Cement Mortar 1:4 (1 cement: 4 fine sand)	Cum	3520.00	140.0	492800.0
9	V2_3.6	Cement Mortar 1:6 (1 cement: 6 fine sand)	Cum	2810.00	125.0	351250.0
10	V2_4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering All work up to plinth level				
	V2_4.1.1	Cement Concrete grade M-20 (Nominal Mix) with 20mm maximum size of stone aggregate	Cum	4594.00	225.0	1033650.0
	V2_4.1.5	Cement Concrete grade M-10 (Nominal Mix) with 40mm maximum size of stone aggregate	Cum	3528.00	140.0	493920.0

11	V2_4.2	Providing and laying cement concrete in retaining walls, return walls (any thickness) including attached pilasters, columns, piers,abutments, pillars,posts,struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window sills, fillets etc. up to floor twolevel,excluding the cost of centering, shutteringand finishing:				
	V2_4.2.1	Concrete grade M-20 (nominal mix) with 20mm maximum size of stone aggregate	Cum	4751.00	140.0	665140.0
	V2_4.2.4	Concrete grade M-10 (nominal mix) with 20mm maximum size of stone aggregate	Cum	3752.00	110.0	412720.0
12	V2_4.3	Providing and laying cement concrete in kerbs,steps and the like at or near ground level excluding the cost of centering, shuttering and finishing				
	V2_4.3.1	Cement Concrete grade M-15 (nominal mix) with 20mm maximum size of stone aggregate	Cum	4154.00	120.0	498480.0
13	V2_4.8	Precasting and placing in position 125mm dia Bollards 600mm high of required shape including providing M.S. Pipe sleeve 50mm dia. 300mm long in the Bollard and M.S. Pipes 40mm dia. And 450mm long with 150x150x6mm M.S. plate welded at bottom and embedded 150mm in cement concrete grade M-10 (Nominal Mixwith 20mm maximu size of stone aggregate) including necessary excavation of size 250x250x450mm deep for the same in bitumen/ concrete pavement at specified spacing	Each	416.00	300.0	124800.0
14	V2_5.1	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level:				
	V2_5.1.1	Cement concrete grade M-20 (Nominal Mix) with 20mm maximum size of stone aggregate	Cum	4728.00	320.0	1512960.0
15	V2_5.2	Reinforced cement concrete work in walls (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts etc. up to floor twolevelexcluding cost of centering,shuttering, finishing and reinforcement				

	V2_5.2.1	Cement concrete grade M-20 (Nominal Mix) with 20mm maximum size of stone aggregate	Cum	5050.00	220.0	1111000.0
16	V2_5.16	Providing precast cement concrete Jali of cement concrete grade M-15 (Nominal Mix with 20mm maximum size of stone aggregate) reinforced with 1.6mm dia mild steel wire including centering and shuttering, roughening cleaning, fixing and finishing in cement mortar 1:3 (1 cement: 3 fine sand) etc. complete excluding plastering of the jambs, sills and soffits				
	V2_5.16.1	50mm thick	Sq.M.	481.00	180.0	86580.0
17	V2_5.17	Encasing rolled steel sections, in beams and columns, with cement concrete grade M-15 (nominal mix with 20mm maximum size of stone aggregate) including centering and shuttering complete but excluding cost of reinforcement.	Cum	6690.00	50.0	334500.0
18	V2_5.20	Reinforcement for RCC work including straightening, cutting, bending, placing in position and binding including cost of binding wire upto floor two level including all wastage etc. complete				
	V2_5.20.4	Hot rolled deformed bars	Kg	60.00	24500.0	1470000.0
19	V2_6.2	Brickwork with well burnt chimney bricks in bulls patent trench kiln, crushing strength not less than 25kg/sqcm and water absorption not more than 20% in foundation and plinth				
	V2_6.2.2	Cement Mortar 1:6 (1 cement : 6 coarse sand)	Cum	3813.00	650.0	2478450.0
20	V2_7.1	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete M-5 stone aggregate 20mm nominal size) at plinth level with:				
	V2_7.1.1	Cement mortar 1:6 (1 cement: 6 coarse sand)	Cum	2671.00	180.0	480780.0
21	V2_7.6	Coursed rubble masonry (first sort) with hard stone in foundation and plinth with:				
	V2_7.6.1	Cement mortar 1:6 (1 cement: 6 coarse sand)	Cum	2970.00	110.0	326700.0

22	V2_7.12	Stone work in plain ashlar in super structure upto floor twolevel in cement mortar 1:6 (1 cement : 6 coarse sand) including pointing with cement mortar 1:2 (1 white cement: 2 stone dust) with an admixture of pigment matching the stone shade:				
	V2_7.12.1.1	Red Sand stone	Cum	17244.00	20.0	344880.0
	V2_7.12.1.2	White Sand Stone	Cum	18793.00	15.0	281895.0
23	V2_7.33	Providing and fixing stone jali 40mm thick throughout incement mortar 1:3 (1 cement: 3coarse sand) including pointing in white cement mortar 1:2 ( 1white cement: 2 stonedust) with an admixture of pigment, matching the stone shade, jali slab without any chamfers etc.				
	V2_7.33.1	Red Sand Stone	Sq.M.	4790.00	85.0	407150.0
	V2_7.33.2	White Sand stone	Sq.M.	4810.00	85.0	408850.0
24	V2_8.2	Providing and fixing 16mm thick gang saw cut mirror polished premoulded and prepolished machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size of approved shade, colour and texture laid over 20mm thick base cement mortar 1:4 )1 cement : 4 coarse sand) with joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edge to give high gloss finish etc. complete at all levels.				
	V2_8.2.8	Granite of any colour and shade				
	V2_8.2.8.2	Area of slab over 0.50sq.m.	Sq.M.	2544.00	950.0	2416800.0
25	V2_10.2	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	kg	62.00	13400.0	830800.0

26	V2_10.16	Steel work in built-up tubular trusses including cutting, hoisting fixing in position and applying a priming coat of approved steel primer, welded and bolted including special shaped washers etc. complete				
	V2_10.16.1	Hot finished welded type tubes	kg	83.00	18250.0	1514750.0
27	V2_11.23	Marble Stone flooring with 16mmthk marble stone (sample of marble shallbe approved by Engineer-in-charge of minimum size 0.45sqm) over 20mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with grey cement slurry including rubbing and polishing complete with:				
	V2_11.23.1	Makrana White Second Quality	Sq.M.	1415.00	350.0	495250.0
	V2_11.23.5	Udaipur Green Marble	Sq.M.	1114.00	850.0	946900.0
28	V2_11.25	Extra for marble stone flooring in treads of steps and risers using single length upto 2.00meter	Sq.M.	154.00	450.0	69300.0
29	V2_11.26	Kota Stone slab 25mm thick flooring over20mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete with base of cement mortar (1 cement: 4 course sand) 1:4 (minimum size of kota stone 0.25 sqm)	Sq.M.	819.00	950.0	778050.0
30	V2_11.28	40mm thick fine dressed stone flooring over 20mm (average) thick base of cement mortar 1:5 (1 cement: 5 coarse sand) with joints finished flush				
	V2_11.28.1	Red Sand Stone	Sq.M.	423.00	320.0	135360.0
	V2_11.28.2	White Sand Stone	Sq.M.	442.00	325.0	143650.0

31	V2_11.39	Providing and laying polished vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption's less than 0.08% and conforming to IS:15622 of approved make in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement: 4 coarse sand) including grouting the joints with white cement and matching pigments etc., complete				
	V2_11.39.2	Size of Tile 60x60 cm x 10 mm	Sq.M.	1109.00	550.0	609950.0
	V2_11.39.3	Size of Tile 80x80 cm x 10 mm	Sq.M.	1566.00	180.0	281880.0
32	V2_11.47	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade reflective type rubber moulded glossy colour paving block made by block making machine with strong vibratory compaction and of approved size and shape laid in required colour and pattern over and including 60mm thick compacted bed of stone dust filling the joints with sand etc. all complete as per the direction of Engineer in charge including locking edges wherever required with cement concrete M15 grade or cement mortar 1:3 with pigment of required shade to match the colour/shade of block including cost of labour, material, etc. all complete	Sq.M.	570.00	4250.0	2422500.0
33	V2_11.49	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement in position to the required line, level and curvature jointed with cement mortar 1:3 (1 cement: 3 coarse sand) including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm) including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge).	Cum	5098.00	110.0	560780.0

34	V2_12.47	Providing and fixing UV stabilised fiberglass reinforced plastic sheet roofing up to any pitch including fixing with polymer coated 'J' or 'L' hooks, bolts & nuts 8mm dia. G.I. plain/btumen washers complete but excluding the cost of purlins, rafters, trusses etc. the sheets shall be manufactured out of 2400 TEX panel rovigs incorporating minimum 0.3% Ultra-violet stabiliser in resin system under approximately 2400 psi and hot cured. They shall be of uniform pigmentation and thickness without air pockets and shall conform to IS 10192 and IS 12866. the sheets shall be opaque or translucent, clear or pigmented, textured or smooth as specified.				
	V2_12.47.1	2mm thick corrugated (2.5" or 4.2" or 6") or step-down (2" or 3" or 6") as specified	Sq.M.	891.00	180.0	160380.0
35	V2_12.48	Providing & fixing pressed clay tile (Mangalore tile) 20mm nominal thickness and of approved size and as per approved pattern ceiling on steel frame work complete (steel frame work to be paid separately).	Sq.M.	246.00	310.0	76260.0
36	V2_12.49	Providing & laying pressed clay tile ridge (Mangalore tile) of 20mm thickness of approved pattern ceiling over steel frame work complete (steel frame work to be paid separately).	Sq.M.	113.00	350.0	39550.0

37	V2_12.50	Supply and Installation of precoated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer in charge) 0.50mm +-5% total coated thickness (TCT) thick Zinc coating 120gsm as per IS: 277 in 240mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyster top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratched while transportation and should be supplied in single length upto 12 meter or as desired by Engineer-in-charge. The sheet shall be fixed using self drilling/ self tapping screws of size (5.5x55mm) with EPDM seal or with polymer coated J or L hooks, bolts and nuts 8mm diameter with bitumen and GI limpet and washers filled with white lead complete upto any pitch in horizontal/ vertical or curved surfaces excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.	Sq.M.	578.00	1050.0	606900.0
38	V2_13.1	12mm cement palster of Mix:				
	V2_13.1.2	1:5 (1 cement : 5 fine sand)	Sq.M.	102.00	7850.0	800700.0
39	V2_13.3	20mm cement plaster of mix:				
	V2_13.3.2	1:5 (1 cement : 5 fine sand)	Sq.M.	146.00	5450.0	795700.0
40	V2_13.41	Distempering with oil bound washable distemper of approved brand and manufacturer to give an even shade				
	V2_13.41.1	New work (Two or more coats) over and including priming coat with cement primer	Sq.M.	52.00	8750.0	455000.0
41	V2_13.45	Finishing walls with textured exterior paint of required shade				
	V2_13.45.1	New work (Two or more coats applied @ 3.28lts/ 10sqm) over and including base coat of water proofing cement paint applied @ 2.20kg/ 10sqm	Sq.M.	125.00	15450.0	1931250.0
42	V2_13.46	Finishing Walls with Acrylic Smooth exterior paint of required shade				
	V2_13.46.1	New work (Two or more coat applied@1.67 Ltr/10sqm over and including base coat of water proofing cement paint applied @2.20kg/ 10sq.m.)	Sq.M.	64.00	12450.0	796800.0



43	V2_13.61	Painting with synthetic enamel paint of approved brand and manufacturer to give an even shade:	Sq.M.	45.00	7850.0	353250.0
	V2_13.61.1	Two or more coats on new work				
44	V2_16.9	Boring, providing and installing bored cast-in-situ reinforced cement concrete pile of specified diameter and length below the pile cap M20 in cement concrete, to carry a safe working load not less than specified, excluding the cost of steel reinforcement but including the cost of boring with, bentonite solution and temporary casing of appropriate length for setting out and removal of same and the length of the pile to be embedded in the pile cap etc. all complete, including removal of excavated earth with all lifts and leads ( Length of pile for payment shall be measured upto bottom of pile cap).				
	V2_16.9.1	300mm dia piles	Meter	1165.00	900.0	1048500.0
45	V2_17.1	Providing and fixing aluminium work for doors, windows, ventilators, for partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixed with rawl plugs and screws or with fixing clips, or with expansion holdfastners including necessary filling up of gaps at junctions, at top , bottom and sides with required PVC/neoprene felt etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing/ panelling, C.P. brass/ stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing and panelling to be paid for separately).				
	V2_17.1.1.2	Powder coated Aluminium (minium thickness of powder coating 50 micron)	Kg	366.00	650.0	237900.0

46	V2_17.3	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with PVC/ neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge (Cost of aluminium snap beading shall be paid in basic item)				
	V2_17.3.2	With Float glass panes of 5.50mm thickness	Sq.M.	859.00	350.0	300650.0
47	V2_19.1	Trenching in ordinary soil upto a depth of 60cm including removal and stacking of serviceable materials and then disposing of by spreading and neatly levelling with in a lead of 50m and making up the trenched area to proper levels by filling with earth or earth mixed with sludge or/ and mahure before and after flooding trench with water (excluding cost of imported earth, sludge or manure).	Cum	129.00	1410.0	181890.0
48	V2_19.2	Supplying and stacking of good earth at site including royalty and carriage up to 1km (earth measured in stacks will be reduced by 20% for payment).	Cum	184.00	8750.0	1610000.0
49	V2_19.4	Supplying and stacking at site dump manure from approved source, including carriage up to 1km (manure measured in stacks will be reduced by 8% for payment)				
	V2_19.4.1	Screened through sieve of I.S. designation 20mm	Cum	105.00	6540.0	686700.0
50	V2_19.5	Rough dressing the trenched ground including breaking clods	100 sqm	42.00	1280.0	53760.0
51	V2_19.6	Uprooting weeds from the trenched area after 10 to 15 days of its flooding with water including disposal of uprooted vegetation	100 sqm	137.50	1460.0	200750.0
52	V2_19.9	Mixing earth and sludge or manure in proportion specified or directed	Cum	102.00	6500.0	663000.0
53	V2_19.10	Grassing with 'Doob' grass including watering and maintenance of the lawn for 30 days or more till the grass forms a thick lawn free from weeds and fit for mowing including supplying good earth if needed (the good earth shall be paid for separately)				

	V2_19.10.2	In rows 7.5 cm apart in either direction	100 sqm	324.00	1050.0	340200.0
54	V2_19.13	Preparation of beds for hedging and shrubbery by excavating 60cm deep and trenching the excavated base to a further depth of 30cm, refilling the excavated earth after breaking clods and mixing with sludge or manure in the ratio 8:1 (8 parts of stacked volume of earth after reduction by 20% : one part of stacked volume of sludge or manure after reduction by 8%), flooding with water, filling with earth if necessary, watering and finally fine dressing, levelling etc. including stacking and disposal of materials declared unserviceable and surplus earth by spreading and leveling as directed, within a lead of 50m lift up to 1.5m complete (cost of sludge, manure or extra earth to be paid for separately)	Cum	62.00	4250.0	263500.0
55	V2_19.14	Digging holes in ordinary soil and refilling the same with the excavated earth mixed with manure or sludge in the ratio of 2:1 by volume (2 parts of stacked volume of earth after reduction by 8%) flooding with water, dressing including removal of rubbish and surplus earth, if any with all leads and lifts (cost of manure, sludge or extra good earth if needed to be paid for separately):				
	V2_19.14.1	Holes 1.2m dia and 1.2m deep	Each	182.00	900.0	163800.0
	V2_19.14.2	Holes 60cm dia. And 60cm deep	Each	24.00	1250.0	30000.0
56	V2_19.16	Providing and fixing M.S.flat iron tree guard 60cm dia. and 2m height above ground level formed of 4 nos. 25x6mm and 8nos. 25x3mm vertical M.S.flats rivetted to 3 nos. 25x6mm M.S. flat iron rings in two halves, bolted together with 8mm dia. And 30mm long bolts including painting two coats with paint of approved brand and manufacture over a coat of priming, complete in all respects.	Each	2037.00	120.0	244440.0

	V2_19.16.1	Labour rate for Item No. 19.16	Each	671.00	250.0	167750.0
57	V2_19.19	Edging with bricks laid dry length wise including excavation, refilling,consolidating with hand packing and spreading neatly surplus earth with a lead of 50m:				
		40 class designation				
	V2_19.19.1.1	Chimney Bricks	Meter	34.00	2650.0	90100.0
58	V2_19.24	Flooding the ground with water including making kiaries and dismantling the same	100 sq.m.	78.00	8650.0	674700.0
59	V2_20.1	Centering and shuttering including strutting, propping etc. and removal of form for:				
	V2_20.1.1	Foundations, footings,bases of columns, etc. for mass concrete	Sq.M.	138.00	950.0	131100.0
	V2_20.1.2	Walls (any thickness) including attached pilasters, butteresses, plinth and string courses etc.	Sq.M.	216.00	840.0	181440.0
	V2_20.1.3	Suspended floors, roofs, landings,balconies and access platform	Sq.M.	227.00	670.0	152090.0
	V2_20.1.5	Lintels, beams, plinth beam,girders, bressumers and cantilevers	Sq.M.	203.00	1120.0	227360.0
	V2_20.1.6	Columns, Pillars,Piers, Abutments, Posts and Struts	Sq.M.	282.00	1240.0	349680.0
60	V2_21.1	Hire charges of Diesel Truck - 9 tonne	Day	1150.00	90.0	103500.0
61	V2_21.2	Hire charges of Water tanker	Day	1275.00	90.0	114750.0
62	V2_21.4	Hire charges of Tractor with trolley	Day	800.00	120.0	96000.0
63	V2_23.9	Providing and fixing Chlorinated PolyvinylChloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain and brass threaded fittings. This includes jointing of pipes & fittings with one step CPVC solvent cement, trenching, refilling & testing of joints complete as per the direction of Engineer - in charge. External Work.				
	V2_23.9.3	25mm nominal outer dia. Pipes	Meter	133.00	1250.0	166250.0
	V2_23.9.4	32mm nominal outer dia. Pipes	Meter	172.00	1450.0	249400.0
	V2_23.9.6	50mm nominal outer dia. Pipes	Meter	411.00	1050.0	431550.0

64	V2_24.3	Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement: 2 fine sand) including testing of joints etc.complete:				
	V2_24.3.4	300mm dia. R.C.C. pipe	Meter	486.00	350.0	170100.0
	V2_24.3.5	450mm dia. R.C.C. pipe	Meter	765.00	210.0	160650.0
65	V2_24.13	Providing and laying below ground unplasticised PVC pipe to withstand working pressure of 4 kg/cm <sup>2</sup> solid waste pipes confirming to IS:13592 and IS:4985 including jointing with seal ring confirming to IS:5282 leaving 10mm gap for thermal expansion all necessary fittings etc. complete				
	V2_24.13.1	110mm diameter OD	Each	159.00	395.0	62805.0

### NON SOR ITEMS

#### DEVELOPMENT OF VATIKA SPACES AT VARIOUS PLACES UNDER SMART CITY MISSION FOR BHOPAL CITY (NON-SOR ITEMS)

S.No.	NON-SOR	DESCRIPTION	UNIT	RATE	QUANTITY
1	NON-SOR	Performing Topographic Survey by Total Station method and preparation of Design/Drawing Layout based on street/colony Conditions by the Architect considering existing features and contour levels, preparation of development plan and get it approved by the Engineer-in-charge prior to final execution. (Within 10 days after assigning the street/colony)	Each		20.0

2	NON-SOR	Demolition/Dismantling manually/by mechanical means including removal of existing street and park features, foot path, other visible and manmade structures that obstruct the new design layout and stacking of serviceable material and disposal of unserviceable material where required, transportation , equipments, complete in all respect and as per the direction of Engineer-in-charge.	Sq.m.	6500.0
3	NON-SOR	Stamped Concrete: Providing, Applying and finishing the top surface of concrete, in accordance with sprinkling of approved color hardener at the rate of 0.390 kg./sq.ft., Floating the surface with different types of floaters, application of release agent at the rate of 0.013 kg./sq.ft , stamping the concrete with stamping tools, cleaning the surface with water and application of acrylic based sealer for finishing. with joints ( by groove cutting of size 4 mm x 20 mm in panel size approximately 3 mtr x 3 mtr as per site.) and formwork.	Sq.M.	2650.0
4	NON-SOR	Installation and use of Wood Plastic Composite (WPC) Products of appropriate thickness and water absorption properties for different outdoor elements like pergolas, decks, railings, louvers, benches, walk bridges, etc. complete factory manufactured and installation on site along with all accesories and as per the direction of Engineer-in-charge	Sq.M.	350.0
5	NON-SOR	Drip Irrigation system: Providing & Installation of Drip Irrigation System with Smart controls, Pressure regulation, Drip Conversion, High Efficiency Nozels including Sub surface Drip and Tree Watering for different dia. of pipes complete system in all respects and as per the approval of Engineer-in-charge	R.Mt.	3000.0
6	NON-SOR	Construction, Procurement and Installation of Tensile membrane structure for Sitting Spaces, complete with all necessary fittings and fixtures along with labour required for the completion of work, inclusive of all type of civil and fabrication along with painting & transportation. Membrane should range between 800 GSM to 1200 GSM and as per the direction of Engineer-in-charge	Sq.M.	240.0

7	NON-SOR	Pavement marking- Providing and applying 2.50mm thick hot applied thermoplastic paint for markings of appropriate colour on bituminous / concrete / surface with fully automatic machines as per detailed drawings / engineers instructions. This includes-edge line marking for Lane markings, pavement markings / arrows/ letters/ symbols,etc. For pedestrian markings at junctions (zebra crossing), for pedestrian markings at junctions (stop line), letter markings at junctions, direction arrow & symbol markings at junctions and for lane markings. Execution of work as directed by Engineer In-charge.	Sq.M.		2350.0
8	NON-SOR	Different Track and pavement track marking-Providing and Laying of PLASTITRAK, Roll-on Surfacing Material -A Solvent Free, High Build, Two pack, Seamless, Tough, skid resistant 1.0-1.5 mm thick red ( or as required ) based on Gloss and color retaining Acrylic Cross Linking Resin System for Cycle track and similar applications including surface cleaning and cost of all material etc. complete. Execution of work as directed by Engineer In-charge.	Sq.M.		1640.0
9	NON-SOR	Installation and creating of Murals/ paintings on Walls for beautification out of glazed tiles/ stones/ metals/recycled materials, etc. complete including the cost of labour,dressing, painting on walls with all the materials and transportation and as per the approved designs and drawings by the Engineer-in-charge	Sq.M.		300.0
10	NON-SOR	P.C.C. Saucer Drain channel of size 900 x 300 (wide) x 100 mm fixed on 20 mm thick cement mortar 1:4 (1 cement: 4 coarse sand) over P.C.C.bed as per Drawing. Align joints of kerbstone and saucer drain.	Each		750.0

11	NON-SOR	<p>Providing and fixing 6mm thk. anti skid ceramic tiles conforming to I.S.15622-2006 of approved quality, make, colour, shade and size in specified pattern in floors using tile adhesive of thickness not less than 3mm, including cutting, leveling, jointing, filling the joints with cement grout of approved colour, finishing, cleaning, curing etc complete as directed by Engineer In Charge.</p> <p>Note: The tiles shall have at least 15% recycled content. The tiles shall be procured from the manufacturing plants located within 500 Km from the project site. Size of Tile 600x600 mm</p>	Sq.M.	850.0
12	NON-SOR	<p>Design, fabricate, Test, certify, supply, installation, field test, protection, cleaning and handover of Semi-unitised glass canopy system with aluminium mullion &amp; Transom supported to the Hot Dip Galvanised Mild Steel frame work, bimetallic separators should be provided between aluminium &amp; Hot Dip Galvanised Mild Steel. Design to with stand a wind pressure not less than as mentioned in Technical specification. The Canopy systems are to be fully prefabricated assembled units completed with factory glazed panels/sash frames units &amp; site fixed frames &amp; installed with SS bolts and brackets on site. The quote includes interface details such as flashing, sealants, extruded capping(if required), brackets and any sub frame as required. All internal &amp; external exposed aluminium extrusion shall be Powder coated &amp; PVDF finish respectively colour to architect's selection (Quote glass price separately.).The design shall accommodate the building movements, thermal expansion and the seismic movements. The Hot as per the IS standards. It shall be treated with anti-corrosive coating and three coats of Micaceous iron oxide of 100 microns each after shot blasting as per BS standards. Fire rating as per specifications. Semi-Unitised System (Excluding Glass) Laminated Glass 10mm HS Glass + 1.52mm PVB + 10mm HS Glass (As per Specification)</p>	Sq.M.	150.0
13	NON-SOR	<p>Providing and fixing S.S. 304 Grade Stainless steel railing with 40 mm diameter and 1.5 mm thick at top, 40 mm diameter and 1.5 mm thick vertical support spacing as per drawing and design including fabricating, fixtures, erecting, necessary welding, grinding, finishing, buffing to stainless steel pipe etc. complete.</p>	Kg	2450.0



14	NON-SOR	Providing & fixing in position light fixtures of size and section including necessary decorative designs, patterns, mouldings etc.& painting one coat of approved primer & two coat of enamel paint of approved shade and quality, all finished smooth & and all complete as per designs/patterns shown in drawings. The contractor shall make arrangements for their delivery cartage, loading, unloading, safe custody & proper safety of all such items at his own cost. This is excluding the Cost of cabling & related equipments. Refer annexure for related pictures.			
		Bollard Lights- Integral IP 44 bollard, housing in die cast aluminium with UV stabilised polycarbonate diffuser suitable for 1x9 W and 1x15W LED Lamps. Installation as directed by Engineer In-charge.	Each		7500.0
		Up- Lighter- Integral bush light luminaire, black powder coated housing. 3 x 3W warm white LED enclosed with glass cover in frame. Mounting bracket with aiming the objects. Ingress protection- IP 65. Installation as directed by Engineer In-charge.	Each		6150.0
15	NON-SOR	Providing & Laying Outdoor play court area (7.5MX15M) with Poly vinyl chloride multilayer flooring with thickness of 5.2/5.5mm and surface wear layer of 1.2/1.8mm to be laid on the PCC bed.	Each		6.0
16	NON-SOR	Designing, fabrication & installation of Multi activity Play Equipment for outdoors including Sliding, Swinging, climbing & Exploring for childrens of age group 5 -12 years, for play zone of 10MX 7.5M, with maximum platform height of 1.5M and for 8-10 children to play simultaneously.	Nos.		20.0
17	NON-SOR	Plantation of Hedges, Shrubs & Trees among the listed as under and other species, their purchase, transportation and maintenance all complete and as per directed and approved by the Engineer-in-charge			
		Name of Trees and Shrubs listed as below- Plumeria pudica, Plumeria rubra, Dyspis lutences, Raphis excelsa, Ficus benjamina, Duranta erecta, ficus benjamina variegated, Alstonia scholaris, Cassia fistula, Jatropha intergerrima, Wodyetia bifurcata, Spathyphyllum, Bougainville, Jacaranda mimosifolia, Raphis excelsa, Delonix regia, Duranta erecta, etc.			

		Ground Cover Plants - Height not morethan 0.15m and basically species for ground cover horizontally	Each		5000.0
		Surface Hedges - Height ranging between 0.15 to 0.40m height, hedges of different colour and spacing as approved by Engineer-in-charge	Each		7000.0
		Bushes - Height ranging between 0.4 to 1.0m	Each		5000.0
		Tres - Height ranging between 1.0M to 2.50M	Each		1500.0
18	NON-SOR	Grass pavers: Providing and fixing 60 mm thick factory made cement concrete interlocking prefab grass pavers in grey colour of cement concrete of mix 1: 1.5: 3 ( 1 cement : 1.5 coarse sand , 3 graded stone aggregate 20mm nominal size) manufactured in joint less moulds on vibrator table finished smooth as per required shape size and pattern to be laid over 50mm thk. sandbed on top of consolidated earth after proper levelling and dressing of ground surface to the requisite slopes complete in all respects as per directions and instructions of engineer in charge. Preferable Size: 300x300x60mm	Sq.M.		1450.0
19	NON-SOR	Tactile for footpath- Supply and laying of Cement Concrete Wet Cast Chequered Tiles 300 x 300 x 30mm, Colour as approved by BMC and to be UV light resistant. Chequered Tiles must confirm to IS 13801-1993. Installation includes 150mm GSB base with 50 mm 1-2-4 PCC base and 1-5 mortar mix for fixing of tiles with level to match with footpath concrete paver blocks and as directed by Engineer in charge. Item also includes all materials, labour, equipments, tools, watering, cleaning etc. complete.Scope of work also includes strong vibratory compaction above	Sq.M.		1450.0

20	NON-SOR	Paver Slabs: Providing and fixing 60/80mm thick factory made cement concrete interlocking paver slabs of different sizes and colours of M-30 grade reflective type rubber moulded glossy colour made by block making machine with strong vibratory compaction and of approved size and shape laid in required colour and pattern over and including 60mm thick compacted bed of stone dust filling the joints with sand etc. all complete as per the direction of Engineer in charge including locking edges wherever required with cement concrete M15 grade or cement mortar 1:3 with pigment of required shade to match the colour/shade of paver slab including cost of labour, material, etc. all complete	Sq.M.	1850.0
21	NON-SOR	Dual system Litter Bins- Provision at appropriate location inside the Vatikas at a minimum spacing 400m c/c, and as directed by Engineer In-charge. Supply and install Dual Bin system make SS SF 304, for a rust free life capacity of 50ltrs each. The Foundation slab shall be made in min M25 concrete. The cast iron nuts, bolts, shall be rust proof deep galvanized powder coated etc The stainless steel shall be treated to be resistant in all weathers.	Each	60.0
22	NON-SOR	Laying of one number PILC/ PVC insulated and PVC sheathed power cable of grade exceeding 1.1 kV but not exceeding 11 KV of size not exceeding 400 Sq.mm in the existing duct/ trench as required and as per the approval of Engineer-in-charge	R.Mt.	9000.0

23	NON-SOR	<p>Facility/ Informatory Signage- Providing and fixing sign boards made out of 2 mm aluminium sheet- size 80 x 60 cms. Rectangle as per design of IRC 67-2012. Pre treated with phospheting process and acid etching- coated with one of best quality epoxy primer and two coats of best quality epoxy paint- reflectorised with retro reflectivesheeting as per latest M.O.S.T. Specifications- 3.1 m long stand post and frame fabricated from suitable size iron angle of 35 x 35 x 3 mm, 75 x 75 x 6 mm as required- painted with best quality epoxy coatings in black and white bends. The details of symbols/ letters/ words for each board shall be as per the instruction of engineer in charge. The fixing shall be as per site in 1-2-4 CC block of size 45 x 45 x 60 cms. for each leg. including excavation, curing etc. complete under the supervision of engineer in charge. Civil work shall be paid separately in the above item.</p>	Each		40.0
24	NON-SOR	<p>Seating Bench- Provision along footpath minimum spacing 200m c/c, or as directed by Engineer In-charge. Supply and install Seating of 1.75m L x 0.6m W manufactured of M-30 grade concrete using vibro compaction process and suitably reinforced for long use, treated with special anti-corrosive, water proof coating so as to make the surface glossy and water proof. To accomodate 3-4 persons. It shall be placed on footpath in a way that the pedestrians pass-by without disturbing the user. Installation as per the direction of Engineer in charge, complete incl. all consumables , TandP and Labours required for the job.</p>	Each		80.0

25	NON-SOR	Drinking Water Fountain- Spacing 600m c/c. SS Cabinet finish shall be Sandstone powder coated paint on galvanized steel or brushed stainless steel. Cooling system shall use R-134a refrigerant. Shall be listed by Underwriters Laboratories to U.S. and Canadian standards and conform to European Union Directives. Installation as directed by Engineer In-charge.	Each		5.0
26	NON-SOR	Supplying & Providing Corbels stone of 50mm to 55mm thick with natural finish & four side machine cut Granite Cobells of different colours & fixing in 1:6 cement mortar on an average 50mm thick cement bed. Gaps in two stones to be filled by 1:3 cement mortar & filler of colour cement with sunk pointing and machine cut straight line looks circular shape or required shape as per detail drawing & specifications & as per the instructions of engineer in charge	Sq.m		1120.0
27	NON-SOR	Supply & fixing precast cylindrical Bollard of size 200.00 & 400 mm dia & 375 mm height, manufactured with M -30 grade of concrete by vibro compaction process using FRP moulds & with washed fine grit finish on the exposed surface of the bollard of approved colour & texture as specified by Engineer in charge	No.s		360.0
28	NON-SOR	Providing & fixing of Clay Tiles for footpath and other pedestrian spaces as per approved size and shape as per detailed drawings & specifications	Sq.m		3200.0

29	NON-SOR	Supply & installation of seating with honed finish 50mm thick sand stone (rainbow/ teak wood) duly ploished with two coats of sealer of approved brand, with base as brick work and plastered & filling inbetween. The plasterd surface shall be painted with exterior grade textured paint etc. complete in all respect as per direction of engineer in charge.	RM		100
30	NON-SOR	Providing & fixing of solid exposed concrete seating in decorative/ floating forms including reinforcement, centering/ formwork in ply.The concrete mix shall be 1:1.5:3, with sectional size of 0.40mx0.40m and length as per drawing, the top of the seat shall be of polished granite of thickness 18 mm fixed with 20 mm mortar including edge polishing of the same. The concrete surface shall be neatly grinded and duly coated with 2 coats of enamel paint etc, complete in all respect as per direction of engineer in charge.	RM		100
31	NON-SOR	Providing & fixing of exposed concrete seating in decorative/ floating forms integrated to landscape including reinforcement, centering/ formwork in ply. The concrete mix shall be 1:1.5:3, with the thickness of the seats 150mm and length & form as per drawing, The concrete surface shall be neatly grinded and duly coated with 2 coats of enamel paint etc, complete in all respect as per direction of engineer in charge.	SQM		100
32	NON-SOR	Design, making, supply and installation of sculptures carved out of solid block of sandstone of outer dimension 1.00mx1.00mx1.00m of rainbow/ teakwoodor any other color approved by engineer in charge. Duly polished with two coats of sealer etc. The design of sculpture shall be approved by the engineer-in-charge.	each		75

33	NON-SOR	Design, making, supply and installation of ensemble of 6 no. gun-metal/Architectural Bronzefigurines of varying sizes, with patina finish in desired degree of oxidization, with combined weight of the ensemble not less than 1200 kgs, fixed on concrete/ metal base, complete in all respect as per direction of engineer-in-charge. The design of sculpture shall be approved by the engineer-in-charge	kgs		1200
34	NON-SOR	Design, supply and installation of S.S. sculpture of required dimension, fixed on concrete/ metal base, complete in all respect as per direction of engineer-in-charge. The design of sculpture shall be approved by the engineer-in-charge	kgs		500
35	NON-SOR	Design, making, supply and installation of fibre glass mesh and epoxy resin figurine/sculptures, of weight not less than 30kgs, fixed on concrete/ metal base, complete in all respect as per direction of engineer-in-charge. The design of sculpture shall be approved by the engineer-in-charge.	kgs		500
36	NON-SOR	Supply & installation of chequered chess patten in tiles made of granite black/ white silver polished on all visible surfaces with slab thickness minimum 25mm laid over 50mm cement slurry of mix 1:2:4, complete in all respect as per direction of engineer in charge.	sqm		50
<b>Total (in Rupees.)</b>					