



Request for Proposal (RFP)

For

“Design, Development, Construction of Open Air Theatre, Sports Complex (Cricket/Football/Badminton/Lawn Tennis etc.), Swimming pool, Walkways, Amenities, High Mast Lighting facility, Street Lighting & Electrification Works, Utility services and Renovation works at Sandy’s Compound including Operation & Maintenance for a period of Three (03) Years and Defects Liability Period of Two Years under Bhagalpur Smart City Mission, Bhagalpur on Engineering, Procurement & Construction (EPC) basis”.

Under

SMART CITY MISSION (SCM)

in

**Issued By:
Chief Executive Officer
Bhagalpur Smart City Limited**

DISCLAIMER

The information contained in this Request for Proposal (“RFP”) document or subsequently provided to bidders, verbally or in documentary or any other form by or on behalf of the Bhagalpur Smart City Limited (here forth referred to as BSCL in this document) or any of its employees or advisers, is provided to bidders on the terms and conditions set out in this RFP and such other terms and conditions subject to which such information is provided.

This RFP is not an agreement and is not an invitation by the Employer to the prospective Consultants or any other person. The purpose of this RFP is to provide interested bidders with information that may be useful to them in the formulation of their Proposals pursuant to this RFP. This RFP includes statements, which reflect various assumptions and assessments arrived at by the Employer in relation to the Consultancy. Such assumptions, assessments and statements do not purport to contain all the information that each bidder may require. This RFP may not be appropriate for all persons, and it is not possible for the Employer, its employees or advisers to consider the objectives, technical expertise and particular needs of each party who reads or uses this RFP. The assumptions, assessments, statements and information contained in this RFP, may not be complete, accurate, adequate or correct. Each bidder should, therefore, conduct its own investigations and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments and information contained in this RFP and obtain independent advice from appropriate sources. Information provided in this RFP to the bidder (consultant/contractor/developer/Manufacturer/Supplier etc.) is on a wide range of matters, some of which depends upon interpretation of law. The information given is not an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. The Employer accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on the law expressed herein.

The BSCL and its employees and advisers make no representation or warranty and shall have no liability to any person including any bidder under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this RFP or otherwise, including the accuracy, adequacy, correctness, reliability or completeness of the RFP and any assessment, assumption, statement or information contained therein or deemed to form part of this RFP or arising in any way in this Selection Process.

The BSCL also accepts no liability of any nature whether resulting from negligence or otherwise however caused arising from reliance of any bidder upon the statements contained in this RFP. The BSCL may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information, assessment or assumption contained in this RFP. The issue of this RFP does not imply that the Employer is bound to select a bidder or to appoint the selected bidder, as the case may

be, for the Consultancy and the BSCL reserves the right to reject all or any of the Proposals without assigning any reasons whatsoever.

The bidder shall bear all its costs associated with or relating to the preparation and submission of its Proposal including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by the BSCL or any other costs incurred in connection with or relating to its Proposal.

All such costs and expenses will remain with the bidder and the BSCL shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by a bidder in preparation or submission of the Proposal, regardless of the conduct or outcome of the Selection Process.

Sd/

Chief Executive Officer
Bhagalpur Smart City Limited

**INSTRUCTIONS TO BIDDERS
AND
QUALIFICATION INFORMATION**

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VOLUME-I

SECTION 1

INVITATION FOR BID

(IFB)

NIT No:		BSCL/Open Space/2019/17
1.	(a) Name of the work	Design, Development, Construction of Open Air Theatre, Sports Complex (Cricket/Football/Badminton/Lawn Tennis etc.,), Swimming pool, Walkways, Amenities, High Mast Lighting facility, Street Lighting & Electrification works, Utility services and Renovation works at Sandy’s Compound including Operation & Maintenance for of Sandy’s Compound area over a period of Three (03) Years and Defects Liability Period of Two Years under Bhagalpur Smart City Mission, Bhagalpur on Engineering, Procurement & Construction basis”.
	(b) Scope of Work	Scope of work include Surveying, Geo-technical investigation, Architectural Planning & Design, Engineering, Procurement, preparation of detailed structural design & drawing, for the Development of Sandy’s Compound (total land area of 81.60 Acres approx.) after obtaining approval from competent authority including Construction of Walkways, New & existing Badminton Court Building, Open Air Theatre, Swimming Pool, Cricket Field & Drainage, Gate Complex (Entrance/Exit) including Security Guard Room, Vehicle Parking sheds, Special Entrance/Exit gates, Toilet blocks, Multi-purpose Ground, Sculpture court, Basket Ball & Lawn Tennis Court, Renovation of Station Club building, Boundary wall, Cafeteria, Kids play area, Nehru Memorial, Gym Building, Cleave land memorial including Water supply & Sanitation, Sewer network, Internal & External Electrification works including High mast Lighting & street lighting facility, storm water drainage, rain water harvesting, landscaping and internal roads etc., on EPC basis (complete in all respect internal and external finish) and Operation & maintenance of Sandy’s Compound for a period of Three (3) Years and two (2) years of defect liability period
2.	Mode of Bid Submission	e-tendering (http://www.eproc.bihar.gov.in)
3.	Estimated Cost (Rs.)	Rs.34.07 Crores (Rupees Thirty Four Crore and Seven Lakh only)
4.	Online Tender Fee	https://www.eproc.bihar.gov.in/
5.	EMD/Bid Security	As per NIT. (The EMD/Bid Security should be submitted in the form of Demand Draft/Bank Guarantee drawn in favour of “Chief Executive Officer, Bhagalpur Smart City Limited” payable at Bhagalpur.)
6.	Tender Document Fee	As per NIT
7.	Date / Time of Publication of Tender on e-Proc Website	As per NIT
8.	Last Date / Time of for Bid Submission	As per NIT
9.	Last Date / Time of Submission of Tender Fee & EMD	As per NIT
10.	Date of Bid Opening	As per NIT
11.	Bid Submission Address	Bhagalpur Smart City Limited, Municipal Corporation, Court Compound, Bhagalpur – 812001

Note: Only e-Tenders shall be accepted. Further details are available on Bihar Government e-Procurement website and select Bhagalpur Smart City and can be seen on the website <http://www.eproc.bihar.gov.in>

Sd/-
Chief Executive Officer,
BSCL, Bhagalpur

Instructions to Bidders for Online Submission of Bids

Detailed instructions & documents to be furnished for online bidding:

1. Guidelines for online submission of bids can be downloaded from the website <http://www.eproc.bihar.gov.in>
2. Bidders in order to participate in the online bidding process have to get ‘Digital Signature Certificate (DSC)’ as per Information Technology Act-2000. This Certificate will be required for digitally signing the bid. Bidders can get the above mentioned digital signature certificate from any vendor approved by Controller of Certifying Authorities (CCA). Bidders, who already possess valid Digital Certificates, need not procure new Digital Certificate.
3. Bidders should submit their bids online in electronic format with digital signature. Bids without Digital Signature will not be accepted. No proposal will be accepted in physical form.
4. Bids will be opened online as per time schedule mentioned in the Invitation for Bids (IFB).
5. Bidders should be ready with the scanned copies of cost of documents & bid security as specified in the tender document. Before submission of bids online, bidders must ensure that scanned copies of all the necessary documents have been attached with the bid.
6. Bidders should produce original Demand Draft /Bank Guarantee towards tender fee & bid security as mentioned in the Invitation for Bids (IFB) to the BSCL, Bhagalpur office during the period & time as mentioned in the IFB, failing which bid will not be accepted. The details of cost of documents, bid security specified in the tender documents should be the same as submitted online (scanned copies), otherwise bid will summarily be rejected.
7. The Department will not be responsible for delay in online submission of bids due to any reason, whatsoever.
8. All required information for bid must be filled and submitted online.
9. Other details can be seen in the bid documents.
10. Only online withdrawal or modification of bids, if any, in pursuance of relevant clauses of the SBD is acceptable.
11. Details of documents to be furnished for online bidding:

(Scanned copies of the following documents to be up-loaded in pdf format on the website <https://www.eproc.bihar.gov.in> in technical bid folder).

 - i. Demand Draft towards Tender fee.
 - ii. Bid security (Bank Guarantee) in the form specified in Section-10 of SBD.

- iii. Qualification information and supporting documents, as specified in Section-3. of SBD.
- iv. Certificates, undertakings, affidavits as specified in Section-3 of SBD.
- v. Any other information pursuant to Clause-4.3 of Section-2 ITB.
- vi. Undertakings that the bid shall remain valid for the period specified in Clause-15.1 of Section-2 ITB.

12. Scanned copies of the following documents are required to be uploaded on the website <http://www.eproc.bihar.gov.in> in financial bid folder:

i. Form of bid as specified in Section-8 of SBD in pdf format.

ii. Duly filled Price Bid.

13. Uploaded documents of successful bidder will be verified with the original before signing of the agreement. The successful bidder should provide the originals to the concerned authority on receipt of such a letter in this regard, which will be sent through registered post or speed post or by e-mail or delivered by hand.

14. Each uploading shall be digitally signed by the bidder.

15. If any disputes arises in the Contract work, the Jurisdiction will be Hon’ble High Court of Patna, Bihar

Sd/-
Chief Executive Officer
BSCL, Bhagalpur

INVITATION FOR BIDS (IFB)**NATIONAL COMPETITIVE BIDDING****NIT No. : - BSCL/Open Space/2019/17**

The undersigned, on behalf of the BSCL, Bhagalpur invites lump sum bids for the work mentioned in table below through e-Procurement from eligible Contractors, registered in appropriate class with Central/State Govt. Departments/CPSU/CPSE/State PSU’s/Autonomous Bodies, Govt. of Bihar/Govt. of India or an entity incorporated under Indian Companies act or any appropriate law engaged in the construction of Building projects or any public sector undertaking either of central or of state engaged in construction activities specially building works can also participate. The bid shall be submitted online in the website <http://www.eproc.bihar.gov.in>. The bidder(s) should have necessary portal enrolment with their own Digital Signature Certificate:

Sl. No.	Name of the work	Approximate value of work (Rs.)	Bid Security* (Rs.)	Cost of Document	Period of Completion
1	2	3	4	5	6
1	Scope of work include Surveying, Geo-technical investigation, Architectural Planning & Design, Engineering, Procurement, preparation of detailed structural design & drawing, for the Development of Sandy’s Compound (total land area of 81.60 Acres approx.) after obtaining approval from competent authority including Construction of Walkways, New & existing Badminton Court Building, Open Air Theatre, Swimming Pool, Cricket Field & Drainage, Gate Complex (Entrance/Exit) including Security Guard Room, Vehicle Parking sheds, Special Entrance/Exit gates, Toilet blocks, Multi-purpose Ground, Sculpture court, Basket Ball & Lawn Tennis Court, Renovation of Station Club building, Boundary wall, Cafeteria, Kids play area, Nehru Memorial, Gym Building, Cleave land memorial including Water supply & Sanitation, Sewer network, Internal & External Electrification works including High mast Lighting & street lighting facility, storm water drainage, rain water harvesting, landscaping and internal roads etc., on EPC basis (complete in all respect internal and external finish) and Operation & maintenance of Sandy’s Compound for a period of Three (3) Years and two (2) years of defect liability period	Rs. 34.07 Crores (Rupees Thirty Four Crore and Seven Lakh only)	As per NIT	As per NIT	18 Months (Including Monsoon & Mobilization)

2. Scope of work:

The Broad scope of work to be carried out by the agency/contractor will include; Surveying, Geo-technical investigation, Preparation of Architectural Designs and Plans, Preparation of Structural Design of the proposed Development of Sandy’s Compound area (total extent of land: 81.60 Acres approx..) and getting them vetted from IIT or NIT, Govt. Engineering College (As per the direction of the Client), Preparation of Good for Construction (GFC) drawing as per PWD/CPWD approved specifications and relevant IS codes; getting required statutory approvals from concerned authority at each stage, including carrying out of the following associated works:

SL.NO.	DESCRIPTION OF WORK	UNIT	QUANTITY
1	Construction of Walk Way	No.	1.00
2	Construction of Guard Room Cum Ticket Counter	No.	4.00
3	Electrification of Guard Room	No.	4.00
4	Construction of Cafeteria	No.	1.00
5	Landscaping & Development	No.	1.00
6	Development of Kids Play Area	No.	1.00
7	Renovation of Nehru Memorial	No.	1.00
8	Renovation of Station Club	No.	1.00
9	Construction of Specific/Emergency Gate	No.	13.00
10	Construction of Entrance gate	No.	3.00
11	Construction of Swimming Pool	No.	1.00
12	Swimming Pool Mechanical Items and Others	No.	1.00
13	Construction of Parking Sheds	No.	1.00
14	Development of Open Air Theatre	No.	1.00
15	Development of Basket Ball Court	No.	1.00
16	Construction of Trellis walkway	No.	1.00
17	Renovation of Existing Badminton court	No.	1.00
18	Construction of New Badminton Court Building	No.	1.00

S.No	Description of Item	UNIT	QUANTITY
19	Renovation` of Gym Building	No.	1.00
20	Development of Lawn Tennis Court	No.	2.00
21	Development of Cricket Field and its Drainage	No.	1.00
22	Renovation of Cleveland Memorial	No.	1.00
23	Construction of Toilet Blocks	No.	1.00
24	Development of Multipurpose ground	No.	1.00
25	Development of Sculpture court	No.	1.00
26	Dismantling of Boundary Wall	No.	1.00
27	Construction of Boundary wall (External)	Rmt	2,550.00
28	Construction of Boundary wall (Internal)	Rmt	1,010.00
29	Supply & Providing Lighting facility for Sport’s Complex	No.	1.00
30	Supply & providing of General Lighting facility	No.	1.00
31	Operation & Maintenance of Sandy’s Compound for Three year period (Inclusive of all)	3 years	Lump sum

NOTE:

1. The Contractor shall complete the entire project work within the stipulated period of 18 months as per RFP
2. Delay in execution of activities will be attracted penalty as per RFP
3. Contractor can take up the works of all activity in parallel by submitting the Program Chart & Baseline Programme to achieve the milestones of the project work.
4. Payment will be made as per physical completion of works and as per agreed terms & conditions of the RFP.

1.0 INTRODUCTION

1.1 About BSCL

Bhagalpur Smart City Limited (BSCL) is the special purpose vehicle created under the Bhagalpur Municipal Corporation to deliver several Pan City and Area Based Development initiatives with a focus on both infrastructure and ICT advancements in the city and at strategic locations.

1.2 Introduction to Bhagalpur Smart City Project

The Ministry of Housing and Urban Affairs (MoHUA), Government of India (GoI) has initiated Smart Cities Mission (SCM), under which selected cities will be developed as smart cities with a focus on improving citizen services with ICT intervention. Smart Cities Mission is an urban renewal and retrofitting programme by the Government of India with a mission to develop 100 cities all over the country making them citizen friendly, sustainable and investment destination. Under the Smart City Scheme, Government has emphasized to improve the basic civic amenities of the cities on one hand and the provision of modern technological advances for ease of living on the other hand.

The Smart City Proposal for Bhagalpur envisions to implementing a number of projects categorized into Area Based Development (ABD) projects and Pan City components. The ABD projects focuses on physical infrastructure components, whereas the Pan City components focuses on the ICT interventions in the city. To achieve Bhagalpur’s vision for a smart city, large numbers of measures are required to be implemented. Considering the priorities echoed by city stakeholders during the consultative process and practical feasibility, the main project umbrella initiatives shortlisted are:

- SUSHAASIT BHAGALPUR (Smart and Quality Governance)
- SAMRUDH BHAGALPUR (Promoting Tourism in Silk City of India)
- GATIMAAN BHAGALPUR (Enhanced public transport)
- SUDRID BHAGALPUR (A well-functioning, smart, and efficient city)
- SARVABHOUMIKVIKAS (Socially Inclusive Growth)

To bridge the gap and provide a society in line with the vision of inclusive growth the Smart City mission has been launched in India. The purpose of the Smart Cities Mission is to drive economic growth and improve the quality of life of people by enabling local area development and harnessing technology, especially technology that leads to Smart outcomes. Area based development will transform existing areas (retrofitting and redevelopment), including slums into better planned ones, thereby improving liveability of the whole City. New areas (Greenfield) will be developed around city to accommodate the expanding population in urban areas. Pan-city development is oriented towards application of selected Smart Solutions to the existing city-wide infrastructure. Application of Smart Solutions will involve the use of technology, information and data to make infrastructure and services better and befitting with demand coming up in the next decades.

SUSHAASIT BHAGALPUR

Bhagalpur Municipal Corporation recognizes the importance of addressing the needs of a growing population and an expanding city. It would strive to make Bhagalpur ‘a city for people’ where continuous engagement of local government with citizens is institutionalized in the decision making architecture. It would provide safe, accessible, and lively public spaces the city living experience and the river bank. Bhagalpur Municipal Corporation is committed to excellence in every sector, providing its staff opportunities of growth by learning and adopting state of the art technologies and methods to better their performance in every way. Its goal is to become financially self-sufficient and sustainable moving towards increased private investments and partnerships.

SAMRUDH BHAGALPUR

Promoting Tourism in Silk City of India: A historically and culturally significant city with ever-growing number of visitors, Bhagalpur Municipal Corporation is committed to preserve and promote its multi-faceted built heritage ranging from ancient Hindu rock-cut sculptures to Jain pilgrimage sites to archaeological remains of one of the biggest universities of Buddhist times to architecture from Mughal and British periods. Bhagalpur’s identity and image as a culturally and historically significant place will be promoted on regional, national and international level. The city will support regular religious festivals and celebrations and also design new city level events for residents and tourists. Bhagalpur will be the most visited place in Bihar in the years to come.

GATIMAAN BHAGALPUR

A well-connected city with enhanced public transport, BMC will develop multi-modal transport system and provide more intra and inter-city roadways and buses to ease people’s arrival to the city. It will improve vehicular movement and decongest roads. It will encourage NMT and pedestrian safety. Intelligent Transport System to be adopted to improve mobility especially of public transport and IPT. The city will have greens links connecting places of different land use to enhance walk-ability.

SUDRID BHAGALPUR

A well-functioning, smart, and efficient city: Bhagalpur Municipal Corporation recognizes the current gaps in services especially Water supply, sanitation, SWM, and public transport. For a smoothly functioning city, new technology and ICT will be adopted. The power infrastructure will be robust and promote energy efficiency and use of renewable energy. The sub-goals are – (i) Bhagalpur will not stop moving due to traffic jams; (ii) every resident and visitor to Bhagalpur will have access to clean drinking water; (iii) All streets will be clean and municipal waste will be treated and disposed scientifically; (iv) Every household will be connected to a functional sanitation system; (v) city will have robust IT enabled infrastructure; (vi) All power cables to be underground.

SARVABHOUMIKVIKAS

Socially Inclusive Growth: Bhagalpur will be more sensitive towards social infrastructure by improving quality of Health, Education, and Safety. All sections of society of Bhagalpur especially the old, children and differently-abled will be taken care of in design and development of projects. The city will put in efforts to alleviate urban poverty and increase livelihood opportunities. The city will provide liveable conditions for slum dwellers by up gradation of physical infrastructure. The informal sector will be regularized by providing basic infrastructure and facilities and formal vending zones.

2. Period of availability of tenders online/date & time of bidding on-line/last date of seeking clarification/date of opening of tender papers are as given below –

Sl. No.	Procurement Officer	Place of Opening	Availability of tender on-line for bidding		Date & Time of opening of technical bid
			From	To	
1	2	3	4	5	6
1	Chief Executive Officer, BSCL, Bhagalpur	Bhagalpur Smart City Limited, Municipal Corporation, Court Compound, Bhagalpur -812001	As per NIT	As per NIT	As per NIT

3. Cost of bidding document for a non-refundable fee as indicated shall be in the form of Demand Draft of any **Nationalized or Scheduled Indian Bank**, payable at Bhagalpur in favour of “Chief Executive Officer”, Bhagalpur Smart City Limited.

4. Bids must be accompanied by Security amount specified for the work in the table, payable at Bhagalpur and drawn in favour of “Chief Executive Officer”, Bhagalpur Smart City Limited. Bid Security will have to be in any one of the forms as specified in the bidding document and shall have to be valid for 45 days beyond the validity of the bid.

5. Cost of bidding document and Bid Security shall be deposited in the office of the Chief Executive Officer, **BSCL, Municipal Corporation, Court compound, Bhagalpur, Bihar - 812001, on the time & date mentioned as per NIT by post / hand**. Only those applications will be entertained whose cost of bidding document and bid security is received on or before time & date mentioned as per NIT. BSCL will not be held responsible for postal delay, if any, in the delivery of the document or non-receipt of the same in BSCL.

6. Tenderer(s) shall upload Scanned copy in pdf format/Digitally Signed copy of his/her Valid DD, Bid Security, Credit Facility, GST, PAN, Five Years Audited Turnover, Character Certificate,

Work Experience, Partnership Deed or Article of Association / Memorandum, Undertakings, Affidavits, E.P.F failing which the bid shall be rejected. Bidder has to submit Demand Draft/Bank Guarantee, JV, Power of Attorney, Undertaking & Solvency Certificate in Original.

7. Uploaded documents of successful bidder will be verified with the original before signing the agreement. The successful bidder has to provide the originals to the concerned authority on receipt of such a letter, which can be sent though registered post or speed post or can be delivered by hand or email.

8. Bidders in order to participate in the bidding process have to get ‘Digital Signature Certificate (DSC)’ as per Information Technology Act-2000 to participate in online bidding. This certificate will be required for digitally signing the bid. Bidders can get the above mentioned digital Signature certificate from any approved vendors (CCA). Bidders, who already possess valid Digital Certificates, need not procure new Digital Certificate.

9. Bidders have to submit their bids online in electronic format with Digital Signature. Bids without Digital Signature will not be accepted. No proposal will be accepted in Physical Form.

10. The work shall have to be completed in time, failing which penalty for non– completion of work in time shall be imposed, as stated in the Bid Document. Please note that there is a provision of Bonus for early completion of work.

11. Bidders who have rescind work in any department / PSU shall not be eligible to participate in the bidding process.

12. Bidders shall provide their Banker’s contact details, so that BSCL can contact the Bank, if required.

13. If any work is awarded to a bidder after submission of bid to BSCL, his bid capacity shall be reduced by that bid amount as indicated in Para 1.4 of Qualification Information & Other Forms (Section-3 of ITB).

14. Successful bidder will have to submit “As Built Layout Plan” in color print showing building details, water supply and drainage details, external electrical supply, water harvesting details etc. after completion of the work in 5 hard (coloured) and 1 soft copy for reference in future, failing which the amount to be withheld from the final payment to supply "as built" drawings by the date required is Rs 10.00 lakhs for projects up to Rs 50 crores, and additional Rs 0.15 lakhs for every 1 crore increment in project cost thereafter, with upper limit of Rs 50 lakhs.

15. Other details can be seen in the bidding documents.

Sd/-

**Chief Executive Officer
BSCL, Bhagalpur**

SECTION 2

INSTRUCTIONS TO BIDDERS

(ITB)

Instructions to Bidders

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A. GENERAL

1. Scope of Bid

1.1 The Employer (named in appendix to ITB) invites bids for the Design, Development & Construction of works (as defined in these documents and referred to as “the works”) detailed in the table given in IFB. The bidders need to submit bids for entire work detailed in the table given in IFB as the work is to be executed in Engineering Procurement and Construction (EPC) Mode.

1.2 In this EPC project, cost of the project given in the documents is only indicative and bidders should submit their bid amount with regard to the entire work including Scope of work include Surveying, Geo-technical investigation, Architectural Planning & Design, Engineering, Procurement, preparation of detailed structural design & drawing, for the Development of Sandy’s Compound (total land area of 81.60 Acres approx.) after obtaining approval from competent authority including Construction of Walkways, New & existing Badminton Court Building, Open Air Theatre, Swimming Pool, Cricket Field & Drainage, Gate Complex (Entrance/Exit) including Security Guard Room, Vehicle Parking sheds, Special Entrance/Exit gates, Toilet blocks, Multi-purpose Ground, Sculpture court, Basket Ball & Lawn Tennis Court, Renovation of Station Club building, Boundary wall, Cafeteria, Kids play area, Nehru Memorial, Gym Building, Cleave land memorial including Water supply & Sanitation, Sewer network, Internal & External Electrification works including High mast Lighting & street lighting facility, storm water drainage, rain water harvesting, landscaping and internal roads etc., on EPC basis (complete in all respect internal and external finish) and Operation & maintenance of Sandy’s Compound for a period of Three (3) Years and two (2) years of defect liability period., complete in all respect internal and external finish etc., approval of the same from competent authorities (BSCL) for the entire project and construction of the project according to approved design & drawing of buildings and associated premises.

1.3 The main objective of the Project is to develop and achieve standards of core infrastructure such that a clean and sustainable environment and a decent quality of live to be provided and create multi-utility public place for every age group of citizens.

1.4 The successful bidder will be expected to complete the works by the intended completion date specified in the Contract data.

1.5 Throughout these bidding documents, the terms ‘bid’ and ‘tender’ and their derivatives (bidder/ tenderer, bidding/tendering, etc.) are synonymous.

2. Source of Funds

The expenditure on this project will be met from fund allocated to Bhagalpur Smart City Limited from Govt. of Bihar & Govt. of India under Smart City Mission.

3. Eligible Bidders

3.1 This invitation for Bids is open to all bidders as mentioned in IFB.

3.2 All bidders shall provide in Section 3, Forms of Bid and Qualification Information, a statement in para 1.12, that the Bidder is neither associated, nor has been associated, directly or indirectly, with the Consultant or any other entity that has prepared the tender design, specifications and other documents for the Project or being proposed as Project Manager for the Contract. A firm that has been engaged by the Employer to provide consulting services for the preparation or supervision of the works, and any of its affiliates, shall not be eligible to bid.

4. Qualification of the Bidder

4.1 All bidders shall provide in Section 3, Forms of Bid and Qualification Information, a preliminary description of the proposed work method and schedule, including drawings and charts, as necessary. The proposed methodology should include programme of construction along with equipment planning and deployment duly supported with broad calculations and quality assurance procedures proposed to be adopted justifying their capability of execution and completion of work as per technical specifications, within stipulated period of completion.

4.2 Deleted.

4.3 All bidders shall include the following information and documents with their bids in Section 3:

- a) copies of original documents defining the constitution or legal status, place of registration, and principal place of business; written power of attorney of the signatory of the Bid to commit the Bidder;
- b) Total monetary value of construction work performed for each of the last five years.
- c) Experience in similar works which means any Construction of Sports complex for Cricket/Football/Badminton with Spectator view gallery including landscaping/horticulture;

OR

Development of Open space / Beautification of Parks, including landscaping/horticulture, Infrastructure projects;

OR

Building works which consists of minimum G+2 building including landscaping/horticulture & development of site.

for each of the last five completed financial years and the current financial year till date and details of works underway or contractually committed; and clients who may be contacted for further information on these contracts;

- d) major items of construction equipment proposed to carry out the Contract;
- e) qualifications and experience of key site management and technical personal proposed for Contract;
- f) reports on the financial standing of the Bidder, such as profit and loss statements and auditor’s reports for the past five years;
- g) evidence of access to line (s) of credit and availability of other financial resources facilities (10% of contract value), certified by the approved Bankers (not more than 3 months old)
- h) Undertaking that the bidder will be able to invest a minimum cash upto 25% of contract value of work, during implementation of work.
- i) authority to seek references from the Bidders’ bankers;
- j) self-attested copy of information regarding any litigation, current or during the last five years, in which the Bidder is involved, the parties’ concerned, and disputed amount;
- k) Proposals for subcontracting components of the works amounting to more than 10 percent of the Bid Price shall not be permitted, except for specialized nature of work in which new emerging engineering methodology is proposed to be used with the prior approval of implementing agency. Use of such new technologies should be indicated while submitting the bid.
- l) The proposed methodology and programme of construction, along with equipment planning and deployment, duly supported with broad calculations and quality control procedures proposed to be adopted, justifying their capability of execution and completion of the work as per technical specifications within the stipulated period of completion as per milestones.

4.4 Joint ventures is acceptable.

4.4.1 Joint Venture partners would be limited to **three** (including the lead partner)

4.4.2 One of the partners, who is responsible for performing a key in contract management (Lead Partner of the JV) or is executing a major component of the proposed contract, shall be nominated as being in charge during Bidding periods and in the event of successful Bid, during contract execution. The partner in charge shall be authorized to incur liabilities and receive instructions for and on behalf of the partner(s)

of the Joint Venture. This authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all partners.

4.4.3 Both the partners of Joint Ventures shall be, jointly and severally liable, during the Bidding process and for the execution of the contract in accordance with the contract terms, and a statement of this affect shall be included in the authorization. The Bid shall be signed so as to legally bind all the partners, jointly and severally. Bid security and performance guarantee, as required, will be furnished by the Lead Partner OR jointly.

4.4.4 Qualifying criteria for Joint Venture – Joint venture will be permitted for projects costing any amount.

Joint Venture must comply with the following requirements: -

a) The Joint Venture must satisfy collectively the criteria for this purpose. The following data of each member of the Joint Venture may be added together to meet the collective qualifying criteria.

- I. Annual Turnover (Cl. 4.5 (A) (a) of ITB Section-2)
- II. Particular Construction Experience. (Cl. 4.5 (A) (b) of ITB Section-2)
- III. Equipment Capabilities. (Annexure I of Section-2)
- IV. Personal Capabilities. (Annexure II of Section-2)
- V. Financial Capabilities [Cl.4.3(g) & Cl.4.3(h) of ITB Section-2]

b) The Lead partner shall meet the following qualifying criteria in proportion to the partnership in JV but not less than 51%.

- (i) Annual Turnover. (Cl. 4.5 (A) (a) of ITB Section-2)
- (ii) Particular Construction Experience. (Cl. 4.5 (A) (b) of ITB Section 2)
- (iii) Financial Capabilities. [Cl. 4.3 (g) & 4.3 (h) of ITB Section 2]

c) Other partner shall meet the following qualifying criteria in proportion to the partnership in JV but not less than 25%.

- I. Annual Turnover. (Cl. 4.5 (A) (a) of ITB Section 2)
- II. Particular Construction Experience. (Cl. 4.5 (A) (b) of ITB Section 2)
- III. Financial Capabilities. [Cl. 4.3 (g) & 4.3 (h) of ITB Section 2]

4.4.5 A copy of the Joint Venture Agreement (JVA) entered into between the partner shall be submitted with the application. Alternatively, a letter of Intent to execute a JVA in the event of successful Bid shall be signed by all partner(s) and submitted with the application together with a copy of the proposed agreement. The JVA shall include among other things a Joint Venture’s objectives and proposed management structure, the contribution of each partner to the Joint Venture operation, the commitment of the partner to Joint Venture in the event of the default or withdrawal of any partner an arrangement for providing the required indemnities:

- I. Stepping into the shoes of the existing partner(s) of JV with all liabilities of the existing partners from the beginning of the contract.
- II. With the prior approval of the employer.
- III. Notwithstanding demarcation or allotment of work between two JV partner(s), JV shall be liable for non-performance of the whole contract irrespective of their demarcation or shared of work.

In case of successful Bid being accepted by employer the payments under the contract will only be made to the JV not to the individual partner(s).

4.4.6 Joint Venture Agreement shall contain a Clause to the effect that there shall be a separate JV Bank Account (distinct from the Bank Account of the individual partners) to which the individual partner shall contribute their share / or working capital.

Joint Venture Agreement shall also contain a Clause to the effect that the financial obligations of the JV shall be discharged through the said JV Bank Account only and also all the payments received or paid by the employer by the JV shall be through that Account alone.

4.5 A. To qualify for award of the contract, each bidder in its name must have in the last five years as referred to in Appendix.

- a) The contractor/ firm must have achieved a minimum annual financial turnover equal to **50% of estimated cost** (in all classes of Civil Engineering Construction works only) in any one financial year during last five completed financial years (presently between 2014-2015 and 2018-2019) and up to the time of submission of bid in the current financial year.
- b) The contractor/firm must have satisfactorily completed as a prime contractor at least one similar work of value not less than **50% of estimated value of contract during last five completed financial years** between 2014-15 and 2018-19 (work of 90% or more of contract value executed will be taken as completed work) and up to the time of submission of bid in the current financial year.

- m) *Similar works* which means:

Any Construction of Sports complex for Cricket/Football/Badminton with Spectator view gallery including Landscaping/Horticulture

OR

Development of Open space/Beautification of Parks including Landscaping/Horticulture, Infrastructure projects

OR

Building works which consists of minimum G+2 buildings including Landscaping/Horticulture & Development of site.

Even though the bidder meets the above qualifying criteria, he is subject to be disqualified, if he has made a misleading or false representation(s) in the forms, statements and attachments in proof of the qualifying requirements.

(c) The contractor or his identified sub-contractor should possess required valid electrical license for executing the building electrification works and should have executed similar electrical works for a minimum amount (6% of total civil work) as indicated in Appendix to ITB (Section-2) in any one year.

(d) The contractor or his identified sub-contractor should have executed similar water supply/sanitary Engineering works for a minimum amount (6% of total civil work) as indicated in Appendix to ITB (Section-2) in any one year.

(e) If the work is of specialized nature of work or if a new type of Engineering methodology is proposed to be adopted, the contractor or his identified sub- contractor or Experienced Vendor of that particular field shall produce Experience Certificate for executing the similar nature of work for the minimum amount as indicated in Appendix to ITB in any one year.

B. Each bidder should further demonstrate

a) availability (either owned or leased or by procurement against mobilization advances) of the key and critical equipment for this work given in Annexure-I of section-2 which is indicated for this EPC work based on the studies, carried out by client equipment to attain the completion of works in accordance with the prescribed construction schedule.

The bidders should, however, undertake their own studies and furnish with their bid, a detailed construction planning and methodology supported with layout and necessary drawings and calculations (detailed) as per their experience provided in clause 4.3(C) above in order to allow the employer to review their proposals. The numbers, types and capacities of each plant/equipment shall be shown in the proposals along with the cycle time for each operation for the given production capacity to match the requirements.

- b) Availability of personnel for this work with adequate experience as required; as per Annexure-II of Section-2.
- c) liquid assets and/or availability of credit facilities of no less than amount indicated in para 5 of Appendix to ITB (Section-2) (credit lines/letter of credit/certificates from Banks for meeting the funds requirements etc.-usually the equivalent of the estimated cash flow for 3 months in peak construction period.)

C. To qualify for a package of contracts made up of this and other contracts for which bids are invited in the IFB, **the bidder must demonstrate having experience and resources sufficient to meet the aggregate of the qualifying criteria for the individual contracts.**

4.6 Sub-contractors’ experience and resources shall not be taken into account in determining the bidder’s compliance with the qualifying criteria.

4.7 Bidders who meet the minimum qualification criteria will be qualified only if their available bid capacity is more than the total bid value. The available bid capacity will be calculated as under:

Available Bid capacity = (A*M*N - B)

Where,

A = Maximum value of civil engineering works executed in any one year during the last five financial years between 2014-15 and 2018-19 (updated to the price level of the year indicated in para 17 of Appendix to ITB) taking into account the completed as well as works in progress.

M = Multiplication Factor (usually 1.5)

N = Number of years prescribed for completion of the works for which bids are invited up to two place of decimals.

B = Value (updated to the price level of the year as indicated in para 17 of Appendix to ITB) of existing commitments and ongoing works to be completed during the next 18 months (period of completion of the works for which bids are invited)

Note:

1. The statements showing the value of existing commitments and on-going works as well as the stipulate period of completion remaining for each of the works listed should be countersigned by the Engineer in charge, not below the rank of Executive Engineer or equivalent.

2. Escalation factor (for computing common base value for works completed) is given in para 17 of Appendix to ITB.

4.8 Even though the bidders meet the above qualifying criteria, they are subject to be disqualified, if they have:

- made misleading or false representations in the forms, statements and attachments in proof of the qualification requirements; and/or
- Record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures etc.

5. One Bid per Bidder

5.1. Each bidder shall submit only one bid for one package. A bidder who submits or participates in more than one Bid (other than as a subcontractor or in cases of alternatives that have been permitted or requested) will cause all the proposals with the Bidder’s participation to be disqualified.

6. Cost of Bidding

6.1 The bidder shall bear all costs associated with the preparation and submission of his Bid, and the Employer will in no case be responsible and liable for those costs.

7. Site Visit

7.1 The Bidder, at the Bidder’s own responsibility and risk is encouraged to visit and examine the Site of Works and its surroundings and obtain all information that may be necessary for preparing the Bid and entering into a contract for construction of the works. The costs of visiting the Site shall be at the Bidder’s own expense.

7.2 General Terms and Conditions for E-tendering:

- a) The detail tender notice and Tender Document can be seen on website: <https://www.eproc.bihar.gov.in> and downloaded online from the Portal: <https://www.eproc.bihar.gov.in> by the Firms / Individual registered on the Portal.
- b) As the proposals are to be submitted online and are required to be encrypted and digitally signed, the Bidders are advised to obtain Digital Signature Certificate (DSC) at the earliest.
- c) The payment for Tender Document Fee shall be made by the bidder in the mode of Demand Draft in favour of “Chief Executive Officer, BSCL” and EMD shall be submitted in the form of DD/Bank Guarantee drawn in favour as mentioned above through the Nationalized/Scheduled bank only.

- d) The undersigned reserves the right to reject any or all the tenders without assigning any reason what so ever and no conditional and postal tenders will be accepted.
- e) If the date on which the tenders are to be received is declared a public holiday, the tender will be received on the next working day.
- f) The offer will remain valid up to 120 days from the due date of submission of tenders.
- g) Any amendment to a tender after opening of tender made by the tenderer according to his own will is liable to be ignored altogether and such tenderer will be debarred from tendering for a period of six months

**Chief Executive Officer
Bhagalpur Smart City Limited
Bhagalpur (Bihar)**

B. BIDDING DOCUMENTS

8. Content of Bidding Documents

8.1 The set of bidding documents comprises the documents listed below and addenda issued in accordance with Clause 10:

Section	Particulars	Volume No.
1	Invitation for Bids (IFB) including Instructions to Bidders for Online Submission of Bids	
2	Instruction to Bidders	I
3	Qualification Information and other forms	
4	General Conditions of contract – General and Special Conditions of Contract	
5	Special Conditions of Contract & Additional Conditions of Contract	
6	Contract Data	
7	Technical Specifications	II
8	Form of bid	III
9	Price Bid	
10	Securities and other forms	
11	Drawings (Concept or otherwise)	IV
12	Documents to be furnished by bidder	V
13	Description of item(for Reference Only)	VI

8.2. Documents to be furnished by the bidder in compliance to Section 2 will be prepared by him in two parts viz Part 1 – Technical Bid, Part 2- Financial Bid and furnished as Volume- V in two parts (refer clause 12).

8.3 The bidder is expected to examine carefully all instructions, conditions of contract, contract data, forms/ terms, technical specifications, price bid form, Annexes and drawings in the Bid Document. Failure to comply with the requirements of Bid Documents shall be at the bidder’s own risk. Pursuant to clause 26 hereof, bids which are not substantially responsive to the requirements of the Bid Documents shall be rejected.

9. Clarification of Bidding Documents

9.1 Clarification of Bidding Refer to sub Clause 9.2 of IFB

9.2 Pre-bid meeting

9.2.1 The bidder or his official representative is invited to attend a pre-bid meeting which will take place at the address, venue, time and date as mentioned in NIT.

9.2.2 The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

9.2.3 The bidder may request a clarification on any clause of the RFP documents up to the Pre bid query submission date and time indicated in the NIT. Clarification should be submitted in the following table in excel format otherwise the queries shall not be entertained:

Sr. No.	RFP Page No.	Clause No.	Description as per RFP	Queries/ Suggestions
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9.2.4 Minutes of the meeting, including the text of the questions raised (without identifying the source of enquiry) and the responses given will be transmitted without delay to all purchasers of the bidding documents. Any modification of the bidding documents listed in sub-Clause 8.1 which may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an Addendum pursuant to Clause 10 and not through the minutes of the pre-bid meeting.

9.2.5 Non-attendance at the pre-bid meeting will not be a clause for disqualification of a bidder.

10. Amendment of Bidding Documents

10.1 Before the deadline for submission of bids, the Employer may modify the bidding documents by issuing addenda/corrigenda.

10.2 Any addendum/corrigendum thus issued shall form part of the bidding documents and shall be communicated in writing or by cable to all the purchasers of the bidding documents. Prospective bidders shall acknowledge receipt of each addendum in writing or by cable to the Employer. The Employer will assume no responsibility for postal delays.

10.3 To give prospective bidders reasonable time to take appropriate action in accordance to the addendum/corrigendum while preparing their bids, the Employer may, at his discretion, extend as necessary the deadline for submission of bids, in accordance with Sub-Clause 20.2 below.

C. PREPARATION OF BIDS

11. Language of the Bid

11.1 All documents relating to the bid shall be in English language.

12. Documents Comprising the Bid

12.1 The bid to be submitted by the bidder will be as Volume V of the bid document (refer Clause 8.1) and shall be in two separate parts viz part I and part II detailed below:

Part I shall be “Technical Bid” and shall comprise

- i. Bid security (Bank Guarantee etc.) in the form specified in Section 10.
- ii. Qualification Information and supporting documents as specified in Section 3.
- iii. Certificates, undertaking, affidavits as specified in Section 3.
- iv. Any other information pursuant to Clause 4.3 of these instructions.
- v. Undertakings that the bid shall remain valid for the period specified in Clause 15.1 of section -2
- vi. Form of Bid as specified in Section 8.

Part II shall be “Financial Bid” and shall comprise

12.2 Priced Bid for whole work as specified in Section 9, read together with clause 19. The bidder shall submit bid online in the correct slot prescribed in the e-Procurement website by using digital signature.

12.3 Following documents, which are not submitted with the bid, will be deemed to be part of the bid.

Section	Particulars	Volume No.
1.	Invitation for Bids(IFB)	
2.	Instruction to Bidders	
3.	Qualification Information and other forms	
4.	General Conditions of Contract	I
5.	Special Conditions of Contract)	
6.	Contract Data	
7.	Technical Specifications	II
8.	Form of Bid	III
9.	Price Bid	
10.	Securities and other forms	
11.	Drawings	IV
12.	Documents to be furnished by bidder	V
13.	Description of item (for Reference Only)	VI

All the content of documents must be submitted as per below instructions otherwise it may result in the rejection of the Bid

Name of Documents	Content	Mode of Submission
RFP Document fee & Bid Security/ Earnest Money Deposit (EMD)	RFP Document Fee receipt Bid Security/Earnest Money Deposit (EMD) receipt in Original.	Both in Online and Hard Copy
All Declarations / Affidavit / Agreements / Authorisation	All Declarations / Affidavit / Agreements / Authorisation in Original.	Both in Online and Hard Copy
Qualification Bid	All the documents for Submission of the Qualification Bid, its sub sections and any other applicable documents as per RFP.	Online Only
Technical Bid	All the documents for Submission of the Technical Bid, its sub sections and any other applicable documents as per RFP.	Online Only
Financial Bid	All the formats for Submission of the Commercial Bid, its sub sections and any other applicable documents as per RFP.	Online Only

13. Bid Prices

13.1 The contract shall be for the whole works as described in Sub-Clause 1.1.and table given in IFB (Section-1) as per the price bid.

13.2 The bidder shall fill in rates both in figure and words. In case of any difference, the rate quoted in words will be taken as the quoted rate.

13.3 All taxes, labour cess and other applicable levies (including GST) payable by the contractor under the contract, or for any other cause shall be included in the rates/ prices and total Bid Price submitted by the Bidder.

13.4 The rates and prices quoted by the bidder shall be fixed for the entire duration of the Contract and shall not be subject to adjustment on any account as this is a lump sum contract to be completed in a time bound manner.

14. Currencies of Bid and Payment

14.1 The Lump Sum and the prices shall be quoted by the bidder entirely in Indian Rupees. All payment shall be made in Indian Rupees.

15. Bid Validity

15.1 Bids shall remain valid for a period not less than 120 days after the deadline date for bid submission specified in Clause 20. A bid valid for a shorter period shall be rejected by the Employer as non-responsive. In case of discrepancy in bid validity period between that given in the undertaking pursuant to clause 12.1 (indicated as sl.no v of Part 1- Technical Bid) and the Form of Bid submitted by the bidder, the latter shall be deemed to stand corrected in accordance with the former and the bidder has to provide for any additional security that is required.

15.2 In exceptional circumstances, prior to expiry of the original time limit, the Employer may request that the bidders may extend the period of validity for a specified additional period. The request and the bidders’ responses shall be made in writing or by cable. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will not be required or permitted to modify his bid, but will be required to extend the validity of his bid security for a period of the extension, and in compliance with Clause 16 in all respects.

15.3 Bid evaluation will be based on the bid prices.

16. Bid Security

16.1 The Bidder shall furnish, as part of his Bid, a Bid security in the amount as shown in column 4 of the table of IFB for this particular work. This bid security shall be in favour of Employer as named in Appendix and may be in one of the following forms:

- a) Receipt in challan of cash deposit in the Government Treasury in India.
- b) Deposit-at-call receipt from any Nationalized/ Scheduled Indian Bank from any of the branches Nationalized / Scheduled Bank situated **within India, approved by the Reserve Bank of India.**

- c) Indian Post Office/Fixed Deposit/National Savings Certificates duly endorsed by the competent Postal Authority in India.
- d) Bank Guarantee from any from any Scheduled Indian Bank from any of the branches Nationalized / Scheduled Bank situated **within the territory of India** in the form given in Section 9.
- e) Fixed deposit receipt, a certified cheque or an irrevocable letter of credit,
Issued by any Nationalized/ Scheduled Indian Bank approved by the Reserve Bank of India.

16.2 Bank guarantees (and other instruments having fixed validity) issued as surety for the bid shall **be valid for 45 days beyond the validity of the bid.**

16.3 Any bid not accompanied by an acceptable Bid Security and not secured as indicated in Sub-Clauses 16.1 and 16.2 above shall be rejected by the Employer as non-responsive.

16.4 The Bid security of unsuccessful bidders will be returned within 28 days of the end validity period specified in sub-Clause 15.1.

16.5 The Bid security of the successful bidder will be discharged when the bidder has signed the Agreement and furnished the required Performance Security.

16.6 The Bid security may be forfeited

- a) if the Bidder withdraws the Bid after Bid opening during the period of Bid validity;
- b) if the Bidder does not accept the correction of the Bid Price, pursuant to Clause 27; or
- c) in the case of a successful Bidder, if the Bidder fails within the specified time Limit to:
 - i) sign the Agreement; or
 - ii) Furnish the required Performance Security.

17. Alternative Proposals by Bidders

17.1 Bidders shall submit offers that fully comply with the requirements of the bidding documents, including the conditions of contract (including mobilization advance or time for completion), basic technical design as indicated in the drawing and

specifications. **Conditional offer or alternative offers will not be considered further in the process of tender evaluation.**

18. Format and Signing of Bid

18.1 The bidder shall submit the bids as per “Instructions to Bidders for Online Submission of Bids”.

18.2 Instruction to Bidders to be followed. Bids submitted online should be digitally signed by the bidder.

18.3 Bidders shall follow the Method of submission of bid as mentioned in Instruction to Bidders and Instructions to Bidders for Online Submission of Bids.

D. SUBMISSION OF BIDS

19. Method Of Submission:

19.1 Bidders shall follow the Method of submission as per Instructions to Bidders for Online Submission of Bids given in Section-1 (IFB) in so far this bid is considered whose identification is given in item no. 10 Appendix to ITB.

20. Deadline for Submission of the Bids

20.1 Bidders shall follow the Method of online submission of bid as mentioned in Instruction to Bidders (for EPC contract) in section-1 and the bid should be submitted online latest by the date and time given also at item 13 Appendix to ITB.

20.2 The Employer may extend the deadline for submission of bids by issuing an amendment in accordance with Clause 10, in which case all rights and obligations of the employer and the bidders previously subject to the original deadline will then be subject to the new deadline.

21. Late Bids

21.1 Any Bid received by the Employer after the deadline prescribed in Clause 20 will be returned to the bidder.

22. Modification and Withdrawal of Bids

- 22.1.1 Bidders may modify or withdraw their bid(s) before the deadline prescribed in Clause 20 or pursuant to Clause 23.
- 22.1.2 Bidders shall follow the Method of submission modification & withdrawal of bid as mentioned in Instruction to Bidders (for SBD contract).
- 22.1.3 No bid may be modified after the deadline for submission of Bids except in pursuance of Clause 23.
- 22.1.4 Withdrawal or modification of a Bid between the deadline for submission of bids and the expiration of the original period of bid validity specified in Clause 15.1 above or as extended pursuant to clause 15.2 may result in the forfeiture of the Bid security pursuant to Clause 16.

E. BID OPENING AND EVALUATION

23. Bid Opening

23.1 The Employer will open all the Technical Bids submitted online including modification made pursuant to Clause 22, in the manner specified in Clause 20 and 23.3. In the event of the specified date of Bid opening being declared a holiday for the Employer, the Bids will be opened at the appointed time and location on the next working day. A notice for the same shall be posted on the website.

23.2 Evaluation of Bid

- i. Subject to confirmation of the bid security by the issuing bank, the bids accompanied with valid security will be taken up for evaluation with respect to the Qualification Information and other information furnished in Part I of the bid pursuant to ITB clause 12.1.
- ii. After receipt of confirmation of the bid security, the bidder will be asked in writing/ e-mail (usually within 10 days of opening of the Technical Bid) to clarify his technical bid, if necessary, with respect to any rectifiable defects.
- iii. The bidders will respond by e-mail in not more than 7 days of issue of the clarification letter, which will also indicate the date, time and venue of opening of the Financial Bid (usually on the 21st day of opening of the Technical bid)
- iv. Immediately (usually within 3 or 4 days), on receipt of these clarifications the Evaluation Committee will finalize the list of responsive bidders whose financial bids are eligible for consideration.

23.3 After the technical evaluation, these will be put to the Employer, which will find technically responsive bids. The financial of those bids will be opened who are found technically responsive. The financial bids of remaining bidders will remain unopen.

23.4 In case bids are invited in more than one package, the order for opening of the “Financial Bid” shall be that in which they appear in the “Invitation for Bid”.

23.5 The Employer shall prepare disclose information regarding bid opening to those present.

23.6 The Employer shall open the bid and the information regarding bid opening may be disclosed to those present as representative of the bidder.

24. Process to be Confidential

24.1 Information relating to the examination, clarification, evaluation and comparison of bids and recommendations for the award of a contract shall not be disclosed to bidders or any other persons not officially concerned with such process until the award to the successful Bidder has been announced. Any effort by a Bidder to influence the Employer’s processing of bids or award decisions may result in the rejection of his Bid.

25. Clarification of Financial Bids

25.1 To assist in the examination, evaluation and comparison of bids, the Employer may, at his discretion, ask any Bidder for clarification of his Bid, justification, including breakdowns of lump sum rates. The request for clarification and the response shall be in writing or by cable, but no change in the price of substance of the Bid shall be sought, offered or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the bids in accordance with ITB Clause -27.

25.2 Subject to ITB sub-clause 25.1, no Bidder shall contact the Employer on any matter relating to his bid from the time of the bid opening to the time the contract is awarded. If the bidder wishes to bring additional information to the notice of the Employer, it should do so in writing.

25.3 Any effort by the Bidder to influence the Employer in the Employer’s bid evaluation, bid comparison or contract award decisions may result in the rejection of the Bidders’ bid.

26. Examination of Bids and Determination of Responsiveness

26.1 During the detailed evaluation of ‘Technical Bids’, the Employer will determine whether each Bid:

26.1.1 meets the eligibility criteria defined in ITB Clause 3 and 4;

26.1.2 Has been properly signed digitally;

26.1.3 Is accompanied by the required securities; and

26.1.4 is substantially responsive to the requirements of the bidding documents. During the detailed evaluation of the ‘Financial Bid’ the responsiveness of the bids will be further determined with respect to the remaining bid conditions, i.e. price bid, technical specifications, and drawings.

26.2 A substantially responsive ‘Financial Bid’ is one which conforms to all the terms, conditions, and specifications of the Bidding documents, without material deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality, or performance of the works; (b) which limits in any

substantial way, inconsistent with the bidding documents, the Employer’s rights or the bidder’s obligations under the Contract; or (c) whose rectification would affect unfairly the competitive position of other bidders presenting substantially responsive bids.

26.3 If a ‘Financial Bid’ is not substantially responsive, it will be rejected by the Employer and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation or reservation.

27. Correction of Errors

27.1 ‘Financial Bids’ determined to be substantially responsive will be checked by the Employer for any arithmetical errors. Errors will be corrected by the Employer as follows:

(a) where there is a discrepancy between the rates in figures and in word, the rate in words will govern; and

(b) Where there is a discrepancy between the Lump Sum and the line item total resulting from multiplying the Lump sum by the quantity, the Lump Sum as quoted will govern.

27.2 The amount stated in the ‘Financial Bid’ will be corrected by the Employer in accordance with the above procedure and the bid amount adjusted with the concurrence of the Bidder in the following manner:

- i. If the Bid price increases as a result of these corrections, the amount as stated in the bid will be the ‘bid price’ and the increase will be treated as rebate;
- ii. If the bid price decrease as a result of the corrections, the decreased amount will be treated as the ‘bid price’. Such adjusted bid price shall be considered as binding upon the bidder. If the Bidder does not accept the corrected amount the Bid will be rejected, and the Bid Security shall be forfeited in accordance with ITB Sub-clause 16.6(b).

28. Evaluation and Comparison of Financial Bids

28.1 The Employer will evaluate and compare only the Bids determined to be substantially responsive in accordance with Sub-Clause 26.2.

28.2 In evaluating the Bids, the Employer will determine for each Bid the evaluated

Bid Price by adjusting the Bid Price as follows:

- a) making any corrections for errors pursuant to clause 27; or
- b) making an appropriate adjustment for any other acceptable variations, deviations

28.3 In case lowest quote is made by more than one bidder, then the bidder who has successfully completed and attached completion certificate while submitting online bid for a greater number of similar projects worth not less than Rs 25.00 Crores or more in the last 3 years would be awarded the work. In case of Joint Venture /Joint Venture, although the qualifying criteria is satisfied collectively by the joint venture for which the number of similar works attributed to each member of the joint venture is added; the computation for member of building projects for award of work to the joint venture in case of lowest quote would be computed on pro-rata basis of their participation in the JV and not by simply summing arithmetically, the number of similar building projects worth not less than Rs 25.00 Crore or more. Still, if there is a tie, lottery system will be followed to award the contract.

F. AWARD OF CONTRACT

29. Award Criteria

Intention of Award

After final bid evaluation, the intention of award will be published before issuing Letter of Intent (LOI) on <https://www.eproc.bihar.gov.in/> (under Bhagalpur Smart City Limited) and <https://smartcitybhagalpur.org>.

29.1 Subject to Clause 30, the Employer will award the Contract to the Bidder whose Bid has been determined

- i. to be substantially responsive to the bidding documents and who has offered the lowest evaluated Bid Price; and
- ii. To be within the available bid capacity adjusted to account for his bid price which is evaluated the lowest in any of the packages opened earlier than the one under consideration. In no case, the contract shall be awarded to any bidder whose available bid capacity is less than the evaluated bid price, even if the said bid is the lowest evaluated bid. The contract will in such cases be awarded to the next lowest bidder at the L1 cost if accepted by next lowest bidder otherwise tender stands cancelled.

30. Employer's Right to Accept or Reject any Bid

30.1 Notwithstanding Clause 29, the Employer reserves the right to accept or reject any Bid, to cancel the bidding process and reject all bids, at any time prior to the award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the Employer's action.

30.2 After Award of contract, if the Bidder is found to have concealed any fact relevant to projects, the employer may blacklist the Bidder or Bidders within 180 days, with due process as -

- i. 3 Years Blacklisting for the Project Cost Rs. 2.50 Crore to Rs. 10.00 Crore
- ii. 5 Years Blacklisting for the Project Cost above Rs. 10.00 Crore to Rs.100.00 Crore
- iii. 10 Years Blacklisting for the Project Cost above Rs. 100.00 Crore

31. Notification of Award and Signing of Agreement

31.1 The Bidder whose Bid has been accepted will be notified of the award by the employer prior to expiration of the Bid validity period by cable, telex or facsimile confirmed by letter. This letter (hereinafter and in the Conditions of Contract called the “Letter of Acceptance”) will state the sum that the Employer will pay the contractor in consideration of the execution, completion, and maintenance of the Works by the contractor as prescribed by the contract (hereinafter and in the contract called the “Contract Price”).

31.2 The notification of award will constitute the formation of the Contract, subject only to the furnishing of a performance security in accordance with the provisions of Clause 32.

31.3 The Agreement will incorporate all agreements between the Employer and the successful Bidder. This agreement will be signed only after furnishing of the performance security by the successful bidder but within 14 days of issue of Letter of Acceptance. The Employer will promptly notify the other bidders that their Bids have been unsuccessful.

32. Performance Security

32.1 Within 14 days of receipt of the Letter of Acceptance, the successful Bidder shall deliver to the Employer a Performance security in any of the forms given in 32.2 for an amount equivalent to 5% of the Contract price.

32.2 A bank guarantee from any of the branches of Nationalized/Scheduled Bank situated within territory of India in the form given in Section 10; or Certified Cheque / Bank Draft payable to employer as indicated in item no. 16 Appendix to ITB.

32.3 If the performance security is provided by the successful Bidder in the form of a Bank Guarantee, it shall be issued from any of the branches of Nationalized/ Scheduled Bank situated within the territory of India.

32.4 Failure of the successful Bidder to comply with the requirements of Sub-Clause 32.1 shall constitute grounds for cancellation of the award and forfeiture of the Bid Security.

32.5 The validity of the performance security is 28 days beyond the defect liability period.

33. Advance Payment and Security

33.1 The Employer will provide contractor an interest bearing mobilization advance (as per CVC guidelines in this regard) on the Contract Price in two stages of 5 % each subject to maximum amount of 10% of contract price.

34. Corrupt or Fraudulent Practices

34.1 The Employer will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question and will declare the firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract with BSCL, UD & HD, Government of Bihar, and any other state agencies, if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for the contract, or in execution of the work related to contract.

35. Dispute Resolution

35.1 The dispute arising between the employer and the contractor, if not resolved amicably shall be referred to appointed expert mediator of Bihar State Legal Services Authority (BSLSA). If the matter does not get resolved it will finally go for arbitration. Arbitration in such a case will be done in accordance to Indian Arbitration and Conciliation Act, 1996 and amended provisions thereof. The place of arbitration shall be Bhagalpur and the language of arbitration shall be English. This may be read in conjunction with clause 20.2 of Condition of Contract.

APPENDIX to ITB

S. No.	Description	Clause Reference with respect to Section- 2
1.	Name of the Employer is Chief Executive Officer, Bhagalpur Smart City Limited, Bhagalpur	[C1. 1.1]
2.	The last five years	[Cl. 4.5 A (a)]
	2014 - 2015	
	2015 - 2016	
	2016 - 2017	
	2017 - 2018	
	2018 - 2019	
3.	Minimum annual financial turnover amount is Rs 17.04 Crores (All class of Civil Engineering construction work in last five years)	[C1.4.5A(a)]
4.	Minimum work Completion Experience	[C1.4.5A(b)]
5.	Liquid assets and/or availability of credit facilities is Rs. 8.52 Crores (25% of Project Cost)	[C1.4.5B(c) & Cl. 4.3 (h)]
6.	Price level of the financial year 2019-20	[C1. 4.7]
7.	The pre-bid meeting will take place at – BSCL Office, Municipal Corporation, Court Compound, BSCL, Bhagalpur	[C1. 9.2.1]
8.	The Technical bid will be opened at BSCL Office, Bhagalpur	[C1 .23.1.]

9.	Address of the Employer: Bhagalpur Smart City Limited, Municipal Corporation, Court Compound, Bhagalpur	
10.	Submission of Bid: Bid for “Design, Development, Construction of Open Air Theatre, Sports Complex (Cricket/Football/Badminton/Lawn Tennis etc.,), Swimming pool, Walkways, Amenities, High Mast Lighting facility, Street Lighting & Electrification Works, Utility services and Renovation works at Sandy’s Compound including Operation & Maintenance for a period of Three (03) Years and Defects Liability Period of Two Years under Bhagalpur Smart City Mission, Bhagalpur on Engineering, Procurement & Construction (EPC) basis”.	[Cl. 19]
11.	NIT No.	BSCL/Open Space/2019/17
12.	The bid should be submitted online	[C1. 20.1]
13.	The bid will be opened at the time, date and venue mentioned in NIT	[C1.23.1]
14.	The Bank draft shall be in favour of Chief Executive Officer, Bhagalpur Smart City Limited Payable at - Bhagalpur	[C1.32.2]
15.	Escalation factors (For bringing the cost of works executed in different financial year to a common base value)	
	Years before	Multiply factor
	2014-15	1.61
	2015-16	1.46
	2016-17	1.33
	2017-18	1.21
	2018-19	1.10

ANNEXURE – I

List of Minimum Key Plant & Equipment to be deployed on Contract work

[Reference C1. 4.5 (B) (a)]

Sl.	Type of Equipment (leased or owned)	Maximum age as on 01.01.2019 (In Years)	Minimum no. of Equipment required
1.	Dozer	5	1
2.	Front end Loader	5	1
3.	Smooth Wheeled Roller	5	1
4.	Water Tank	5	1
5.	Bar Cutting Machine	5	4
6.	Bar Bending Machine	5	2
7.	Welding Machine	5	4
8.	Vibrator (Needle)	5	4
9.	Well-equipped Laboratory facility for quality test		One
10.	Transit Mixer with pumping arrangement	5	1
11.	Steel Prop	5	For 1000 Sqm
12.	Concrete Batching Plant (20 cum / hour)	5	1
13.	Steel Plate with fitting	5	For 1000 Sqm
14.	Staging pipe with fitting	5	For 1000 Sqm
15.	Cube Testing Machine (UTM)	5	1
16.	Cube Mould	5	50

EQUIPMENT FOR CONSTRUCTION AND O & M OF PARKS

Sl. No.	Equipment	Maximun Age as on 01.01.2019	Nos.
1	Lawnmower	5	5
2	Forks	5	20
3	Powered edger	5	5
4	Leaf blower	5	10
5	Pressure washer	5	10
6	Powered chainsaw	5	10
7	Shears	5	20
8	Wheel barrow (double)	5	10
9	Garden spade	5	20
10	Shovel	5	20
11	Pickaxe	5	10
12	Hoe	5	10
13	Pond Pliers	5	5
14	Pond Scissors	5	5
15	Pond Cleaning Clearing/Catching Landing Net	5	10

ANNEXURE – II

List of Minimum Key Personal to be deployed on Contract Work by the Contract Agency:

[Reference C1.4.5 (B) (b)]

Sl. No.	Personnel	Qualification	No. of Person
1	Project Manager	B.E/B.Tech/B.Sc. in Civil Engineering or equivalent with 15 Years Exp. (5 years as Project Manager)	1
2.	Senior Site Engineer	B.E/B.Tech/BSc. in Civil Engineering with 10 Years Exp. (including 5 years in Infrastructure works/sport complex/Building Construction) or Diploma Civil with 15 Years Exp. (including 10 years in Building Construction)	2
3	Site Engineer	B.E/B.Tech/BSc. in Civil Engineering with 5 Years Exp. (including 3 years in Infrastructure works/sport complex/Building Construction) or Diploma Civil with 10 Years Exp. (including 5 years in Building Construction)	5
3	Electrical Engineer	B.E. Electrical + 5Years Exp. Or Diploma in Electrical + 10 years Exp. Exposure in High mast/Park lighting of at least two projects.	1
4.	Quantity Surveyor	B.E/B.Tech/BSc. in Civil Engineering with 7 Years Exp. Or Dip. Civ. + 10 years Exp.	1
5.	Architect/Landscape Planner	B.Arch/B.E/B.Tech./BSc. Civil Engineering/Bachelor in Town or Regional Planning with 3 Years' Experience.	1
6.	Structural Engineer	B.E/B.Tech/BSc. in Civil Engineering with Specialization in Structural Engineering having experience not less than 5 years.	1
7.	Quality Control Engineer	B.E/B.Tech/BSc. in Civil Engineering with 5 years' Experience in Quality Control works	2
Total			14

Operation & Maintenance **Manpower requirement:**

Sl. No.	Manpower	No. of Personnel
1	Park Manager	2
2	Accountant	2
3	Maintenance Manager	1
4	Security Officer	1
5	Computer Operator	3
6	Security guard	8
7	Curator	1
8	Gardner	4
9	Ticket Collector	2
10	Technician (Electrical, Lighting, Pump operator)	2
11	Sweeper/Cleaner	4
12	Life guard	2
13	Office Boy	3
14	Compounder/Nurse	2
15	Support Staff	8
	Total	44

Note:

1. The above manpower deployment is mandatory for the entire period (i.e., 36 Months from the date of Completion of Original Project work) of Operation & maintenance of the Sandy’s compound by the Contractor for effective implementation of the project.
2. In case, the above said manpower deployment falls shortage as per agreed contract conditions, the Contractor will be penalized as per GCC of the RFP.
3. The Employer/Client reserves the right to Increase/decrease the manpower towards O & M operations during the Contract period.

SECTION 3

QUALIFICATION INFORMATION

&

OTHER FORMS

QUALIFICATION INFORMATION

The information to be filled in by the bidder in the following pages will be used for purposes of post qualification as provided for in Clause 4 of the Instructions to Bidders. This information will not be incorporated in the Contract.

1. For Individual Bidders

1.1. Constitution or legal status of Bidder
[Attach copy]

Place of registration:

Principal place of business:

Power of attorney of signatory of Bid [Attach]

1.2. Total value of Civil Engineering construction work performed in the last five financial years**
(in Rs. Lakhs)

2014-15

2015-16

2016-17

2017-18

2018-19

1.3.1 Work of similar nature performed as prime contractor, work performed in the past as a nominated sub- contractor will also be considered provided the sub-contract involved execution of all main item of works which comes under housing projects, provided further that all other qualification criteria are satisfied (in the same name) on works of a similar nature over the last five financial years (2014-15 to 2018-19) and the current financial year till date.

Project Name	Name of the Employer*	Description of Work	Contact Number	Value of Contract (Rs. Crore) (β)	Date of issue of Work Order	Stipulated Period of Completion	Actual of Completion*	Remarks Explaining Reasons for Delay and Work Completed

* Attach certificate(s) from the Engineer(s)-in-Charge/EE/Employer

β Attached certificate from Chartered Accountant (CA)

In case lowest quote is made by more than one bidder, then the bidder who has successfully completed and attached completion certificate while submitting online bid for more number of similar projects worth not less than Rs 25.00 Crores or more in the last 3 years would be awarded the work. In case of Joint Venture although the qualifying criteria is satisfied collectively by the joint venture for which the number of similar works attributed to each member of the joint venture is added; the computation for member of building projects for award of work to the joint venture in case of lowest quote would be computed on pro-rata basis of their participation in the JV and not by simply summing arithmetically, the number of similar building projects worth not less than Rs 25.00 Crore or more. Still, if there is a tie, lottery system will be followed to award the contract.

1.4 Information on Bid capacity (works for which bids have been submitted and works which are yet to be completed) as on the date of this bid.

(A). Existing commitments and on-going works:

Description of works	Place & State	Contract No.	Name & Address of Employer	Value of Contract (Rs Lakh)	Of Stipulated Period of Completion	Value of Works* Of remaining To be completed (Rs Lakh)	Anticipated date of completion
1	2	3	4	5	6	7	8

* Attach certificate(s) from the Engineer(s)-in-Charge/EE/Employer. The item of work for which data is requested should tally with that specified in ITB clause 4.7.

(B). Works for which bids already submitted:

Description of work	Place & State	Name & Address of Employer	Estimated value of works (Rs Lakh)	Stipulated period of completion	Date when decision is expected	Remarks If any
1	2	3	4	5	6	7

1.5 Availability of key items of Contractor’s Equipment essential for carrying out the Works [ref. Clause 4.5(B) (a). The Bidder should list all the information requested below. Refer also to Sub Clause 4.3(d) of the Instructions to Bidders.

Item of Equipment	Requirement		Availability Proposals			Remarks (from whom to be purchased)
	No.	Capacity	Owned / Leased to be procured	Nos. / Capacity	Age/ Condition	

1.6 Qualifications and experience of key personnel required for administration and execution of the Contract [Ref. Clause 4.5(B) (b)]. Attach biographical data. Refer also to sub Clause 4.3 (e) of Instructions to Bidders and Sub Clause 6.9 of the Conditions of Contract.

Position	Name	Qualification	Years of Professional Experience	Years of experience in Proposed position

1.7 Proposed sub-contracts and firms involved. [Refer ITB Clause 4.3(k)]

Sanctions of the works	Value of Sub-contract	Sub-contractor (Name & Address)	Experience in similar Work

Attach copies of certificates on possession of valid license for building electrification / [Reference Clause 4.5A (d), Clause 4.5A(c) of ITB].

1.8 Financial reports for the last five financial years: balance sheets, profit and loss statements, auditors’ reports (in case of companies/corporation), etc. List them below and attach copies. (Attach certificate from Chartered Accountant)

1.9 Evidence of access to financial resources to meet the qualification requirements:

Cash in hand, lines of credit, etc. List them below and attach copies of support documents.

1.10 Name, address, and telephone, telex, and fax numbers of the Bidders’ bankers who may provide references if contacted by the Employer.

1.11 Information on litigation history of Past 7 financial years starting 2013-14 in which the Bidder is involved.

Other Party(ies)	Employer	Cause of Dispute	Amount involved	Remarks showing Present Status

1.12 Statement of compliance under the requirements of Sub Clause 3.2 of the Instructions to Bidders. (Name of Consultant engaged for project preparation is)

1.13 Proposed work methods and schedule. The Bidder should attach descriptions, drawings and charts as necessary to comply with the requirements of the Bidding documents. [Refer ITB Clause 4.1 & 4.3 (a)]

1.14 Programme

1.15 Quality Assurance Programme

2. **Additional Requirements.**

2.1. Affidavit as provided in Section 3 of ITB

2.2. Undertaking as provided in Section 3 of ITB

2.3. Bidders should provide any additional information required to fulfill the requirements of Clause 4 of the Instructions to the Bidders, if applicable.

2.4. Copy of letter of association in the form of agreement with subcontractor for the work defined or for any specialize /Engineering methodology work.

Note: Even though the bidder meets the above qualifying criteria, he is subject to be disqualified, if he has made a misleading or false representation(s) in the forms, statements and attachments in proof of the qualifying requirements.

SAMPLE FORMAT FOR EVIDENCE OF ACCESS TO OR AVAILABILITY OF CREDIT FACILITIES

(Clause 4.3 (g) OF ITB)

BANK CERTIFICATE

This is to certify that M/s. _____ is a reputed Company with a good financial standing.

If the contract for the work, namely _____ is awarded to the above firm, we shall be able to provide overdraft/credit facilities to the extent of Rs. _____ to meet their working capital requirements for

Executing the above contract during the contact period.

(Signature) Name of Bank

Senior Bank Manager Address of the Bank

AFFIDAVIT

Also refer qualification information format para 2.1 in the same Section

1. I, the undersigned, do hereby certify that all the statements made in the required attachments are true and correct.

2. The undersigned also hereby certifies that neither our firm M/S _____ have abandoned any work of **Bhagalpur Smart City Limited** or any contract awarded to us for such work have been rescinded, during last five years prior to the date of this bid.

3. The undersigned hereby authorize(s) and request(s) any bank, person, firm or corporation to furnish pertinent information deemed necessary and requested by the Department to verify this statement or regarding my (our) competence and general reputation.

4. The undersigned understand and agrees that further qualifying information may be requested, and agrees to furnish any such information at the request of the Department/Project implementing agency.

(Signed by an authorized Officer of the Firm)

Title of officer

Name of Firm

Date

UNDERTAKING

Also refer qualification information format para 2.2 in the same

Section

I, the undersigned do hereby undertake that our firm M/s _____

_____ Would invest a minimum cash up to 25% of the value of
_____ The work during implementation of the Contract.

(Signed by an authorized Officer of the Firm)

Title of officer

Name of Firm

Date

SECTION 4

GENERAL CONDITIONS OF CONTRACT

General Conditions of Contract

ARTICLES

1. Definitions of Interpretation
2. Scope of Work
3. Obligation of the Contractor
4. Obligation of the Authority
5. Representation & Warranties
6. Disclaimer
7. Performance Security
8. Site of Project
9. Utilities & Trees
10. Design & Construction of the Project
11. Quality Assurance, Monitoring & Supervision
12. Completion Certificate
13. Change of Scope
14. Traffic Regulation
15. Defects Liability
16. Authority’s Engineer
17. Financial Covenants
18. Insurance
19. Force Majeure
20. Suspension of Contractor’s Rights
21. Termination
22. Assignment & Charges
23. Liability & Indemnity
24. Dispute Resolution
25. Miscellaneous
26. Definition

ARTICLE 1

DEFINITIONS AND INTERPRETATION

1.1 Definitions

The words and expressions beginning with capital letters and defined in this Agreement (including those in Article 26) shall, unless the context otherwise requires, have the meaning ascribed thereto herein, and the words and expressions defined in the Schedules and used therein shall have the meaning ascribed thereto in the Schedules.

1.2 Interpretation

1.2.1 In this Agreement, unless the context otherwise requires,

- a. references to any legislation or any provision thereof shall include amendment or re-enactment or consolidation of such legislation or any provision thereof so far as such amendment or re-enactment or consolidation applies or is capable of applying to any transaction entered into hereunder;
- b. references to laws of India or Indian law or regulation having the force of law shall include the laws, acts, ordinances, rules, regulations, bye laws or notifications which have the force of law in the territory of India and as from time to time may be amended, modified, supplemented, extended or re-enacted;
- c. references to a “**person**” and words denoting a natural person shall be construed as a reference to any individual, firm, company, corporation, society, trust, government, state or agency of a state or any association or partnership (whether or not having separate legal personality) of two or more of the above and shall include successors and assigns;
- d. the table of contents, headings or sub-headings in this Agreement are for convenience of reference only and shall not be used in, and shall not affect, the construction or interpretation of this Agreement;
- e. the words “**include**” and “**including**” are to be construed without limitation and shall be deemed to be followed by “without limitation” or “but not limited to” whether or not they are followed by such phrases;
- f. references to “construction” or “building” include, unless the context otherwise requires, survey and investigation, design, developing, engineering, procurement, supply of plant, materials, equipment, labour, delivery, transportation, installation, processing, fabrication, testing, and commissioning of the Project, including maintenance during the Construction

Period, removing of defects, if any, and other activities incidental to the construction and “**construct**” or “**build**” shall be construed accordingly;

- g. references to “**development**” include, unless the context otherwise requires, construction, renovation, refurbishing, augmentation, up-gradation and other activities incidental thereto during the Construction Period, and “develop” shall be construed accordingly;
- h. any reference to any period of time shall mean a reference to that according to Indian standard time;
- i. any reference to day shall mean a reference to a calendar day;
- j. reference to a “**business day**” shall be construed as reference to a day (other Than a Sunday) on which banks in the State are generally open for business;
- k. any reference to month shall mean a reference to a calendar month as per the Gregorian calendar;
- l. references to any date, period or Project Milestone shall mean and include such date, period or Project Milestone as may be extended pursuant to this Agreement;
- m. any reference to any period commencing “from” a specified day or date and “**till**” or “**until**” a specified day or date shall include both such days or dates; provided that if the last day of any period computed under this Agreement is not a business day, then the period shall run until the end of the next business day;
- n. the words importing singular shall include plural and vice versa;
- o. references to any gender shall include the other and the neutral gender;
- p. “**lakh**” means a hundred thousand (100,000) and “**crore**” means ten million (10,000,000);
- q. “**indebtedness**” shall be construed so as to include any obligation (whether incurred as principal or surety) for the payment or repayment of money, whether present or future, actual or contingent;

- r. references to the “winding-up”, “dissolution”, “insolvency”, or “reorganization” of a company or corporation shall be construed so as to include any equivalent or analogous proceedings under the law of the jurisdiction in which such company or corporation is incorporated or any jurisdiction in which such company or corporation carries on business including the seeking of liquidation, winding-up, reorganization, dissolution, arrangement, protection or relief of debtors;
- s. save and except as otherwise provided in this Agreement, any reference, at any time, to any agreement, deed, instrument, licensee or document of any description shall be construed as reference to that agreement, deed, instrument, license or other document as amended, varied, supplemented, modified or suspended at the time of such reference; provided that this Sub-clause (s) shall not operate so as to increase liabilities or obligations of the Authority hereunder or pursuant hereto in any manner whatsoever;
- t. any agreement, consent, approval, authorization, notice, communication, information or report required under or pursuant to this Agreement from or by any Party or the Authority’s Engineer shall be valid and effective only if it is in writing under the hand of a duly authorized representative of such

Party or the Authority’s Engineer, as the case may be, in this behalf and not otherwise;
- u. the Schedules and Recitals to this Agreement form an integral part of this Agreement and will be in full force and effect as though they were expressly set out in the body of this Agreement;
- v. references to Recitals, Articles, Clauses, Sub-clauses, Provisos or Schedules in this Agreement shall, except where the context otherwise requires, mean references to Recitals, Articles, Clauses, Sub-clauses, Provisos and Schedules of or to this Agreement; reference to an Annex shall, subject to anything to the contrary specified therein, be construed as a reference to an Annex to the Schedule in which such reference occurs; and reference to a Paragraph shall, subject to anything to the contrary specified therein, be construed as a reference to a Paragraph of the Schedule or Annex, as the case may be, in which such reference appear;

the damages payable by either Party to the other of them, as set forth in this Agreement, whether on per diem basis or otherwise, are mutually agreed genuine pre-estimated loss and damage likely to be suffered and incurred by the Party entitled to receive the same and are not by way of penalty (the “**Damages**”); and

w. time shall be of the essence in the performance of the Parties’ respective obligations. If any time period specified herein is extended for the reasons specified in the Agreement, such extended time shall also be of the essence.

1.2.2 Unless expressly provided otherwise in this Agreement, any Documentation required to be provided or furnished by the Contractor to the Authority shall be provided free of cost and in three copies, and if the Authority is required to return any such Documentation with its comments and/or approval, it shall be entitled to retain two copies thereof.

1.2.3 The rule of construction, if any, that a contract should be interpreted against the parties responsible for the drafting and preparation thereof, shall not apply.

1.2.4 Any word or expression used in this Agreement shall, unless otherwise defined or construed in this Agreement, bear its ordinary English meaning and, for these purposes, the General Clauses Act, 1897 shall not apply.

1.3 Measurements and arithmetic conventions

All measurements and calculations shall be in the metric system and calculations done to 2 (two) decimal places, with the third digit of 5 (five) or above being rounded up and below 5 (five) being rounded down.

1.4 Priority of agreements and errors/discrepancies

1.4.1 This Agreement, and all other agreements and documents forming part of or referred to in this Agreement are to be taken as mutually explanatory and, unless otherwise expressly provided elsewhere in this Agreement, the priority of this Agreement and other documents and agreements forming part hereof or referred to herein shall, in the event of any conflict between them, be in the following order:

1. this Agreement; and

All other agreements and documents forming part hereof or referred to herein;

I.e. this Agreement at (a) above shall prevail over the agreements and documents at (b).

1.4.2 Subject to the provisions of Clause 1.4.1, in case of ambiguities or discrepancies within this Agreement, the following shall apply:

(i) between two or more Clauses of this Agreement, the provisions of a specific Clause relevant to the issue under consideration shall prevail over those in other Clauses;

(ii) between the Clauses of this Agreement and the Schedules, the Clauses shall

Prevail and between Schedules and Annexes, the Schedules shall prevail;

- iv. between any two Schedules, the Schedule relevant to the issue shall prevail;
- v. between the written description on the Drawings and the Specifications and Standards, the latter shall prevail;
- vi. between the dimension scaled from the Drawing and its specific written dimension, the latter shall prevail; and
- vii. Between any value written in numerals and that in words, the latter shall prevail.

1.5 Joint and several liability

1.5.1 If the Contractor has formed a Joint Venture of two or more persons for implementing the Project:

- i. these persons shall, without prejudice to the provisions of this Agreement, be deemed to be jointly and severally liable to the Authority for the performance of the Agreement; and
- ii. The Contractor shall ensure that no change in the composition of the Joint Venture is effected without the prior consent of the Authority.

1.5.2 Without prejudice to the joint and several liability of all the members of the Joint Venture, the Lead Member shall represent all the members of the Joint Venture and shall at all times be liable and responsible for discharging the functions and obligations of the Contractor. The Contractor shall ensure that each member of the Joint Venture shall be bound by any decision, communication, notice, action or inaction of the Lead Member on any matter related to this Agreement and the Authority shall be entitled to rely upon any such action, decision or communication of the Lead Member. The Authority shall have the right to release payments to Joint Venture and shall not in any manner be responsible or liable for the *inter se* allocation of payments among members of the Joint Venture.

Part II

Scope of the Project

ARTICLE 2

SCOPE OF THE PROJECT**2.1 Scope of the Project**

Under this Agreement, the scope of the Project (the “**Scope of the Project**”) shall mean and include:

Scope of work include Surveying, Geo-technical investigation, Architectural Planning & Design, Engineering, Procurement, preparation of detailed structural design & drawing, for the Development of Sandy’s Compound (total land area of 81.60 Acres approx.) after obtaining approval from competent authority including Construction of Walkways, New Badminton Court Building, Open Air Theatre, Swimming Pool, Cricket Field & Drainage, Gate Complex (Entrance/Exit) including Security Guard Room, Vehicle Parking sheds, Compost pit & Plant nursery, Special Entrance/Exit gates, Toilet blocks, Development of Open Space, Multi-purpose Ground, Sculpture court, Basket Ball & Lawn Tennis Court, Renovation of Station Club building, existing Sandy’s Compound wall, Nehru Memorial, Gym Building, Cleveland memorial including Water supply & Sanitation, Sewer network, Internal & External Electrification works including High mast Lighting & street lighting facility, storm water drainage, rain water harvesting, landscaping and internal roads etc., on EPC basis (complete in all respect internal and external finish) and Operation & maintenance of Sandy’s Compound for a period of Three (03) Years including two (2) years of defect liability period ., complete in all respect internal and external finish etc., approval of the same from competent authorities (BSCL) for the entire project and construction of the project according to approved design & drawing of buildings and associated premises.

- i. Performance and fulfillment of all other obligations of the Contractor in accordance with the provisions of this Agreement and matters incidental thereto or necessary for the performance of any or all of the obligations of the Contractor under this Agreement.

ARTICLE 3

OBLIGATIONS OF THE CONTRACTOR**3.1 Obligations of the Contractor**

- 3.1.1 Subject to and on the terms and conditions of this Agreement, the Contractor shall undertake the survey, investigation, design, engineering, procurement, and construction of the Project and observe, fulfil, comply with and perform all its obligations set out in this Agreement or arising hereunder.
- 3.1.2 The Contractor shall comply with all Applicable Laws and Applicable Permits (including renewals as required) in the performance of its obligations under this Agreement.
- 3.1.3 Save and except as otherwise provided in this Agreement or Applicable Laws, as the case may be, the Contractor shall, in discharge of all its obligations under this Agreement, conform with and adhere to Good Industry Practice at all times.
- 3.1.4 The Contractor shall remedy any and all loss or damage to the Project, occurring on or after the Appointed Date and until the date of Provisional Certificate, with respect to the Works completed prior to the issuance of the Provisional Certificate and/or Completion Certificate, with respect to the Works referred to in the Punch List, at its own cost, save and except to the extent that any such loss or damage shall have arisen from any default of the Authority or on account of a Force Majeure Event in which case the provisions of Clause 19 shall apply.
- 3.1.5 The Contractor shall remedy any and all loss or damage to the Project during the Defects Liability Period at its own cost, to the extent that such loss or damage shall have arisen out of the reasons specified in Clause 15.3.
- 3.1.6 The Contractor shall, at its own cost and expense, in addition to and not in derogation of its obligations elsewhere set out in this Agreement:
- a) make, or cause to be made, necessary applications to the relevant Government Instrumentalities with such particulars and details as may be required for obtaining Applicable Permits set forth and obtain and keep in force and effect such Applicable Permits in conformity with Applicable Laws;
 - b). procure, as required, the appropriate proprietary rights, licences, agreements and permissions for Materials, methods, processes, know-how and systems used or incorporated into the Project;
 - c. make reasonable efforts to maintain harmony and good industrial relations among the personnel employed by it or its Sub-contractors in

- connection with the performance of its obligations under this Agreement;
- d. ensure and procure that its Sub-contractors comply with all Applicable Permits and Applicable Laws in the performance by them of any of the Contractor’s obligations under this Agreement;
 - e. always act in a manner consistent with the provisions of this Agreement and not cause or fail to do any act, deed or thing, whether intentionally or otherwise, which may in any manner be violative of any of the provisions of this Agreement;
 - f. support, cooperate with and facilitate the Authority in the implementation and operation of the Project in accordance with the provisions of this Agreement;
 - g. ensure that the Contractor and its Sub-contractors comply with the safety and welfare measures for labour in accordance with Applicable Laws and Good Industry Practice;
 - h. keep, on the Site, a copy of this Agreement, publications named in this Agreement, the Drawings, Documents relating to the Project, and Change of Scope Orders and other communications sent under this Agreement, and provide access to all these documents at all reasonable times to the Authority’s Engineer and its authorised personnel;
 - i. cooperate with other contractors employed by the Authority and personnel of any other public authority; and
 - j. not interfere unnecessarily or improperly with the convenience of the public, or the access to and use and occupation of all the existing facilities within the Right of Way, irrespective of whether they are public or in the possession of the Authority or of others.

3.1.7 The Contractor shall undertake all necessary superintendence to plan, arrange, direct, manage, inspect and test the Works.

3.2 The Contractor shall not allow to sub-contract Works.

3.3 Obligations relating to employment of foreign nationals

The Contractor acknowledges, agrees and undertakes that employment of foreign personnel by the Contractor and/or its Sub-contractors and their sub-contractors shall be subject to grant of requisite regulatory permits and approvals including

employment/residential visas and work permits, if any required, and the obligation to apply for and obtain the same shall and will always be of the Contractor. Notwithstanding anything to the contrary contained in this Agreement, refusal of or inability to obtain any such permits and approvals by the Contractor or any of its Sub-contractors or their sub-contractors shall not constitute Force Majeure Event, and shall not in any manner excuse the Contractor from the performance and discharge of its obligations and liabilities under this Agreement.

3.4 Obligations relating to Contractor’s personnel

- 3.4.1 The Contractor shall ensure and procure that the personnel engaged by it or by its Sub-contractors for performance of its obligations under this Agreement are at all times appropriately qualified, skilled and experienced in their respective functions in conformity with Applicable Laws and Good Industry Practice.
- 3.4.2 The Authority’s Engineer may, for reasons to be specified in writing, direct the Contractor to remove any member of the Contractor’s or Sub-contractor’s personnel from the Project. Provided that any such direction issued by the Authority’s Engineer shall specify the reasons for the removal of such person.
- 3.4.3 The Contractor shall, on receiving a direction from the Authority’s Engineer under the provisions of Clause 3.4.2, ensure and procure the removal of such person or persons from the Project with immediate effect. The Contractor shall further ensure that such persons have no further connection with the Project.

3.5 Obligations relating to advertisement on Project

The Contractor shall not use the Project or any part thereof in any manner for branding or advertising purposes including for advertising any commercial product or services or companies.

3.6 Obligations relating to Contractor’s care of the Works

The Contractor shall bear full risk in and take full responsibility for the care of Works, and of Materials, goods and equipment for incorporation therein, on and from the Appointed Date and until the date of Provisional Certificate, with respect to the Works completed prior to the issuance of the Provisional Certificate, and/or Completion Certificate, with respect to the Works referred to in the Punch List, save and except to the extent that any such loss or damage shall have arisen from any default or neglect of the Authority.

3.7 Obligations relating to electricity, water and other services

The Contractor shall be responsible for procuring of all power, water and other services that it may require for the Project.

3.8 Unforeseeable difficulties

Except as otherwise specified in the Agreement:

- a. the Contractor accepts complete responsibility for having foreseen all difficulties and costs of successfully completing the Works;
- b. the Contract Price shall not be adjusted to take account of any unforeseen difficulties or costs; and
- c. The Scheduled Completion Date shall not be adjusted to take account of any unforeseen difficulties or costs.

For the purposes of this Clause, unforeseeable difficulties include physical conditions like man-made or natural physical conditions including sub-surface and hydrological conditions which the Contractor encounters at the Site during execution of the Works.

ARTICLE 4

OBLIGATIONS OF THE AUTHORITY

4.1 Obligations of the Authority

4.1.1 The Authority shall, at its own cost and expense, undertake, comply with and perform all its obligations set out in this Agreement or arising hereunder.

4.1.2 The Authority shall be responsible for the correctness of the Scope of the Project, Project Facilities, Specifications and Standards and the criteria for Testing of the completed Works.

4.1.3 The Authority shall, upon receiving the Performance Security under Clause

7.1.1, provide to the Contractor:

- a. the land for construction in accordance with the provisions of Clauses 8.2 and 8.3, within a period of 15 (fifteen) days from the date of this Agreement.
- b. approval of the general arrangement drawings (the “**GAD**”) from BSCL authorities to enable the Contractor to start construction of Project in accordance with the Specifications and Standards, and subject to the terms and conditions specified in such approval, within a period of 60 (sixty) days from the Appointed Date; and
- c. All environmental and forest clearances as required under Clause 4.3.

4.1.4 Deleted.

4.1.5 Notwithstanding anything to the contrary contained in this Agreement, the Parties expressly agree that the aggregate Damages payable under Clauses 4.1.4, 8.3 and 9.2 shall not exceed 3% (three percent) of the Contract Price. For the avoidance of doubt, the Damages payable by the Authority under the aforesaid Clauses shall not be additive if they arise concurrently from more than one cause but relate to the same part of the Project.

4.1.6 The Authority agrees to provide support to the Contractor and undertakes to observe, comply with and perform, subject to and in accordance with the provisions of this Agreement and Applicable Laws, the following:

- c) upon written request from the Contractor, and subject to the Contractor complying with Applicable Laws, provide reasonable support to the Contractor in procuring Applicable Permits required from any Government Instrumentality for implementation of the Project;
- d) upon written request from the Contractor, provide reasonable assistance to the Contractor in obtaining access to all necessary infrastructure facilities and utilities, including water and electricity at rates and on terms no less favorable than those generally available to commercial customers receiving substantially equivalent services;
- e) procure that no barriers that would have a material adverse effect on Works are erected or placed on or about the Project by any Government Instrumentality or persons claiming through or under it, except for reasons of Emergency, national security or law and order;
- f) not do or omit to do any act, deed or thing which may in any manner be violative of any of the provisions of this Agreement;
- g) support, cooperate with and facilitate the Contractor in the implementation of the Project in accordance with the provisions of this Agreement; and
- h) upon written request from the Contractor and subject to the provisions of Clause 3.3, provide reasonable assistance to the Contractor and any expatriate personnel of the Contractor or its Sub-contractors to obtain applicable visas and work permits for the purposes of discharge by the Contractor or its Sub-contractors of their obligations under this Agreement and the agreements with the Sub-contractors.

4.2 Deleted

4.3 Obligations relating to Environmental and Forest Clearances

All the clearances shall be taken by selected bidder.

ARTICLE 5

REPRESENTATIONS AND WARRANTIES**5.1 Representations and warranties of the Contractor**

The Contractor represents and warrants to the Authority that:

- a) it is duly organized and validly existing under the laws of India, and has full power and authority to execute and perform its obligations under this Agreement and to carry out the transactions contemplated hereby;
- b) it has taken all necessary corporate and other actions under Applicable Laws to authorize the execution and delivery of this Agreement and to validly exercise its rights and perform its obligations under this Agreement;
- c) this Agreement constitutes its legal, valid and binding obligation, enforceable against it in accordance with the terms hereof, and its obligations under this Agreement will be legally valid, binding and enforceable obligations against it in accordance with the terms hereof;
- d) it is subject to the laws of India, and hereby expressly and irrevocably waives any immunity in any jurisdiction in respect of this Agreement or matters arising thereunder including any obligation, liability or responsibility hereunder;
- e) the information furnished in the Bid and as updated on or before the date of this Agreement is true and accurate in all respects as on the date of this Agreement;
- f) the execution, delivery and performance of this Agreement will not conflict with, result in the breach of, constitute a default under, or accelerate performance required by any of the terms of its memorandum and articles of association or any Applicable Laws or any covenant, contract, agreement, arrangement, understanding, decree or order to which it is a party or by which it or any of its properties or assets is bound or affected;
- g) there are no actions, suits, proceedings, or investigations pending or, to its knowledge, threatened against it at law or in equity before any court or before any other judicial, quasi-judicial or other authority, the outcome of which may result in the breach of this Agreement or which individually or in the aggregate may result in any material impairment of its ability to perform any of its obligations under this Agreement;
- h) it has no knowledge of any violation or default with respect to any order, writ, injunction or decree of any court or any legally binding order of any Government Instrumentality which may result in any material adverse effect

on its ability to perform its obligations under this Agreement and no fact or circumstance exists which may give rise to such proceedings that would adversely affect the performance of its obligations under this Agreement;

- i) it has complied with Applicable Laws in all material respects and has not been subject to any fines, penalties, injunctive relief or any other civil or criminal liabilities which in the aggregate have or may have a material adverse effect on its ability to perform its obligations under this Agreement;
- j) no representation or warranty by it contained herein or in any other document furnished by it to the Authority or to any Government Instrumentality in relation to Applicable Permits contains or will contain any untrue or misleading statement of material fact or omits or will omit to state a material fact necessary to make such representation or warranty not misleading;
- k) no sums, in cash or kind, have been paid or will be paid, by it or on its behalf, to any person by way of fees, commission or otherwise for securing the contract or entering into this Agreement or for influencing or attempting to influence any officer or employee of the Authority in connection therewith;
- l) all information provided by the {selected bidder/ members of the Joint Venture} in response to the Request for Qualification and Request for Proposals or otherwise, is to the best of its knowledge and belief, true and accurate in all material respects;
- m) all undertakings and obligations of the Contractor arising from the Request for Qualification and Request for Proposals or otherwise shall be binding on the Contractor as if they form part of this Agreement; and
- n) Nothing contained in this Agreement shall create any contractual relationship or obligation between the Authority and any Sub-contractors, designers, consultants or agents of the Contractor.

5.2 Representations and warranties of the Authority

The Authority represents and warrants to the Contractor that:

- a) it has full power and authority to execute, deliver and perform its obligations under this Agreement and to carry out the transactions contemplated herein and that it has taken all actions necessary to execute this Agreement, exercise its rights and perform its obligations, under this Agreement;
- b) it has taken all necessary actions under Applicable Laws to authorize the execution, delivery and performance of this Agreement;
- c) it has the financial standing and capacity to perform its obligations under this Agreement;

- d) this Agreement constitutes a legal, valid and binding obligation enforceable against it in accordance with the terms hereof;
- e) it has no knowledge of any violation or default with respect to any order, writ, injunction or any decree of any court or any legally binding order of any Government Instrumentality which may result in any material adverse effect on the Authority’s ability to perform its obligations under this Agreement:
- f) it has complied with Applicable Laws in all material respects;
- g) it has good and valid right to the Site and has the power and authority to grant the site in respect thereof to the Contractor; and
- h) it shall have procured, as on the Appointed Date, site so that the Contractor can commence.

5.3 Disclosure

In the event that any occurrence or circumstance comes to the attention of either Party that renders any of its aforesaid representations or warranties untrue or incorrect, such Party shall immediately notify the other Party of the same. Such notification shall not have the effect of remedying any breach of the representation or warranty that has been found to be untrue or incorrect nor shall it adversely affect or waive any obligation of either Party under this Agreement.

ARTICLE 6
DISCLAIMER

6.1 Disclaimer

- 6.1.1 The Contractor acknowledges that prior to the execution of this Agreement, the Contractor has, after a complete and careful examination, made an independent evaluation of the Request for Qualification, Request for Proposals, Scope of the Project, Specifications and Standards, Site, local conditions, physical qualities of ground, subsoil and geology, traffic volumes, suitability and availability of access routes to the Site and all information provided by the Authority or obtained, procured or gathered otherwise, and has determined to its satisfaction the accuracy or otherwise thereof and the nature and extent of difficulties, risks and hazards as are likely to arise or may be faced by it in the course of performance of its obligations hereunder. Save as provided in Clause 4.1.2 and Clause 5.2, the Authority makes no representation whatsoever, express, implicit or otherwise, regarding the accuracy, adequacy, correctness, reliability and/or completeness of any assessment, assumptions, statement or information provided by it and the Contractor confirms that it shall have no claim whatsoever against the Authority in this regard.
- 6.1.2 The Contractor acknowledges and hereby accepts to have satisfied itself as to the correctness and sufficiency of the Contract Price.
- 6.1.3 The Contractor acknowledges and hereby accepts the risk of inadequacy, mistake or error in or relating to any of the matters set forth in Clause 6.1.1 above and hereby acknowledges and agrees that the Authority shall not be liable for the same in any manner whatsoever to the Contractor, or any person claiming through or under any of them, and shall not lead to any adjustment of Contract Price or Scheduled Completion Date.
- 6.1.4 The Parties agree that any mistake or error in or relating to any of the matters set forth in Clause 6.1.1 above shall not vitiate this Agreement, or render it voidable.
- 6.1.5 In the event that either Party becomes aware of any mistake or error relating to any of the matters set forth in Clause 6.1.1 above, that Party shall immediately notify the other Party, specifying the mistake or error.
- 6.1.6 Except as otherwise provided in this Agreement, all risks relating to the Project shall be borne by the Contractor; and the Authority shall not be liable in any manner for such risks or the consequences thereof.

Part III

Construction

ARTICLE 7

PERFORMANCE SECURITY**7.1 Performance Security**

- 7.1.1 The Contractor shall, for the performance of its obligations hereunder, provide to the Authority, within 15 (fifteen) days of the date of this Agreement, an irrevocable and unconditional guarantee, for an amount equal to 5% (five percent) of the Contract Price, from a Bank in the form set forth in Annex-I of Schedule-F (the “**Performance Security**”). The Performance Security shall be valid until 60 (sixty) days of the expiry of the Defects Liability Period specified in Clause 15.1.1. Until such time the Performance Security is provided by the Contractor pursuant hereto and the same comes into effect, the Bid Security shall remain in force and effect, and upon such provision of the Performance Security, the Authority shall release the Bid Security to the Contractor. For the avoidance of doubt, the Parties expressly agree that the Contractor shall provide, no later than 30 (thirty) days prior to the expiry of the Performance Security for the Defects Liability Period specified in Clause 15.1.1, a Performance Security in respect of the extended Defects Liability Period, as specified in Clause 15.1.2, for an amount equal to 5% (five percent) of the estimated cost.
- 7.1.2 Notwithstanding anything to the contrary contained in this Agreement, the Parties agree that in the event of failure of the Contractor to provide the Performance Security in accordance with the provisions of Clause 7.1.1 and within the time specified therein or such extended period as may be provided by the Authority, in accordance with the provisions of Clause 7.1.3, the Authority may encash the Bid Security and appropriate the proceeds thereof as Damages, and thereupon all rights, privileges, claims and entitlements of the Contractor under or arising out of this Agreement shall be deemed to have been waived by, and to have ceased with the concurrence of the Contractor, and this Agreement shall be deemed to have been terminated by mutual agreement of the Parties.
- 7.1.3 In the event the Contractor fails to provide the Performance Security within 15 (fifteen) days of the date of this Agreement, it may seek extension of time for a period not exceeding a further 15 (fifteen) days on payment of Damages for such extended period in a sum calculated at the rate of 0.05% (zero point zero five percent) of the Contract Price for each day until the Performance Security is provided.

7.2 Extension of Performance Security

The Contractor may initially provide the Performance Security for a period of 24 months; provided that it shall procure the extension of the validity of the Performance Security, as necessary, at least 2 (two) months prior to the date of expiry thereof. Upon the Contractor providing an extended Performance Security, the previous Performance Security shall be deemed to be released and the Authority shall return the same to the Contractor within a period of 7 (seven) business days from the date of submission of the extended Performance Security.

7.3 Appropriation of Performance Security

7.3.1 Upon occurrence of a Contractor Default, the Authority shall, without prejudice to its other rights and remedies hereunder or in law, be entitled to encash and appropriate from the Performance Security the amounts due to it as Damages for the Contractor’s Default.

7.3.2 Upon such encashment and appropriation from the Performance Security, the Contractor shall, within 30 (thirty) days thereof, replenish, in case of partial appropriation, to its original level the Performance Security, and in case of appropriation of the entire Performance Security provide a fresh Performance Security, as the case may be, and the Contractor shall, within the time so granted, replenish or furnish fresh Performance Security as aforesaid failing which the Authority shall be entitled to terminate the Agreement in accordance with Article 21. Upon such replenishment or furnishing of a fresh Performance Security, as the case may be, the Contractor shall be entitled to an additional Cure Period of 30 (thirty) days for remedying the Contractor Default, and in the event of the Contractor not curing its default within such Cure Period, the Authority shall be entitled to encash and appropriate such Performance Security as Damages, and to terminate this Agreement in accordance with Article 21.

7.4 Release of Performance Security

The Authority shall release the Performance Security within 60 (sixty) days of the expiry of the Defects Liability Period or the extended Defects Liability Period, as the case may be, under this Agreement. Notwithstanding the aforesaid, the Parties agree that the Authority shall not be obliged to release the Performance Security until all Defects identified during the Defects Liability Period or the extended Defects Liability Period, as the case may be, have been rectified.

7.5 Retention Money

- 7.5.1 From every payment for Works due to the Contractor in accordance with the provisions of Clause 17.5, the Authority shall deduct 9% (nine percent) thereof as guarantee money for performance of the obligations of the Contractor during the Construction Period (the “**Retention Money**”) subject to the condition that the maximum amount of Retention Money shall not exceed 8% (eight percent) of the Contract Price.
- 7.5.2 Upon occurrence of a Contractor’s Default, the Authority shall, without prejudice to its other rights and remedies hereunder or in law, be entitled to appropriate the relevant amounts from the Retention Money as Damages for such Contractor’s Default.
- 7.5.3 The Contractor may, upon furnishing an irrevocable and unconditional bank guarantee substantially in the form provided at Annex-II of Schedule-F, require the Authority to refund the Retention Money deducted by the Authority under the provisions of Clause 7.5.1. Provided that the refund hereunder shall be made in tranches of not less than 1% (one percent) of the Contract Price.
- 7.5.4 Within 15 (fifteen) days of the date of issue of the Completion Certificate, the Authority shall discharge the bank guarantees, if any, furnished by the Contractor under the provisions of Clause 7.5.3 and refund the balance of Retention Money remaining with the Authority after adjusting the amounts appropriated under the provisions of Clause 7.5.2 and the amounts refunded under the provisions of Clause 7.5.3.
- 7.5.5 The Parties agree that in the event of Termination of this Agreement, the Retention Money and the bank guarantees specified in this Clause 7.5 shall be treated as if they are Performance Security and shall be reckoned as such for the purposes of Termination Payment under Clause 21.6.

ARTICLE 8

SITE OF PROJECT**8.1 The Site**

The site of the Project (the “**Site**”) shall comprise the site described in respect of which the land shall be provided by the Authority to the Contractor. The Authority shall be responsible for:

- i. Acquiring and providing land on the Site in accordance with the [alignment] finalized by the Authority, free from all encroachments and encumbrances, and free access thereto for the execution of this Agreement.

8.2 Deleted**8.3 Deleted.****8.4 Deleted.****8.5 Deleted.****8.6 Deleted****8.7 Deleted****8.8 Geological and archaeological finds**

It is expressly agreed that mining, geological or archaeological rights do not form part of this Agreement with the Contractor for the Works, and the Contractor hereby acknowledges that it shall not have any mining rights or interest in the underlying minerals, fossils, antiquities, structures or other remnants or things either of particular geological or archaeological interest and that such rights, interest and property on or under the Site shall vest in and belong to the Authority or the concerned Government Instrumentality. The Contractor shall take all reasonable precautions to prevent its workmen or any other person from removing or damaging such interest or property and shall inform the Authority forthwith of the discovery thereof and comply with such instructions as the Authority or the concerned Government Instrumentality may reasonably give for the removal of such property. For the avoidance of doubt, it is agreed that any reasonable expenses incurred by the Contractor hereunder shall be reimbursed by the Authority. It is also agreed that the Authority shall procure that the instructions hereunder are issued by the concerned Government Instrumentality within a reasonable period so as to enable the Contractor to continue its Works with such modifications as may be deemed necessary.

ARTICLE 9

UTILITIES AND TREES**9.1 Deleted.****9.2 Deleted.****9.3 New utilities**

9.3.1 The Contractor shall allow, subject to such conditions as the Authority may specify, access to, and use of the Site for laying telephone lines, water pipes, electric cables or other public utilities. Where such access or use causes any financial loss to the Contractor, it may require the user of the Site to pay compensation or damages as per Applicable Laws. For the avoidance of doubt, it is agreed that use of the Site under this Clause 9.3 shall not in any manner relieve the Contractor of its obligation to construct the Project in accordance with this Agreement and any damage caused by such use shall be restored forthwith at the cost of the Authority.

9.3.2 In the event the construction of any Works is affected by a new utility or works undertaken in accordance with this Clause 9.3, the Contractor shall be entitled to a reasonable Time Extension as determined by the Authority’s Engineer in accordance with the provisions of Clause 10.4.

9.3.3 The Authority may, by notice, require the Contractor to connect any adjoining road to the Project, and the connecting portion thereof falling within the Site shall be constructed by the Contractor at the Authority’s cost in accordance with Article 10.

9.3.4 Deleted.

9.4 Felling of trees

The Authority shall assist the Contractor in obtaining the Applicable Permits for felling of trees to be identified by the Authority for this purpose if and only if such trees cause a Material Adverse Effect on the construction of the Project. The cost of such felling and of the compensatory plantation of trees, if any, shall be borne by the Authority. In the event of any delay in felling thereof for reasons beyond the control of the Contractor; it shall be excused for failure to perform any of its obligations hereunder if such failure is a direct consequence of delay in the felling

of trees. The Parties hereto agree that the felled trees shall be deemed to be owned by the Authority and shall be disposed in such manner and subject to such conditions as the Authority may in its sole discretion deem appropriate. For the avoidance of doubt, the Parties agree that if any felling of trees result any period of delay in providing the Applicable Permits, the Contractor shall be entitled to Time Extension.

ARTICLE 10

DESIGN AND CONSTRUCTION OF THE PROJECT

10.1 Obligations prior to commencement of Works

10.1.1 Within 20 (twenty) days of the Appointed Date, the Contractor shall:

- i) appoint its representative, duly authorised to deal with the Authority in respect of all matters under or arising out of or relating to this Agreement;
- ii) appoint a design engineer (the “**Design Engineer**”) who will head the Contractor’s design unit and shall be responsible for surveys, investigations, collection of data, and preparation of preliminary and detailed designs;
- iii) undertake and perform all such acts, deeds and things as may be necessary or required before commencement of Works under and in accordance with this Agreement, Applicable Laws and Applicable Permits; and
- iv) Make its own arrangements for quarrying of materials and procurement needed for the Project under and in accordance with Applicable Laws and Applicable Permits.

10.1.2 The Authority shall, within 15 (fifteen) days of the date of this Agreement, appoint an engineer (the “**Authority’s Engineer**”) to discharge the functions and duties specified in this Agreement, and shall notify to the Contractor the name, address and the date of appointment of the Authority’s Engineer forthwith.

10.1.3 Within 30 (thirty) days of the Appointed Date, the Contractor shall submit to the Authority and the Authority’s Engineer a programme (the “**Programme**”) for construction of the Works, developed using networking techniques and giving the following details:

Part I Contractor’s organization for the Project, the general methods and arrangements for design and construction, environmental management plan, Quality Assurance Plan including design quality plan, traffic management and safety plan covering safety of users and workers during construction, Contractor’s key personnel, and equipment.

Part II Programme for completion of all stages of construction given in Schedule-G and Project Milestones of the Works as specified in Project Completion Schedule set forth in Schedule-I. The Programme shall include:

- i. the order in which the Contractor intends to carry out the Works, including the anticipated timing of design and stages of Works;
- ii. the periods for reviews under Clause 10.2; and
- iii. The sequence and timing of inspections and tests specified in this Agreement.

The Contractor shall submit a revised programme whenever the previous programme is inconsistent with the actual progress or with the Contractor’s obligations.

Part III Monthly cash flow forecast for the Project.

For the avoidance of doubt, the Contractor acknowledges and agrees that the Authority may, within a period of 15 (fifteen) days of receipt of the Programme, convey its comments to the Contractor stating the modifications, if any, required for compliance with the provisions of this Agreement, and the Contractor shall carry out such modifications, to the extent required for conforming with the provisions of this Agreement.

10.1.4 The Contractor shall compute, on the basis of the Drawings prepared in accordance with Clause 10.2.7, and provide to the Authority’s Engineer, the length, area and numbers, as the case may be, in respect of the various items of work specified and comprising the Scope of the Project. The Parties expressly agree that these details shall form the basis for estimating the interim payments for the Works in accordance with the provisions of Clause 17.3. For the avoidance of doubt, the sum of payments to be computed in respect of all the items of work shall not exceed the Contract Price, as may be adjusted in accordance with the provisions of this Agreement.

10.1.5 The Contractor shall appoint a safety consultant (the “**Safety Consultant**”) to carry out safety audit at the design stage of the Project in accordance with Applicable Laws and Good Industry Practice. The Safety Consultant shall be appointed after proposing to the Authority a panel of 3 (three) names of qualified and experienced firms from which the Authority may choose 1 (one) to be the Safety Consultant. Provided, however, that if the panel is not acceptable to the Authority and the reasons for the same are furnished to the Contractor, the Contractor shall propose to the Authority a revised panel of 3 (three) names for obtaining the consent of the Authority. The Authority shall, within 15 (fifteen) days of receiving a proposal from the Contractor hereunder, convey its decision, with reasons, to the Contractor, and

if no such decision is conveyed within the said period, the Contractor may proceed with engaging of the Safety Consultant. For the avoidance of doubt, the Parties agree that no firm or person having any conflict of interest shall be engaged hereunder. The Parties further agree that any assignments completed at least 3 (three) years prior to the appointment hereunder shall not be reckoned for the purposes of conflict of interest.

10.1.6 The safety audit pursuant to Clause 10.1.5 shall be carried out by the Safety Consultant in respect of all such design details that have a bearing on safety of Users as well as pedestrians and animals involved in or associated with accidents. The recommendations of the Safety Consultant shall be incorporated in the design of the Project and the Contractor shall forward to the Authority’s Engineer a certificate to this effect together with the recommendations of the Safety Consultant. In the event that any works required by the Safety Consultant shall fall beyond the scope, the Contractor shall make a report thereon and seek the instructions of the Authority for Change in Scope. For the avoidance of doubt, the Safety Consultant to be engaged by the Contractor shall be independent of the design and implementation team of the Contractor.

10.2 Design and Drawings

10.2.1 Design and Drawings shall be developed in conformity with the Specifications and Standards. In the event, the Contractor requires any relaxation in design standards due to restricted Right of Way in any Section, the alternative design criteria for such Section shall be provided for review of the Authority’s Engineer.

10.2.2 The Contractor shall appoint a proof check consultant (the “**Proof Consultant**”) after proposing to the Authority a panel of 3 (three) names of qualified and experienced firms from whom the Authority may choose 1 (one) to be the Proof Consultant. Provided, however, that if the panel is not acceptable to the Authority and the reasons for the same are furnished to the Contractor, the Contractor shall propose to the Authority a revised panel of 3 (three) names for obtaining the consent of the Authority. The Contractor shall also obtain the consent of the Authority for 2 (two) key personnel of the Proof Consultant who shall have adequate experience and qualifications with respect to the main elements of the Project. The Authority shall, within 15 (fifteen) days of receiving a proposal from the Contractor hereunder, convey its decision, with reasons, to the Contractor, and if no such decision is conveyed within the said period, the Contractor may proceed with engaging of the Proof Consultant. For the avoidance of doubt, the Parties agree that no firm or person having any conflict of interest shall be engaged hereunder. The Parties further agree that any assignments completed at least three years prior to the appointment hereunder shall not be reckoned for the purposes of conflict of interest.

10.2.3 The Proof Consultant shall:

- a) evolve a systems approach with the Design engineer so as to minimise the time required for final designs and construction drawings; and
- b) Proof check the detailed calculations, drawings and designs, which have been approved by the Design Director.

10.2.4 In respect of the Contractor’s obligations with respect to the design and Drawings of the Project as set forth in Schedule-H, the following shall apply:

- c) The Contractor shall prepare and submit, with reasonable promptness and in such sequence as is consistent with the Project Completion Schedule, 3 (three) copies each of the design and Drawings, duly certified by the Proof Consultant, to the Authority’s Engineer for review.

Provided, however, that in respect of [Major Bridges and Structures], the Authority’s Engineer may require additional drawings for its review in accordance with Good Industry Practice;

d) by submitting the Drawings for review to the Authority’s Engineer, the Contractor shall be deemed to have represented that it has determined and verified that the design and engineering, including field construction criteria related thereto, are in conformity with the Scope of the Project, Specifications and Standards, Applicable Laws and Good Industry Practice;

e) within 15 (fifteen) days of the receipt of the Drawings, the Authority’s Engineer shall review the same and convey its observations to the Contractor with particular reference to their conformity or otherwise with the Scope of the Project and the Specifications and Standards. The Contractor shall not be obliged to await the observations of the Authority’s Engineer on the Drawings submitted pursuant hereto beyond the said period of 15 (fifteen) days and may begin or continue Works at its own discretion and risk; Provided, however, that in case of a [Major Bridge or Structure], the aforesaid period of 15 (fifteen) days may be extended up to 30 (thirty) days;

f) If the aforesaid observations of the Authority’s Engineer indicate that the Drawings are not in conformity with the Scope of the Project or the Specifications and Standards, such Drawings shall be revised by the Contractor in conformity with the provisions of this Agreement and resubmitted to the Authority’s Engineer for review. The Authority’s Engineer shall give its observations, if any, within 10 (ten) days of receipt of the revised Drawings. In the event the Contractor fails to revise and resubmit such Drawings to the Authority’s Engineer for review as aforesaid, the Authority’s Engineer may cause the payment for the affected works to be withheld under the provisions of Clause 17.5.4. If the

Contractor disputes any decision, direction or determination of the Authority’s Engineer hereunder, the Dispute shall be resolved in accordance with the Dispute Resolution Procedure;

- g) no review and/or observation of the Authority’s Engineer and/or its failure to review and/or convey its observations on any Drawings shall relieve the Contractor of its obligations and liabilities under this Agreement in any manner nor shall the Authority’s Engineer or the Authority be liable for the same in any manner; and if errors, omissions, ambiguities, inconsistencies, inadequacies or other Defects are found in the Drawings, they shall be corrected, along with the affected Works, at the Contractor’s cost, notwithstanding any review under this Article 10;
- h) the Contractor shall be responsible for delays in submitting the Drawings, as set forth in Schedule-H, caused by reason of delays in surveys and field investigations, and shall not be entitled to seek any relief in respect thereof from the Authority; and
- i) the Contractor warrants that its designers, including any third parties engaged by it, shall have the required experience and capability in accordance with Good Industry Practice and it shall indemnify the Authority against any damage, expense, liability, loss or claim, which the Authority might incur, sustain or be subject to arising from any breach of the Contractor’s design responsibility and/or warranty as set out in this Clause.

10.2.5 Any cost or delay in construction arising from review by the Authority’s Engineer shall be borne by the Contractor.

10.2.6 Works shall be executed in accordance with the Drawings provided by the Contractor in accordance with the provisions of this Clause 10.2 and the observations of the Authority’s Engineer thereon as communicated pursuant to the provisions of Clause 10.2.4 (d). Such Drawings shall not be amended or altered without prior written notice to the Authority’s Engineer. If a Party becomes aware of an error or defect of a technical nature in the design or Drawings, that Party shall promptly give notice to the other Party of such error or defect.

10.2.7 Within 90 (ninety) days of the Project Completion Date, the Contractor shall furnish to the Authority and the Authority’s Engineer a complete set of as-built Drawings, in 2 (two) hard copies and in its editable digital format or in such other medium or manner as may be acceptable to the Authority, including an as-built survey illustrating the layout of the Project and setback lines, if any, of the buildings and structures forming part of Project Facilities, and shall hand them over to the Authority against receipt thereof.

10.3 Construction of the Project

10.3.1 The Contractor shall construct the Project in conformity with the Specifications and Standards set forth in this RFP. The Contractor shall be responsible for the correct positioning of all parts of the Works, and shall rectify any error in the positions, levels, dimensions or alignment of the Works. The 18 months from the Appointed Date shall be the scheduled completion date (the “**Scheduled Completion Date**”) and the Contractor agrees and undertakes that the construction shall be completed on or before the Scheduled Completion Date, including any extension thereof.

10.3.2 The Contractor shall construct the Project in accordance with the Project Completion Schedule set forth in Schedule-I. In the event that the Contractor fails to achieve any Project Milestone or the Scheduled Completion Date within a period of 30 (thirty) days from the date set forth in Schedule-I, unless such failure has occurred due to Force Majeure or for reasons attributable to the Authority, it shall pay Damages to the Authority in a sum calculated at the rate of 0.05% (zero point zero five per cent) of the Contract Price for delay day reckoned from the date specified in Schedule - I and until such Project Milestone is achieved or the Works are completed; provided that if the period for any or all Project Milestones or the Scheduled Completion Date is extended in accordance with the provisions of this Agreement, the dates set forth in Schedule-I shall be deemed to be modified accordingly and the provisions of this Agreement shall apply as if Schedule-I has been amended as above; provided further that in the event the Works are completed within or before the Scheduled Completion Date including any Time Extension, the Damages paid under this Clause 10.3.2 shall be refunded by the Authority to the Contractor, but without any interest thereon. For the avoidance of doubt, it is agreed that recovery of Damages under this Clause 10.3.2 shall be without prejudice to the rights of the Authority under this Agreement including the right of Termination thereof. The Parties further agree that Time Extension hereunder shall only be reckoned for and in respect of the affected Works as specified in Clause 10.4.2.

10.3.3 The Authority shall notify the Contractor of its decision to impose Damages in pursuance of the provisions of this Clause 10.3. Provided, however, that no deduction on account of Damages shall be effected by the Authority without taking into consideration the representation, if any, made by the Contractor within 20 (twenty) days of such notice. The Parties expressly agree that the total amount of Damages under Clause 10.3.2 shall not exceed 10% (ten percent) of the Contract Price.

10.4 Extension of time for completion

10.4.1 Without prejudice to any other provision of this Agreement for and in respect of extension of time, the Contractor shall be entitled to extension of time in the Project Completion Schedule (the “**Time Extension**”) to the extent that completion of any Project Milestone is or will be delayed by any of the following, namely:

- a) delay in providing site, environmental clearances specified in Clause 4.1.4;
- b) Change of Scope, unless an adjustment to the Scheduled Completion Date has been agreed under Article 13;
- c) occurrence of a Force Majeure Event;
- d) any delay, impediment or prevention caused by or attributable to the Authority, the Authority’s personnel or the Authority’s Other contractors on the Site; and
- e) Any other cause or delay which entitles the Contractor to Time Extension in accordance with the provisions of this Agreement.

10.4.2 The Contractor shall, no later than 15 (fifteen) business days from the occurrence of an event or circumstance specified in Clause 10.4.1, inform the Authority’s Engineer by notice in writing, with a copy to the Authority, stating in reasonable detail with supporting particulars, the event or circumstances giving rise to the claim for Time Extension in accordance with the provisions of this Agreement. Provided that the period of 15 (fifteen) business days shall be calculated from the date on which the Contractor became aware, or should have become aware, of the occurrence of such an event or circumstance.

Provided further that notwithstanding anything to the contrary contained in this Agreement, Time Extension shall be due and applicable only for the Works which are affected by the aforesaid events or circumstances and shall not in any manner affect the Project Completion Schedule for and in respect of the Works which are not affected thereby.

10.4.3 In the event of the failure of the Contractor to issue to the Authority’s Engineer a notice in accordance with the provisions of Clause 10.4.2 within the time specified therein, the Contractor shall not be entitled to any Time Extension and shall forfeit its right to any such claims in future. For the avoidance of doubt, in the event of failure of the Contractor to issue notice as specified in this Clause 10.4.3, the Authority shall be discharged from all liability in connection therewith.

10.4.4 The Authority’s Engineer shall, on receipt of a claim in accordance with the provisions of Clause 10.4.2, examine the claim expeditiously within the time frame specified herein. In the event the Authority’s Engineer requires any clarifications to examine the claim, the Authority’s Engineer shall seek the same within 15 (fifteen)

days from the date of receiving the claim. The Contractor shall, on the receipt of the communication of the Authority’s Engineer requesting for clarification, furnish the same to the Authority’s Engineer within 10 (ten) days thereof. The Authority’s Engineer shall, within a period of 30 (thirty) days from the date of receipt of such clarifications, forward in writing to the Contractor its determination of Time Extension. For the avoidance of doubt, the Parties agree that the Authority’s Engineer shall, in accordance with the provisions of this Agreement, notify the Contractor of the aforesaid Time Extension no later than 60 (sixty) days from the date of receipt of the Contractor’s claim for Time Extension.

Provided that when determining each extension of time under this Clause 10.4, the Authority’s Engineer shall review previous determinations and may increase, but shall not decrease, the total Time Extension.

10.4.5 If the event or circumstance giving rise to the notice has a continuing effect:

- f) the detailed claim shall be considered as interim;
- g) the Contractor shall, no later than 10 (ten) days after the close of each month, send further interim claims specifying the accumulated delay, the extension of time claimed, and such further particulars as the Authority’s Engineer may reasonably require; and
- h) The Contractor shall send a final claim within 30 (thirty) days after the effect of the event or the circumstance ceases.

Upon receipt of the claim hereunder, the Authority’s Engineer shall examine and determine the same in accordance with the provisions of Clause 10.4.4 within a period of 60 (sixty) days of the receipt thereof.

10.5 Incomplete Works

In the event the Contractor fails to complete the Works in accordance with the Project Completion Schedule, including any Time Extension granted under this Agreement, the Contractor shall endeavor to complete the balance work expeditiously and shall pay Damages to the Authority in accordance with the provisions of Clause 10.3.2 for delay of each day until the Works are completed in accordance with the provisions of this Agreement. Recovery of Damages under this Clause shall be without prejudice to the rights of the Authority under this Agreement including the right to termination under Clause 21.1.

ARTICLE 11

QUALITY ASSURANCE, MONITORING AND SUPERVISION

11.1 Quality of Materials and workmanship

11.1.1 The Contractor shall ensure that the Construction, Materials and workmanship are in accordance with the requirements specified in this Agreement, Specifications and Standards and Good Industry Practice.

11.1.2 The Contractor warrants that all Materials shall be new, unused, not reconditioned and in conformity with Specification and Standards, Applicable Laws and Good Industry Practice, and that the Contractor shall not use any materials which are generally recognized as being deleterious under Good Industry Practice.

11.2 Quality control system

11.2.1 The Contractor shall establish a quality control mechanism to ensure compliance with the provisions of this Agreement (the “**Quality Assurance Plan**” or “**QAP**”).

11.2.2 The Contractor shall, within 30 (thirty) days of the Appointed Date, submit to the Authority’s Engineer its Quality Assurance Plan which shall include the following:

- i) organization, duties and responsibilities, procedures, inspections and documentation;
- ii) quality control mechanism including sampling and testing of Materials, test frequencies, standards, acceptance criteria, testing facilities, reporting, recording and interpretation of test results, approvals, check list for site activities, and proforma for testing and calibration in accordance with the Specifications and Standards and Good Industry Practice; and
- iii) Internal quality audit system.

The Authority’s Engineer shall convey its comments to the Contractor within a period of 21 (twenty-one) days of receipt of the QAP stating the modifications, if any, required, and the Contractor shall incorporate those in the QAP to the extent required for conforming with the provisions of this Clause 11.2.

11.2.3 The Contractor shall procure all documents, apparatus and instruments, fuel, consumables, water, electricity, labour, Materials, samples, and qualified personnel as are necessary for examining and testing the Project Assets, Materials and workmanship in accordance with the Quality Assurance Plan.

11.2.4 The cost of testing of Construction, Materials and workmanship under this Article 11 shall be borne by the Contractor.

11.3. Methodology

The Contractor shall, at least 15 (fifteen) days prior to the commencement of construction, submit to the Authority’s Engineer for review the methodology proposed to be adopted for executing the Works, giving details of equipment to be deployed, traffic management and measures for ensuring safety. The Authority’s Engineer shall complete the review and convey its comments, if any, to the Contractor within a period of 10 (ten) days from the date of receipt of the proposed methodology from the Contractor.

11.4. Inspection and technical audit by the Authority

The Authority or any representative authorized by the Authority in this behalf may inspect and review the progress and quality of the construction of Works and issue appropriate directions to the Authority’s Engineer and the Contractor for taking remedial action in the event the Works are not in accordance with the provisions of this Agreement.

11.5 External technical audit

At any time during construction, the Authority may appoint an external technical auditor to conduct an audit of the quality of the Works. The findings of the audit, to the extent accepted by the Authority, shall be notified to the Contractor and the Authority’s Engineer for taking remedial action in accordance with this Agreement. The Contractor shall provide all assistance as may be required by the auditor in the conduct of its audit hereunder. Notwithstanding anything contained in this Clause 11.5, the external technical audit shall not affect any obligations of the Contractor or the Authority’s Engineer under this Agreement.

11.6 Inspection of construction records

The Authority shall have the right to inspect the records of the Contractor relating to the Works.

11.7 Monthly progress reports

During the Construction Period, the Contractor shall, no later than 10 (ten) days after the close of each month, furnish to the Authority and the Authority’s Engineer a monthly report on the progress of Works and shall promptly give such other relevant information as may be required by the Authority’s Engineer.

11.8 Inspection

11.8.1 The Authority’s Engineer and its authorized representative shall at all times:

- iv) have full access to all parts of the Site and to all places from which natural Materials are being obtained for use in the Works; and
- v) during production, manufacture and construction at the Site and at the place of Production, be entitled to examine, inspect, measure and test the Materials and workmanship, and to check the progress of manufacture of Materials.

11.8.2 The Contractor shall give the Authority’s Engineer and its authorized agents access, facilities and safety equipment for carrying out their obligations under this Agreement.

11.8.3 The Authority’s Engineer shall submit a monthly inspection report (the “**Inspection Report**”) to the Authority and the Contractor bringing out the results of inspections and the remedial action taken by the Contractor in respect of Defects or deficiencies. For the avoidance of doubt, such inspection or submission of Inspection Report by the Authority’s Engineer shall not relieve or absolve the Contractor of its obligations and liabilities under this Agreement in any manner whatsoever.

11.9 Samples

The Contractor shall submit the following samples of Materials and relevant information to the Authority’s Engineer for review:

- vi) manufacturer’s test reports and standard samples of manufactured Materials; and
- vii) Samples of such other Materials as the Authority’s Engineer may require.

11.10 Tests

11.10.1 For determining that the Works conform to the Specifications and Standards, the Authority’s Engineer shall require the Contractor to carry out or cause to be carried out tests, at such time and frequency and in such manner as specified in this Agreement, and in accordance with Good Industry Practice for quality assurance. The Contractor shall, with due diligence, carry out all the tests in accordance with the Agreement and furnish the results thereof to the Authority’s Engineer. Of the total tests for each category or type to be undertaken by the Contractor under the provisions of this Agreement and Good Industry Practice, the Authority’s Engineer shall (a) carry out or cause to be carried out, test checks equal to about 10% (ten percent) of the number of the tests required to be undertaken by the Contractor; and

(b) witness or participate in at least 10% (ten percent) of the number of such tests conducted or caused to be conducted by the Contractor.

11.10.2 In the event that results of any tests conducted under this Clause 11.10 establish any Defects or deficiencies in the Works, the Contractor shall carry out remedial measures and furnish a report to the Authority’s Engineer in this behalf. The Authority’s Engineer shall require the Contractor to carry out or cause to be carried out tests to determine that such remedial measures have brought the Works into compliance with the Specifications and Standards, and the procedure shall be repeated until such Works conform to the Specifications and Standards. For the avoidance of doubt, the cost of such tests and the remedial measures in pursuance thereof shall be solely borne by the Contractor.

11.11 Examination of work before covering up

In respect of the work which the Authority’s Engineer is entitled to examine, inspect, measure or test before it is covered up or put out of view or any part of the work is placed thereon, the Contractor shall give notice to the Authority’s Engineer whenever any such work is ready and before it is covered up. The Authority’s Engineer shall then either carry out the examination, inspection or testing without unreasonable delay, or promptly give notice to the Contractor that the Authority’s Engineer does not require to do so. Provided, however, that if any work is of a continuous nature where it is not possible or prudent to keep it uncovered or incomplete, the Contractor shall notify the schedule of carrying out such work to give sufficient opportunity, not being less than 3 (three) business days’ notice, to the Authority’s Engineer to conduct its inspection, measurement or test while the work is continuing. Provided further that in the event the Contractor receives no response from the Authority’s Engineer within a period of 3 (three) business days from the date on which the Contractor’s notice hereunder is delivered to the Authority’s Engineer, the Contractor shall be entitled to assume that the Authority’s Engineer would not undertake the said inspection.

11.12 Rejection

11.12.1 If, as a result of an examination, inspection, measurement or testing, any Plant, Material, design or workmanship is found to be defective or otherwise not in accordance with the provisions of this Agreement, the Authority’s Engineer may reject such Plant, Material, design or workmanship by giving notice to the Contractor, with reasons. The Contractor shall then promptly make good the Defect and ensure that the rejected item complies with the requirements of this Agreement.

11.12.2 If the Authority’s Engineer requires the Plant, Material, design or workmanship to be retested, the tests shall be repeated on the same terms and conditions, as applicable in each case. If the rejection and retesting cause the Authority to incur any additional costs, such costs shall be recoverable by the Authority from the Contractor and may be deducted by the Authority from any monies due to be paid to the Contractor.

11.12.3 The Contractor shall not be entitled to any extension of time on account of rectifying any Defect or retesting as specified in this Clause 11.12.

11.12.4 No examination, inspection, measurement or testing of any Plant, Material, design or workmanship by the Authority’s Engineer or its failure to convey its observations or to examine, inspect, measure or test shall relieve the Contractor of its obligations and liabilities under this Agreement in any manner nor shall the Authority be liable for the same in any manner.

11.13 Remedial work

11.13.1 Notwithstanding any previous test or certification, the Authority’s Engineer may instruct the Contractor to:

1. remove from the Site and replace any Plant or Materials which are not in accordance with the provisions of this Agreement;
2. remove and re-execute any work which is not in accordance with the provisions of this Agreement and the Specification and Standards; and
3. execute any work which is urgently required for the safety of the Project, whether because of an accident, unforeseeable event or otherwise; provided that in case of any work which is required on account of a Force Majeure Event, the provisions of Clause 19.6 shall apply.

11.13.2 If the Contractor fails to comply with the instructions issued by the Authority’s Engineer under Clause 11.13.1, within the time specified in the Authority’s Engineer’s notice or as mutually agreed, the Authority’s Engineer may advise the Authority to have the work executed by another agency. The cost so incurred by the Authority for undertaking such work shall, without prejudice to the rights of the Authority to recover Damages in accordance with the provisions of this Agreement, be recoverable from the Contractor and may be deducted by the Authority from any monies due to be paid to the Contractor.

11.14 Delays during construction

Without prejudice to the provisions of Clause 10.3.2, in the event the Contractor does not achieve any of the Project Milestones within the time period stipulated in Schedule I or the Authority’s Engineer shall have reasonably determined that the rate of progress of Works is such that Completion of the Project is not likely to be achieved by the end of the Scheduled Completion Date, it may notify the same to the Contractor, and the Contractor shall, within 15 (fifteen) days of such notice, by a communication inform the Authority’s Engineer in reasonable detail about the steps it proposes to take to expedite progress and the period within which it shall achieve the Project Completion Date.

11.15 Quality control records and Documents

The Contractor shall hand over to the Authority’s Engineer a copy of all its quality control records and documents before the Completion Certificate is issued pursuant to Clause 12.2.

11.16 Video recording

During the Construction Period, the Contractor shall provide to the Authority for every calendar quarter, a video recording, which will be compiled into a 3 (three) hour digital video disc or any substitute thereof, covering the status and progress of Works in that quarter. The video recording shall be provided to the Authority no later than 15 (fifteen) days after the close of each quarter after the Appointed Date.

11.17 Suspension of unsafe Construction Works

11.17.1 Upon recommendation of the Authority’s Engineer to this effect, or on its own volition in cases of emergency or urgency, the Authority may by notice require the Contractor to suspend forthwith the whole or any part of the Works if, in the reasonable opinion of the Authority’s Engineer or the Authority, as the case may be, such work threatens the safety of the Users and or other persons on or about the Project. Provided, however, that in case of an emergency, the Authority may *suo moto* issue the notice referred to hereinabove.

11.17.2 The Contractor shall, pursuant to the notice under Clause 11.17.1, suspend the Works or any part thereof for such time and in such manner as may be specified by the Authority and thereupon carry out remedial measures to secure the safety of suspended works, the Users, other persons and vehicles on or about the Project including pedestrians. The Contractor may by notice require the Authority’s Engineer to inspect such remedial measures forthwith and make a report to the Authority recommending whether or not the suspension hereunder may be revoked. Upon receiving the recommendations of the Authority’s Engineer, the Authority shall either revoke such suspension or instruct the Contractor to carry out such other and further remedial measures as may be necessary in the reasonable opinion of the

Authority, and the procedure set forth in this Clause 11.17 shall be repeated until the suspension hereunder is revoked.

11.17.3 Subject to the provisions of Clause 19.6, all reasonable costs incurred for maintaining and protecting the Works or part thereof during the period of suspension (the “**Preservation Costs**”), shall be borne by the Contractor; provided that if the suspension has occurred as a result of any breach of this Agreement by the Authority, the Preservation Costs shall be borne by the Authority.

11.17.4 If suspension of Works is for reasons not attributable to the Contractor, the Authority’s Engineer shall determine any Time Extension to which the Contractor is reasonably entitled in accordance with the provisions of Clause 10.4.

ARTICLE 12

COMPLETION CERTIFICATE**12.1 Tests on completion**

12.1.1 No later than 30 (thirty) days prior to the likely completion of the Project, or a Section thereof, the Contractor shall notify the Authority’s Engineer of its intent to subject the Project or a Section thereof, to Tests. The date and time of each of the Tests shall be determined by the Authority’s Engineer in consultation with the Contractor, and notified to the Authority who may designate its representative to witness the Tests. The Contractor shall either conduct the Tests as directed by the Authority’s Engineer or provide such assistance as the Authority’s Engineer may reasonably require for conducting the Tests. For the avoidance of doubt, the Parties agree that in the event of the Contractor and the Authority’s Engineer failing to mutually agree on the dates for conducting the Tests, the Contractor shall fix the dates by giving not less than 10 (ten) days’ notice to the Authority’s Engineer, and in the event the Authority’s Engineer delays the Tests hereunder, the Authority shall impose exemplary penalties on the Authority’s Engineer and shall ensure that Tests are completed in time either by the Authority’s Engineer or any substitute thereof.

12.1.2 All Tests shall be conducted in accordance with Schedule-J at the cost and expense of the Contractor. The Authority’s Engineer shall observe, monitor and review the results of the Tests to determine compliance of the Project or a Section thereof, with Specifications and Standards and if it is reasonably anticipated or determined by the Authority’s Engineer during the course of any Test that the performance of the Project or Section or any part thereof, does not meet the Specifications and Standards, it shall have the right to suspend or delay such Test and require the Contractor to remedy and rectify any Defect or deficiency. Upon completion of each Test, the Authority’s Engineer shall provide to the Contractor and the Authority copies of all Test data including detailed Test results. For the avoidance of doubt, the Parties expressly agree that the Authority’s Engineer may require the Contractor to carry out or cause to be carried out additional Tests, in accordance with Good Industry Practice, for determining the compliance of the Project or Section thereof with the Specifications and Standards.

12.2 Provisional Certificate

- 12.2.1 Subject to the provisions of Clause 12.2.5, upon completion of all Works forming part of the Project, save and except the Works for which Time Extension has been granted under Clause 10.5, the Authority’s Engineer shall, at the request of the Contractor, issue a provisional certificate of completion substantially in the form set forth in Schedule-K (the “**Provisional Certificate**”) if the Tests for and in respect of the completed Works are successful. The Provisional Certificate shall have appended thereto a list of outstanding items of work (the “**Punch List**”) that need to be completed in accordance with the provisions of this Agreement. The Contractor undertakes to complete the minor outstanding items of works in respect of those Sections of the Project for which the Provisional Certificate has been issued, within a period of 30 (thirty) days of the date of Provisional Certificate, and those parts of the Works in respect of which Time Extension has been granted, within the extended period thereof. For the avoidance of doubt, the Parties agree that the Punch List shall include all Works for which Time Extension has been granted and shall also include any minor outstanding items of work forming part of the completed Sections if such works do not materially affect the use of the completed Sections for their intended purpose. The Parties further agree that Provisional Certificate shall not be issued if the completed Works cannot be safely and reliably placed in service of the Users thereof.
- 12.2.2 Upon issue of Provisional Certificate, the provisions of Article 15 shall apply to the completed parts of the Project and the property and ownership of all such completed Works shall vest in the Authority.
- 12.2.3 If the Authority’s Engineer determines that the Project or any completed part thereof does not conform to the provisions of this Agreement and cannot be safely and reliably placed in operation, it shall forthwith make a report in this behalf and send copies thereof to the Authority and the Contractor and withhold issuance of the Provisional Certificate until the Defects or deficiencies are rectified by the Contractor and Tests are successful in accordance with this Article 12.
- 12.2.4 Notwithstanding anything to the contrary contained in Clause 12.2.3, the Authority may, at any time after receiving a report from the Authority’s Engineer under that Clause, direct the Authority’s Engineer to issue a Provisional Certificate under Clause 12.2.1 and such direction shall be complied forthwith.
- 12.2.5 No Provisional Certificate shall be issued under the provisions of this Clause 12.2 until the Contractor has submitted valid claims for payment of at least 80% (eighty percent) of the amount arrived at after reducing the lump sum price specified in

Clause 17.1.1 by the amount attributable to works which have been withdrawn under the provisions of Clause 8.3.3. For the avoidance of doubt and by way of illustration, the Parties agree that if the Contract Price specified in Clause 17.1.1 is Rs.105 cr. (Rs. one hundred and five crore) and the works withdrawn under Clause 8.3.3 have a value of Rs.5 cr. (Rs. five crore), a Provisional Certificate shall not be issued until valid claims for payment of an amount of Rs.80 cr. (Rs. eighty crore) have been submitted by the Contractor in accordance with the provisions of this Agreement. It is further agreed that all price adjustments made in pursuance of Clause 17.10 shall not be reckoned for computation of the claims for payments referred to in this Clause 12.2.5. It is also agreed that any Change of Scope effected within 30 (thirty) days of the Appointed Date shall be reckoned for the purposes of determining the Contract Price hereunder.

12.3 Completion of remaining Works

All items in the Punch List shall be completed by the Contractor in accordance with the provisions of this Agreement. For any delay in their completion other than for the reasons attributable to the Authority or due to Force Majeure, the Authority shall be entitled to recover Damages from the Contractor in accordance with the provisions of Clause 10.3.2 of this Agreement.

12.4 Completion Certificate

12.4.1 Upon completion of all Works, including the items specified in the Punch List, and the Authority’s Engineer determining the Tests to be successful, it shall forthwith issue to the Contractor and the Authority a certificate substantially in the form set forth in Schedule-K (the “**Completion Certificate**”).

12.4.2 Upon receiving the Completion Certificate, the Contractor shall remove its equipment, materials, debris and temporary works from the Site within a period of 30 (thirty) days thereof, failing which the Authority may remove or cause to be removed, such equipment, materials, debris and temporary works and recover from the Contractor an amount equal to 120% (one hundred and twenty percent) of the actual cost of removal incurred by the Authority.

12.4.3 Without prejudice to the obligations of the Contractor specified in Article 15, the property and ownership of all the completed Works forming part of the Project shall vest in the Authority.

12.5 Rescheduling of Tests

If the Authority’s Engineer certifies to the Authority and the Contractor that it is unable to issue the Completion Certificate or Provisional Certificate, as the case may be, because of events or circumstances on account of which the Tests could not be held or had to be suspended, the Contractor shall be entitled to re-schedule the Tests and hold the same as soon as reasonably practicable.

ARTICLE 13

CHANGE OF SCOPE**13.1 Change of Scope**

13.1.1 The Authority may, notwithstanding anything to the contrary contained in this Agreement, require the Contractor to make modifications or alterations to the Works (“**Change of Scope**”) before the issue of the Completion Certificate either by giving an instruction or by requesting the Contractor to submit a proposal for Change of Scope involving additional cost or reduction in cost. Any such Change of Scope shall be made and valued in accordance with the provisions of this Article 13.

13.1.2 Change of Scope shall mean:

- 1) change in specifications of any item of Works;
- 2) omission of any work from the Scope of the Project except under Clause 8.3.3; provided that, subject to Clause 13.5, the Authority shall not omit any work under this Clause in order to get it executed by any other entity; or
- 3) any additional work, Plant, Materials or services which are not included in the Scope of the Project, including any associated Tests on completion of construction.

13.1.3 If the Contractor determines at any time that a Change of Scope will, if adopted, (i) accelerate completion, (ii) reduce the cost to the Authority of executing, maintaining or operating the Project, (iii) improve the efficiency or value to the Authority of the completed Project, or (iv) otherwise be of benefit to the Authority, it shall prepare a proposal with relevant details at its own cost. The Contractor shall submit such proposal, supported with the relevant details including the amount of reduction in the Contract Price, if any, to the Authority to consider such Change of Scope. The Authority shall, within 15 (fifteen) days of receipt of such proposal, either accept such Change of Scope with modifications, if any, and initiate proceedings therefor in accordance with this Article 13 or reject the proposal and inform the Contractor of its decision. For the avoidance of doubt, the Parties agree that the Contractor shall not undertake any Change of Scope without a Change of Scope Order being issued by the Authority, save and except any Works necessary for meeting any Emergency.

13.2 Procedure for Change of Scope

13.2.1 In the event of the Authority determining that a Change of Scope is necessary, it may direct the Authority’s Engineer to issue to the Contractor a notice specifying in reasonable detail the works and services contemplated thereunder (the “**Change of Scope Notice**”).

13.2.2 Upon receipt of a Change of Scope Notice, the Contractor shall, with due diligence, provide to the Authority and the Authority’s Engineer such information as is necessary, together with preliminary documentation in support of:

- a) the impact, if any, which the Change of Scope is likely to have on the Project Completion Schedule if the works or services are required to be carried out during the Construction Period; and
- b) the options for implementing the proposed Change of Scope and the effect, if any, each such option would have on the costs and time thereof, including the following details:
- c) break down of the quantities, Lump Sum and cost for different items of work;
- d) proposed design for the Change of Scope; and
- e) Proposed modifications, if any, to the Project Completion Schedule of the Project. For the avoidance of doubt, the Parties expressly agree that, subject to the provisions of Clause 13.4.2, the Contract Price shall be increased or decreased, as the case may be, on account of Change of Scope.

13.2.3 The Contractor’s quotation of costs for the Change of Scope shall be determined on the following principles:

- a) For works of similar nature compared to the Works being executed, the quotation shall be based on the rate for the work inclusive of all labour, Materials, equipment, incidentals, overheads and profit derived in accordance with the provisions of Clause 17.3; and the price adjustment in accordance with Clause 17.8 shall apply to the rates so worked out.
- b) For works not similar in nature to the Works being executed, the cost of work shall be derived on the basis of Bihar SOR Standard Data Book.

13.2.4 Upon reaching an agreement, the Authority shall issue an order (the “**Change of Scope Order**”) requiring the Contractor to proceed with the performance thereof. In the event that the Parties are unable to agree, the Authority may:

- c) issue a Change of Scope Order requiring the Contractor to proceed with the performance thereof at the rates and conditions approved by the Authority till the matter is resolved in accordance with Article 24; or
- d) Proceed in accordance with Clause 13.5.

13.2.5 The provisions of this Agreement, insofar as they relate to Works and Tests, shall apply *mutatis mutandis* to the works undertaken by the Contractor under this Article 13.

13.3 Payment for Change of Scope

Payment for Change of Scope shall be made in accordance with the payment schedule specified in the Change of Scope Order.

13.4 Restrictions on Change of Scope

13.4.1 No Change of Scope shall be executed unless the Authority has issued the Change of Scope Order save and except any Works necessary for meeting any Emergency.

13.4.2 Unless the Parties mutually agree to the contrary, the total value of all Change of Scope Orders shall not exceed 10% (ten percent) of the Contract Price.

13.4.3 Notwithstanding anything to the contrary in this Article 13, no change arising from any default of the Contractor in the performance of its obligations under this Agreement shall be deemed to be Change of Scope, and shall not result in any adjustment of the Contract Price or the Project Completion Schedule.

13.5 Power of the Authority to undertake works

13.5.1 In the event the Parties are unable to agree to the proposed Change of Scope Orders in accordance with Clause 13.2, the Authority may, after giving notice to the Contractor and considering its reply thereto, award such works or services to any person on the basis of open competitive bidding from amongst bidders who are pre-qualified for undertaking the additional work; provided that the Contractor shall have the option of matching the first ranked bid in terms of the selection criteria, subject to payment of 2% (two percent) of the bid amount to the Authority, and thereupon securing the award of such works or services. For the avoidance of doubt, it is agreed that the Contractor shall be entitled to exercise such option only if it has

participated in the bidding process and its bid does not exceed the first ranked bid by more than 10% (ten per cent) thereof. It is also agreed that the Contractor shall provide assistance and cooperation to the person who undertakes the works or services hereunder, but shall not be responsible for rectification of any Defects in works carried out by other agencies. For the avoidance of doubt, the Authority acknowledges and agrees that it shall not undertake any works or services under this Clause 13.5.1 if such works or services cause a Material Adverse Effect on the Contractor.

- 13.5.2 The works undertaken in accordance with this Clause 13.5 shall conform to the Specifications and Standards and shall be carried out in a manner that minimises disruption to the Project. The provisions of this Agreement, insofar as they relate to Works and Tests, shall apply *mutatis mutandis* to the works carried out under this Clause 13.5.

ARTICLE 14 - Deleted

ARTICLE 15

DEFECTS LIABILITY

15.1 Defects Liability Period

15.1.1 The Contractor shall be responsible for all the Defects and deficiencies, except usual wear and tear in the Project or any Section thereof, till the expiry of a period of Two (02) years commencing from the date of Provisional Certificate or expiry of a period of eighteen (18) months from the date of issue of completion certificate, whichever is later (the “**Defects Liability Period**”).

15.1.2 Deleted.

15.2 Remedy and rectification of Defects and deficiencies

Without prejudice to the provisions of Clause 15.2 the Contractor shall repair or rectify all Defects and deficiencies observed by the Authority’s Engineer during the Defects Liability Period within a period of 15 (fifteen) days from the date of notice issued by the Authority’s Engineer in this behalf, or within such reasonable period as may be determined by the Authority’s Engineer at the request of the Contractor, in accordance with Good Industry Practice.

15.3 Cost of remedying Defects

For the avoidance of doubt, any repair or rectification undertaken in accordance with the provisions of Clause 15.2, including any additional tests, shall be carried out by the Contractor at its own risk and cost, to the extent that such rectification or repair is attributable to:

- a) the design of the Project;
- b) Works, Plant, Materials or workmanship not being in accordance with this Agreement and the Specifications and Standards;
- c) improper maintenance during construction of the Project by the Contractor; or
- d) failure by the Contractor to comply with any other obligation under this Agreement.

15.4 Contractor’s failure to rectify Defects

In the event that the Contractor fails to repair or rectify such Defect or deficiency within the period specified in Clause 15.2, the Authority shall be entitled to get the same repaired, rectified or remedied at the Contractor’s cost so as to make the Project conform to the Specifications and Standards and the provisions of this Agreement. All costs consequent thereon shall, after due consultation with the Authority and the Contractor, be determined by the Authority’s Engineer. The cost so determined, and an amount equal to 20% (twenty percent) of such cost as Damages, shall be recoverable by the Authority from the Contractor and may be deducted by the Authority from any monies due to the Contractor.

15.5 Contractor to search cause

15.5.1 The Authority’s Engineer may instruct the Contractor to examine the cause of any Defect in the Works or part thereof before the expiry of the Defects Liability Period.

15.5.2 In the event any Defect identified under Clause 15.5.1 is attributable to the Contractor, the Contractor shall rectify such Defect within the period specified by the Authority’s Engineer, and shall bear the cost of the examination and rectification of such Defect.

15.5.3 In the event such Defect is not attributable to the Contractor, the Authority’s Engineer shall, after due consultation with the Authority and the Contractor, determine the costs incurred by the Contractor on such examination and notify the same to the Contractor, with a copy to the Authority, and the Contractor shall be entitled to payment of such costs by the Authority.

15.6 Extension of Defects Liability Period

15.6.1 The Defects Liability Period shall be deemed to be extended till the identified Defects under Clause 15.2 have been remedied.

15.6.2 Any Materials or Works with Defects identified under Clause 15.2 and replaced or repaired during the Defects Liability Period or the extended Defects Liability Period, as the case may be, would be further warranted for a period of twelve (12) months from the date of completion of such repair or replacement.

15.6.3 The Contractor shall upon termination or expiry of this Agreement, or upon expiry of the Defects Liability Period, assign any outstanding benefit in respect of any subcontract or any warranty from any subcontractor, to the Authority or to such other person as the Authority may direct.

ARTICLE 16

AUTHORITY’S ENGINEER

16.1 Appointment of the Authority’s Engineer

16.1.1 The Authority shall appoint a consulting engineering firm substantially in accordance with the selection criteria set forth in Schedule-L, to be the engineer under this Agreement (the “**Authority’s Engineer**”).

16.1.2 The appointment of the Authority’s Engineer shall be made no later than 15 (fifteen) days from the date of this Agreement. The Authority shall notify the appointment or replacement of the Authority’s Engineer to the Contractor forthwith.

16.1.3 The staff of the Authority’s Engineer shall include suitably qualified engineers and other professionals who are competent to assist the Authority’s Engineer to carry out its duties.

16.2 Duties and functions of the Authority’s Engineer

16.2.1 The Authority’s Engineer shall perform its duties and discharge its functions in accordance with the provisions of this Agreement, and substantially in accordance with the terms of reference (“**Terms of Reference**” or “**TOR**”) set forth in Annex 1 of Schedule L, but subject to obtaining prior written approval of the Authority before determining:

- a) any Time Extension;
- b) any additional cost to be paid by the Authority to the Contractor;
- c) the Termination Payment; or
- d) any other matter which is not specified in (a), (b) or (c) above and which creates an obligation or liability on either Party for a sum exceeding Rs. 5,00,000 (Rs. five lakh).

16.2.2 No decision or communication of the Authority’s Engineer shall be effective or valid unless it is accompanied by an attested true copy of the approval of the Authority for and in respect of any matter specified in Clause 16.2.1.

16.2.3 The Authority’s Engineer shall submit regular periodic reports, at least once every month, to the Authority in respect of its duties and functions under this Agreement. Such reports shall be submitted by the Authority’s Engineer within 10 (ten) days of the beginning of every month. For the avoidance of doubt, the Authority’s Engineer shall include in its report compliance of the recommendations of the Safety Consultant.

16.2.4 A true copy of all communications sent by the Authority to the Authority’s Engineer and by the Authority’s Engineer to the Authority shall be sent forthwith by the Authority’s Engineer to the Contractor.

16.2.5 A true copy of all communications sent by the Authority’s Engineer to the Contractor and by the Contractor to the Authority’s Engineer shall be sent forthwith by the Authority’s Engineer to the Authority.

16.3 Authorized signatories

The Authority shall require the Authority’s Engineer to designate and notify to the Authority and the Contractor up to 2 (two) persons employed in its firm to sign for and on behalf of the Authority’s Engineer, and any communication or document required to be signed by the Authority’s Engineer shall be valid and effective only if signed by any of the designated persons; provided that the Authority’s Engineer may, by notice in writing, substitute any of the designated persons by any of its employees.

16.4 Instructions of the Authority’s Engineer

16.4.1 The Authority’s Engineer may issue to the Contractor instructions for remedying any Defect. The Contractor shall take such instructions from the Authority’s Engineer only.

16.4.2 The instructions issued by the Authority’s Engineer shall be in writing. However, if the Authority’s Engineer issues any oral instructions to the Contractor, it shall confirm in writing the oral instructions within 2 (two) working days of issuing such oral instructions.

16.4.3 In case the Contractor does not receive the confirmation of the oral instructions within the time specified in Clause 16.4.2, the Contractor shall seek the written confirmation of the oral instructions from the Authority’s Engineer and shall obtain acknowledgement from the Authority’s Engineer of the communication seeking written confirmation. In case of failure of the Authority’s Engineer to reply to the Contractor within 2 (two) days of the receipt of the communication from the Contractor, the Contractor may not carry out the instruction.

16.5 Determination by the Authority’s Engineer

16.5.1 The Authority’s Engineer shall consult with each Party in an endeavour to reach agreement wherever this Agreement provides for the determination of any matter by the Authority’s Engineer. If such agreement is not achieved, the Authority’s Engineer shall make a fair determination in accordance with this Agreement having due regard to all relevant circumstances. The Authority’s Engineer shall give notice to both the Parties of each such agreement or determination, with supporting particulars.

16.5.2 Each Party shall give effect to each agreement or determination made by the Authority’s Engineer in accordance with the provisions of this Agreement. Provided, however, that if any Party disputes any instruction, decision, direction or determination of the Authority’s Engineer, the Dispute shall be resolved in accordance with the Dispute Resolution Procedure.

16.6 Remuneration of the Authority’s Engineer

The remuneration, cost and expenses of the Authority’s Engineer shall be paid by the Authority.

16.7 Termination of appointment of the Authority’s Engineer

16.7.1 The Authority may, in its discretion, replace the Authority’s Engineer at any time, but only upon appointment of another Authority’s Engineer in accordance with Clause 16.1.

16.7.2 If the Contractor has reasons to believe that the Authority’s Engineer is not discharging its duties and functions in accordance with the provisions of this Agreement, it may make a written representation to the Authority and seek termination of the appointment of the Authority’s Engineer. Upon receipt of such representation, the Authority shall hold a tripartite meeting with the Contractor and Authority’s Engineer and make best efforts for an amicable resolution of the Dispute. In the event that the appointment of the Authority’s Engineer is terminated hereunder, the Authority shall appoint forthwith another Authority’s Engineer in accordance with Clause 16.1.

16.8 Interim Arrangement

In the event that the Authority has not appointed an Authority’s Engineer, or the Authority’s Engineer so appointed has relinquished its functions or defaulted in discharge thereof, the Authority may, in the interim, designate and authorize any person to discharge the functions of the Authority’s Engineer in accordance with the provisions of this Agreement, save and except that such person shall not exercise any functions relating to review, comment, approval or inspection as specified in this Agreement for and in respect of the Authority’s Engineer, and such functions shall be discharged as and when an Authority’s Engineer is appointed in accordance with the provisions of this Agreement. Provided, however, that nothing contained in this Clause 16.8 shall in any manner restrict the rights of the Authority to enforce compliance of the provisions of this Agreement.

Part IV

Financial Covenants

ARTICLE 17

PAYMENTS**17.1 Contract Price**

17.1.1 The Authority shall make payments to the Contractor for the Works on the basis of the lump sum price accepted by the Authority in consideration of the obligations specified in this Agreement for an amount of Rs. ***** (Rs. *****) (the “**Contract Price**”), which shall be subject to adjustments in accordance with the provisions of this Agreement. The Parties further agree that save and except as provided in this Agreement, the Contract Price shall be valid and effective until issue of Completion Certificate.

17.1.2 The Contract Price includes all duties, taxes, royalty, and fees that may be levied in accordance with the laws and regulations in force as on the Base Date on the Contractor’s equipment, Plant, Materials and supplies acquired for the purpose of this Agreement and on the Works undertaken under this Agreement. Nothing in this Agreement shall relieve the Contractor from its responsibility to pay any tax including any tax that may be levied in India on profits made by it in respect of this Agreement.

17.1.3 The Contract Price shall not be adjusted for any change in duties, taxes etc. specified in Clause 17.1.2 above, save and except as specified in Clauses 17.8 and 17.13.

17.1.4 The Contract Price shall not be adjusted to take account of any unforeseen difficulties or costs, unless otherwise provided for in this Agreement.

17.1.5 Unless otherwise specified in this Agreement, the Contract Price covers all the Contractor’s obligations for the Works under this Agreement and all things necessary for the Construction thereof and for the rectification of any Defects in the Project.

17.1.6 All payments under this Agreement shall be made in Indian Rupees.

17.2 Advance Payment

17.2.1 The Authority shall make an advance payment (the “**Advance Payment**”), equal to 10% (ten percent) of the Contract Price, for mobilization expenses and for acquisition of equipment. The Advance Payment shall carry simple interest at the rate of 8% (eight per cent) per annum and shall be made in two equal installments.

17.2.2 The Contractor may apply to the Authority for the 1st (first) installment of the Advance Payment at any time after the Appointed Date, along with an irrevocable and unconditional guarantee from a Bank for an amount equivalent to 110% (one hundred and ten per cent) of such installment, substantially in the form provided at Annex-III of Schedule-F, to remain effective till the complete and full repayment of such installment and any interest thereon.

- 17.2.3 At any time, after 60 (sixty) days from the Appointed Date, the Contractor may apply to the Authority for the 2nd (second) installment of the Advance Payment along with an irrevocable and unconditional guarantee from a Bank for an amount equivalent to 110% (one hundred and ten per cent) of such installment, substantially in the form provided at Annex-III of Schedule-F, to remain effective till the complete and full repayment of such installment and any interest thereon.
- 17.2.4 The installments of Advance Payment shall be paid by the Authority to the Contractor within 15 (fifteen) days of the receipt of its respective requests in accordance with the provisions of this Clause 17.2.
- 17.2.5 The Advance Payment shall be recovered through proportionate deductions to be made in the Interim Payments Certificates issued in accordance with the provisions of Clause 17.5.2. Deductions of Advance Payment shall commence from the Interim Payment Certificate in which the cumulative interim payments certified shall have reached 50% (fifty per cent) of the Contract Price. The total amount recovered in each Interim Payment Certificate shall not exceed 30% (thirty per cent) of the amount due and payable under such Interim Payment Certificate, which shall include interest on the amount being recovered hereunder. For the avoidance of doubt, the Parties agree that in the event the total payment specified in any Interim Payment Certificate exceeds the limit of 50% (fifty per cent) of the Contract Price, the proportion of recovery hereunder shall be restricted to the amount exceeding 50% (fifty per cent) of the Contract Price. By way of illustration, the Parties agree that if the first recovery of say, Rupees ‘x’ is made after 20 (twenty) months from the date of 1st (first) installment of the Advance Payment, interest on Rupees ‘x’ shall be due and payable for a period of 20 (twenty) months; and when the next recovery is made in the following month for say, Rupees ‘y’, interest on Rupees ‘y’ shall be due and payable for a period of 21 (twenty one) months. The Parties further agree that no payments in excess of 90% (ninety per cent) of the Contract Price shall be released to the Contractor until the Advance Payment, including interest thereon, has been fully recovered.
- 17.2.6 If the Advance Payment has not been fully repaid prior to Termination under Clause 19.7 or Article 21, as the case may be, the whole of the balance then outstanding shall immediately become due and payable by the Contractor to the Authority. In the event of Termination for Contractor Default, the Advance Payment shall be deemed to carry interest at an annual rate of 3% (three per cent) above the Bank Rate from the date of Advance Payment to the date of recovery thereof. For the avoidance of doubt, the aforesaid interest shall be payable on each installment of the Advance Payment, regardless of whether the installment or any part thereof has been repaid to the Authority prior to Termination.

17.3 Procedure for estimating the payment for the Works

- 17.3.1 The Authority shall make interim payments to the Contractor, as certified by the Authority’s Engineer on completion of a stage.
- 17.3.2 The Contractor shall make its claim for interim payment for the stages completed till the end of the month for which the payment is claimed, valued in accordance with Clause 17.3.1, and supported with necessary particulars and documents in accordance with this Agreement.
- 17.3.3 Any reduction in the Contract Price arising out of Change of Scope or the Works withdrawn under Clause 8.3, as the case may be, shall not affect the amounts payable for the items or stage payments thereof which are not affected by such Change of Scope or withdrawal.

17.4 Stage Payment Statement for Works

The Contractor shall submit a statement (the “**Stage Payment Statement**”), in 3 copies, by the 7th (seventh) day of a month to the Authority’s Engineer in the form set forth in Schedule-M, showing the amount calculated in accordance with Clause 17.3 to which the Contractor considers itself entitled for the completed stage(s) of Works. The Stage Payment Statement shall be accompanied with the progress reports and any other supporting documents. The Contractor shall not submit any claim for payment of incomplete stages of work. In the event that there is no claim for a month in accordance with the provisions of this Clause 17.4, the Contractor shall submit a ‘Nil’ claim to the Authority’s Engineer.

17.5 Stage Payment for Works

- 17.5.1 Within 10 (ten) days of receipt of the Stage Payment Statement from the Contractor pursuant to Clause 17.4, the Authority’s Engineer shall broadly determine the amount due to the Contractor and recommend the release of 90% (ninety per cent) of the amount so determined as part payment against the Stage Payment Statement, pending issue of the Interim Payment Certificate by the Authority’s Engineer. Within 10 (ten) days of the receipt of recommendation of the Authority’s Engineer, the Authority shall make an electronic payment thereof directly to the Contractor’s bank account.
- 17.5.2 Within 15 (fifteen) days of the receipt of the Stage Payment Statement referred to in Clause 17.4, the Authority’s Engineer shall determine and shall deliver to the Authority and the Contractor an IPC certifying the amount due and payable to the Contractor, after adjusting the payments already released to the Contractor against the said statement. For the avoidance of doubt, the Parties agree that the IPC shall

specify all the amounts that have been deducted from the Stage Payment Statement and the reasons therefore.

17.5.3 In cases where there is a difference of opinion as to the value of any stage, the opinion of the Authority’s Engineer shall prevail and interim payments shall be made to the Contractor on that basis; provided that the foregoing shall be without prejudice to the Contractor’s right to raise a Dispute.

17.5.4 The Authority’s Engineer may, for reasons to be recorded, withhold from payment:

- a) the estimated value of work or obligation that the Contractor has failed to perform in accordance with this Agreement and in respect of which the Authority’s Engineer had notified the Contractor; and
- b) the estimated cost of rectification of any Works which have not been constructed in accordance with this Agreement.

17.5.5 Payment by the Authority hereunder shall be deemed to be provisional and shall not be construed as the Authority’s acceptance, approval, consent or satisfaction with the work done.

17.5.6 In the event the amounts released by the Authority under Clause 17.5.1 exceed the amount finally determined by the Authority’s Engineer pursuant to Clauses 17.5.2 to 17.5.4, the difference thereof shall be accounted for in the next IPC.

17.6 Payment of Damages

17.6.1 The Contractor may claim Damages due and payable to it in accordance with the provisions of this Agreement.

17.6.2 The Authority’s Engineer shall issue the IPC within 15 (fifteen) days of the receipt of the claim under Clause 17.6.1, after making adjustments in accordance with the provisions of this Agreement. The Authority shall pay to the Contractor the amount due under such IPC within a period of 30 (thirty) days from the date of the submission of the claim under this Clause 17.6.

17.7 Time of payment and interest

17.7.1 The Authority shall pay to the Contractor any amount due under any payment certificate issued by the Authority’s Engineer in accordance with the provisions of this Agreement as follows:

Payment shall be made no later than 30 (thirty) days from the date of submission of the Stage Payment Statement by the Contractor to the Authority’s Engineer for certification in accordance with the provisions of Clause 17.4 for an IPC; provided, however, that in the event the IPC is not

issued by the Authority’s Engineer within the aforesaid period of 30 (thirty) days, the Authority shall pay the amount shown in the Contractor’s Stage Payment Statement and any discrepancy therein shall be adjusted in the next payment certificate; and payment shall be made no later than 30 (thirty) days from the date of submission of the Final Payment Certificate for Works along with the discharge submitted to the Authority’s Engineer for certification in accordance with the provisions of Clause 17.12.

17.7.2 Deleted.

17.8 Deleted

17.9 Deleted.

17.10 Final Payment Statement

17.10.1 Within 60 (sixty) days of receiving the Completion Certificate under Clause 12.4, the Contractor shall submit to the Authority’s Engineer six copies of a final payment statement (the “**Final Payment Statement**”), with supporting documents, in the form prescribed by the Authority’s Engineer in respect of:

- a) the summary of Contractor’s Stage Payment Statements for Works as submitted in accordance with Clause 17.4;
- b) the amounts received from the Authority against each claim; and
- c) any further sums which the Contractor considers due to it from the Authority.

17.10.2 If the Authority’s Engineer disagrees with or cannot verify any part of the Final Payment Statement, the Contractor shall submit such further information as the Authority’s Engineer may reasonably require.

17.10.3 The Authority’s Engineer shall deliver to the Authority:

- 1) an IPC for those parts of the Final Payment Statement which are not in dispute, along with a list of disputed items which shall then be settled in accordance with the provisions of Article 24; or
- 2) a Final Payment Certificate in accordance with Clause 17.15, if there are no disputed items.

17.10.4 The Authority’s Engineer does not prescribe the form referred to in Clause 17.10.1 within 15 (fifteen) days of the date of issue of the Completion Certificate, the

Contractor shall submit the statement in such form as it deems fit.

17.11 Discharge

Upon submission of the Final Payment Statement under Clause 17.10, the Contractor shall give to the Authority, with a copy to the Authority’s Engineer, a written discharge confirming that the total of the Final Payment Statement represents full and final settlement of all monies due to the Contractor in respect of this Agreement for all the Works arising out of this Agreement, except for any monies due to either Party on account of any Defect. Provided that such discharge shall become effective only after the payment due has been made in accordance with the Final Payment Certificate issued pursuant to Clause 17.12.

17.12 Final Payment Certificate

17.12.1 Within 30 (thirty) days after receipt of the Final Payment Statement under Clause 17.10, and the written discharge under Clause 17.11, and there being no disputed items of claim, the Authority’s Engineer shall deliver to the Authority, with a copy to the Contractor, a final payment certificate (the “**Final Payment Certificate**”) stating the amount which, in the opinion of the Authority’s Engineer, is finally due under this Agreement or otherwise. For the avoidance of doubt, before issuing the Final Payment Certificate, the Authority’s Engineer shall ascertain from the Authority all amounts previously paid by the Authority, all sums due to the Authority, and the balance, if any, due from the Authority to the Contractor or from the Contractor to the Authority, as the case may be.

17.12.2 The Authority shall, in accordance with the provisions of Clause 17.7, pay to the Contractor the amount which is specified as being finally due in the Final Payment Certificate.

17.13 Change in law

17.13.1 If as a result of Change in Law, the Contractor suffers any additional costs in the execution of the Works or in relation to the performance of its other obligations under this Agreement, the Contractor shall, within 15 (fifteen) days from the date it becomes reasonably aware of such addition in costs, notify the Authority with a copy to the Authority’s Engineer of such additional costs due to Change in Law.

17.13.2 If as a result of Change in Law, the Contractor benefits from any reduction in costs for the execution of this Agreement or in accordance with the provisions of this Agreement, either Party shall, within 15 (fifteen) days from the date it becomes reasonably aware of such reduction in costs, notify the other Party with a copy to the Authority’s Engineer of such reduction in costs due to Change in Law.

17.13.3 The Authority’s Engineer shall, within 15 (fifteen) days from the date of receipt of notice from the Contractor or the Authority, as the case may be, determine any addition or reduction to the Contract Price, as the case may be, due to the Change in Law.

17.14 Correction of Interim Payment Certificates

The Authority’s Engineer may by an Interim Payment Certificate make any correction or modification in any previous Interim Payment Certificate issued by the Authority’s Engineer.

17.15 Authority’s claims

If the Authority considers itself to be entitled to any payment from the Contractor under any Clause of this Agreement, it shall give notice and particulars to the Contractor 20 (twenty) days before making the recovery from any amount due to the Contractor, and shall take into consideration the representation, if any, made by the Contractor in this behalf, before making such recovery.

17.16 Bonus for early completion

In the event that the Project Completion Date occurs prior to the Scheduled Completion Date, the Contractor shall be entitled to receive a payment of bonus equivalent to 0.03% (zero point zero three per cent) of the Contract Price for each day by which the Project Completion Date precedes the Scheduled Completion Date, but subject to a maximum of 3% (three per cent) of the Contract Price. Provided, however, that the payment of bonus, if any, shall be made only after the issue of the Completion Certificate. For the avoidance of doubt, the Parties agree that for the purpose of determining the bonus payable hereunder, the Contract Price shall always be deemed to be the amount specified in Clause 17.1.1, and shall exclude any revision thereof for any reason.

ARTICLE 18

INSURANCE

18.1 Insurance for Works

18.1.1 The Contractor shall effect and maintain at its own cost the insurances specified in Schedule-N and as per the requirements under Applicable Laws.

18.1.2 Subject to the provisions of Clause 19.6, the Contractor shall, in accordance with the provisions of this Agreement, be liable to bear the cost of any loss or damage that does not fall within the scope of this Article 18 or cannot be recovered from the insurers.

18.1.3 Save and except as provided in Clause 18.1.4, the Contractor shall fully indemnify, hold harmless and defend the Authority from and against any and all losses, damages, costs, charges and/or claims with respect to:

- I. the death of or injury to any person; or
- II. the loss of or damage to any property,

that may arise out of or in consequence of any breach by the Contractor of this Agreement during the execution of the Works or the remedying of any Defects therein.

18.1.4 Notwithstanding anything in Clause 18.1.3, the Authority shall fully indemnify the Contractor from and against any and all losses, damages, costs, charges, proceedings and/or claims arising out of or with respect to

- a) the use or occupation of land or any part thereof by the Authority;
- b) the damage to property which is the unavoidable result of the execution and completion of the Works, or the remedying of any Defects therein, in accordance with this Agreement; and
- c) the death of or injury to persons or loss of or damage to property resulting from any act or neglect of the Authority, its agents, servants or other contractors, not being employed by the Contractor.

Provided, however, that in the event of any injury or damage as a result of the contributory negligence of the Contractor, the Authority shall be liable to indemnify the Contractor from and against any and all losses, damages, costs,

charges, proceedings and/or claims to the extent as proportionate to the liability of the Authority, its servants or agents or other contractors not associated with the Contractor in such injury or damage.

18.1.5 Without prejudice to the provisions of Clauses 18.1.3 and 18.1.4, the Contractor shall maintain or effect such third party insurances as may be required under Applicable Laws.

18.1.6 The Contractor shall provide to the Authority, within 30 days of the Appointed Date, evidence of professional liability insurance maintained by its Design engineer and/or consultants to cover the risk of professional negligence in the design of Works. The professional liability cover shall be for a sum of not less than [3% (three per cent)] of the Contract Price and shall be maintained until the end of the Defects Liability Period.

18.2 Notice to the Authority

No later than 15 (fifteen) days after the date of this Agreement, the Contractor shall by notice furnish to the Authority, in reasonable detail, information in respect of the insurances that it proposes to effect and maintain in accordance with this Article. Within 15 (fifteen) days of receipt of such notice, the Authority may require the Contractor to effect and maintain such other insurances as may be necessary pursuant hereto, and in the event of any difference or disagreement relating to any such insurance, the Dispute Resolution Procedure shall apply.

18.3 Evidence of Insurance Cover

18.3.1 All insurances obtained by the Contractor in accordance with this Article 18 shall be maintained with insurers on terms consistent with Good Industry Practice. Within 10 (ten) days from the Appointed Date, the Contractor shall furnish to the Authority notarized true copies of the certificate(s) of insurance, copies of insurance policies and premium payment receipts in respect of such insurance, and no such insurance shall be cancelled, modified, or allowed to expire or lapse until the expiration of at least 45 (forty-five) days after notice of such proposed cancellation, modification or non-renewal has been delivered by the Contractor to the Authority.

18.3.2 The Contractor shall procure and ensure the adequacy of the insurances at all times in accordance with the provisions of this Agreement.

18.4 Remedy for failure to insure

If the Contractor shall fail to effect and keep in force all insurances for which it is responsible pursuant hereto, the Authority shall have the option to either keep in force any such insurances, and pay such premia and recover the costs thereof from the Contractor, or in the event of computation of a Termination Payment, treat an

amount equal to the Insurance Cover as deemed to have been received by the Contractor.

18.5 Waiver of subrogation

All insurance policies in respect of the insurance obtained by the Contractor pursuant to this Article 18 shall include a waiver of any and all rights of subrogation or recovery of the insurers thereunder against, inter alia, the Authority, and its assigns, successors, undertakings and their subsidiaries, Affiliates, employees, insurers and underwriters, and of any right of the insurers to any set-off or counterclaim or any other deduction, whether by attachment or otherwise, in respect of any liability of any such person insured under any such policy or in any way connected with any loss, liability or obligation covered by such policies of insurance.

18.6 Contractor’s waiver

The Contractor hereby further releases, assigns and waives any and all rights of subrogation or recovery against, inter alia, the Authority and its assigns, undertakings and their subsidiaries, Affiliates, employees, successors, insurers and underwriters, which the Contractor may otherwise have or acquire in or from or in any way connected with any loss, liability or obligation covered by policies of insurance maintained or required to be maintained by the Contractor pursuant to this Agreement (other than third party liability insurance policies) or because of deductible clauses in or inadequacy of limits of any such policies of insurance.

18.7 Cross liabilities

Any such insurance maintained or effected in pursuance of this Article 18 shall include a cross liability clause such that the insurance shall apply to the Contractor and to the Authority as separately insured.

18.8 Accident or injury to workmen

Notwithstanding anything contained in this Agreement, it is hereby expressly agreed between the Parties that the Authority shall not be liable for or in respect of any damages or compensation payable to any workman or other person in the employment of the Contractor or Sub-contractor, save and except as for death or injury resulting from any act, omission or default of the Authority, its agents or servants. The Contractor shall indemnify and keep indemnified the Authority from and against all such claims, proceedings, damages, costs, charges, and expenses whatsoever in respect of the above save and except for those acts, omissions or defaults for which the Authority shall be liable.

18.9 Insurance against accident to workmen

The Contractor shall effect and maintain during the Agreement such insurances as may be required to insure the Contractor’s personnel and any other persons employed by it on the Project from and against any liability incurred in pursuance of this Article 18 Provided that for the purposes of this Clause 18.9, the Contractor’s personnel/any person employed by the Contractor shall include the Sub-contractor and its personnel. Provided further that in respect of any persons employed by any Sub-contractor, the Contractor’s obligations to insure as aforesaid under this Clause 18.9 shall be discharged if the Sub-contractor shall have insured against any liability in respect of such persons in such manner that the Authority is indemnified under the policy. The Contractor shall require such Sub-contractor to produce before the Authority, when required, such policy of insurance and the receipt for payment of the current premium within 10 (ten) days of such demand being made by the Authority.

18.10 Application of insurance proceeds

The proceeds from all insurance claims, except for life and injury, shall be applied for any necessary repair, reconstruction, reinstatement, replacement, improvement, delivery or installation of the Project and the provisions of this Agreement in respect of construction of Works shall apply *mutatis mutandis* to the Works undertaken out of the proceeds of insurance.

18.11 Compliance with policy conditions

The Contractor hereby expressly agrees to fully indemnify the Authority from and against all losses and claims arising from the Contractor’s failure to comply with conditions imposed by the insurance policies effected in accordance with this Agreement.

Part V

Force Majeure and Termination

ARTICLE 19

FORCE MAJEURE**19.1 Force Majeure**

As used in this Agreement, the expression “**Force Majeure**” or “**Force Majeure Event**” shall mean occurrence in India of any or all of Non-Political Event, Indirect Political Event and Political Event, as defined in Clauses 19.2, 19.3 and 19.4 respectively, if it affects the performance by the Party claiming the benefit of Force Majeure (the “**Affected Party**”) of its obligations under this Agreement and which act or event (a) is beyond the reasonable control of the Affected Party, and the Affected Party could not have prevented or overcome by exercise of due diligence and following Good Industry Practice, and (c) has Material Adverse Effect on the Affected Party.

19.2 Non-Political Event

A Non-Political Event shall mean one or more of the following acts or events:

- act of God, epidemic, extremely adverse weather conditions, lightning, earthquake, landslide, cyclone, flood, volcanic eruption, chemical or radioactive contamination or ionising radiation, fire or explosion (to the extent of contamination or radiation or fire or explosion originating from a source external to the Site);
- strikes or boycotts (other than those involving the Contractor, Sub-contractors or their respective employees/representatives, or attributable to any act or omission of any of them) interrupting supplies and services to the Project for a continuous period of 24 (twenty-four) hours and an aggregate period exceeding 10 (ten) days in an Accounting Year, and not being an Indirect Political Event set forth in Clause 19.3;
- any failure or delay of a Sub-contractor but only to the extent caused by another Non-Political Event;
- any judgement or order of any court of competent jurisdiction or statutory authority made against the Contractor in any proceedings for reasons other than (i) failure of the Contractor to comply with any Applicable Law or Applicable Permit, or (ii) on account of breach of any Applicable Law or Applicable Permit or of any contract, or (iii) enforcement of this Agreement, or (iv) exercise of any of its rights under this Agreement by the Authority; or (v) breach of its obligations by the Contractor under its sub-contracts;

- the discovery of geological conditions, toxic contamination or archaeological remains on the Site that could not reasonably have been expected to be discovered through a site inspection; or
- any event or circumstances of a nature analogous to any of the foregoing.

19.3 Indirect Political Event

An Indirect Political Event shall mean one or more of the following acts or events:

- C. an act of war (whether declared or undeclared), invasion, armed conflict or act of foreign enemy, blockade, embargo, riot, insurrection, terrorist or military action, civil commotion or politically motivated sabotage;
- D. industry-wide or State-wide strikes or industrial action for a continuous period of 24 (twenty-four) hours and exceeding an aggregate period of 10 (ten) days in an Accounting Year;
- E. any civil commotion, boycott or political agitation which prevents construction of the Project by the Contractor for an aggregate period exceeding 10 (ten) days in an Accounting Year;
- F. failure of the Authority to permit the Contractor to continue with its Construction Works, with or without modifications, in the event of stoppage of such work after discovery of any geological or archaeological finds;
- G. any failure or delay of a Sub-contractor to the extent caused by any Indirect Political Event;
- H. any Indirect Political Event that causes a Non-Political Event; or
- I. any event or circumstances of a nature analogous to any of the foregoing.

19.4 Political Event

A Political Event shall mean one or more of the following acts or events by or on account of any Government Instrumentality:

- d) Change in Law, only if consequences thereof cannot be dealt with under and in accordance with the provisions of Clause 17.13;
- e) compulsory acquisition in national interest or expropriation of any Project Assets or rights of the Contractor or of the Sub-contractors;

- f) unlawful or unauthorized or without jurisdiction revocation of, or refusal to renew or grant without valid cause, any clearance, license, permit, authorization, no objection certificate, consent, approval or exemption required by the Contractor or any of the Sub-contractors to perform their respective obligations under this Agreement; provided that such delay, modification, denial, refusal or revocation did not result from the Contractor’s or any Sub-contractor’s inability or failure to comply with any condition relating to grant, maintenance or renewal of such clearance, license, authorization, no objection certificate, exemption, consent, approval or permit;
- g) any failure or delay of a Sub-contractor but only to the extent caused by another Political Event; or
- h) any event or circumstances of a nature analogous to any of the foregoing.

19.5 Duty to report Force Majeure Event

19.5.1 Upon occurrence of a Force Majeure Event, the Affected Party shall by notice report such occurrence to the other Party forthwith. Any notice pursuant hereto shall include full particulars of:

- i) the nature and extent of each Force Majeure Event which is the subject of any claim for relief under this Article 19 with evidence in support thereof;
- j) the estimated duration and the effect or probable effect which such Force Majeure Event is having or will have on the Affected Party’s performance of its obligations under this Agreement;
- k) the measures which the Affected Party is taking or proposes to take for alleviating the impact of such Force Majeure Event; and
- l) any other information relevant to the Affected Party’s claim.

19.5.2 The Affected Party shall not be entitled to any relief for or in respect of a Force Majeure Event unless it shall have notified the other Party of the occurrence of the Force Majeure Event as soon as reasonably practicable, and in any event no later than 10 (ten) days after the Affected Party knew, or ought reasonably to have known, of its occurrence, and shall have given particulars of the probable material effect that the Force Majeure Event is likely to have on the performance of its obligations under this Agreement.

19.5.3 For so long as the Affected Party continues to claim to be affected by such Force Majeure Event, it shall provide the other Party with regular (and not less than weekly) reports containing information as required by Clause 19.5.1, and such other information as the other Party may reasonably request the Affected Party to provide.

19.6 Effect of Force Majeure Event on the Agreement

19.6.1 Upon the occurrence of any Force Majeure

- a) prior to the Appointed Date, both Parties shall bear their respective Force Majeure costs.
- b) after the Appointed Date, the costs incurred and attributable to such event and directly relating to this Agreement (the “**Force Majeure costs**”) shall be allocated and paid as follows:
- c) upon occurrence of a Non-Political Event, the Parties shall bear their respective Force Majeure costs and neither Party shall be required to pay to the other Party any costs thereof;
- d) upon occurrence of an Indirect Political Event, all Force Majeure costs attributable to such Indirect Political Event, and not exceeding the Insurance Cover for such Indirect Political Event, shall be borne by the Contractor, and to the extent Force Majeure costs exceed such Insurance Cover, one half of such excess amount shall be reimbursed by the Authority to the Contractor for the Force Majeure events; and
- e) Upon occurrence of a Political Event, all Force Majeure costs attributable to such Political Event shall be reimbursed by the Authority to the Contractor.

For the avoidance of doubt, Force Majeure costs may include costs directly attributable to the Force Majeure Event, but shall not include debt repayment obligations, if any, of the Contractor.

19.6.2 Save and except as expressly provided in this Article 19, neither Party shall be liable in any manner whatsoever to the other Party in respect of any loss, damage, cost, expense, claims, demands and proceedings relating to or arising out of occurrence or existence of any Force Majeure Event or exercise of any right pursuant hereto.

19.6.3 Upon the occurrence of any Force Majeure Event during the Construction Period, the Project Completion Schedule for and in respect of the affected Works shall be extended on a day for day basis for such period as performance of the Contractor’s obligations is affected on account of the Force Majeure Event or its subsisting effects, as may be determined by the Authority’s Engineer.

19.6.4 Force Majeure costs for any event which results in any offsetting compensation being payable to the Contractor by or on behalf of its Sub-contractors shall be reduced by such amounts that are payable to the Contractor by its Sub-contractors.

19.7 Termination Notice for Force Majeure Event

If a Force Majeure Event subsists for a period of 60 (sixty) days or more within a continuous period of 120 (one hundred and twenty) days, either Party may in its discretion terminate this Agreement by issuing a Termination Notice to the other Party without being liable in any manner whatsoever, save as provided in this Article 19, and upon issue of such Termination Notice, this Agreement shall, notwithstanding anything to the contrary contained herein, stand terminated forthwith; provided that before issuing such Termination Notice, the Party intending to issue the Termination Notice shall inform the other Party of such intention and grant 15 (fifteen) days time to make a representation, and may after the expiry of such 15 (fifteen) days period, whether or not it is in receipt of such representation, in its sole discretion issue the Termination Notice.

19.8 Termination Payment for Force Majeure Event

19.8.1 In the event of this Agreement being terminated on account of a Non-Political Event, the Termination Payment shall be an amount equal to the sum payable under Clause 21.5.

19.8.2 If Termination is on account of an Indirect Political Event, the Termination Payment shall include:

- any sums due and payable under Clause 21.5; and
- the reasonable cost, as determined by the Authority’s Engineer, of the

Plant and Materials procured by the Contractor and transferred to the Authority for use in Construction, only if such Plant and Materials are in conformity with the Specifications and Standards;

19.8.3 If Termination is on account of a Political Event, the Authority shall make a Termination Payment to the Contractor in an amount that would be payable under Clause 21.6.2 as if it were an Authority Default.

19.9 Dispute resolution

In the event that the Parties are unable to agree in good faith about the occurrence or existence of a Force Majeure Event, such Dispute shall be finally settled in accordance with the Dispute Resolution Procedure; provided that the burden of proof as to the occurrence or existence of such Force Majeure Event shall be upon the Party claiming relief and/or excuse on account of such Force Majeure Event.

19.10 Excuse from performance of obligations

If the Affected Party is rendered wholly or partially unable to perform its obligations under this Agreement because of a Force Majeure Event, it shall be excused from performance of such of its obligations to the extent it is unable to perform on account of such Force Majeure Event; provided that:

- ii the suspension of performance shall be of no greater scope and of no longer duration than is reasonably required by the Force Majeure Event;
- iii the Affected Party shall make all reasonable efforts to mitigate or limit damage to the other Party arising out of or as a result of the existence or occurrence of such Force Majeure Event and to cure the same with due diligence; and
- iv when the Affected Party is able to resume performance of its obligations under this Agreement, it shall give to the other Party notice to that effect and shall promptly resume performance of its obligations hereunder.

ARTICLE 20

SUSPENSION OF CONTRACTOR’S RIGHTS**20.1 Suspension upon Contractor Default**

Upon occurrence of a Contractor Default, the Authority shall be entitled, without prejudice to its other rights and remedies under this Agreement including its rights of Termination hereunder, to (a) suspend carrying out of the Works or any part thereof, and (b) carry out such Works itself or authorize any other person to exercise or perform the same on its behalf during such suspension (the “**Suspension**”). Suspension hereunder shall be effective forthwith upon issue of notice by the Authority to the Contractor and may extend up to a period not exceeding 90 (ninety) days from the date of issue of such notice.

20.2 Authority to act on behalf of Contractor

During the period of Suspension hereunder, all rights and liabilities vested in the Contractor in accordance with the provisions of this Agreement shall continue to vest in the Contractor and all things done or actions taken, including expenditure incurred by the Authority for discharging the obligations of the Contractor under and in accordance with this Agreement shall be deemed to have been done or taken for and on behalf of the Contractor and the Contractor undertakes to indemnify the Authority for all costs incurred during such period. The Contractor hereby licenses and sub-licenses respectively, the Authority or any other person authorized by it under Clause 20.1 to use during Suspension, all Intellectual Property belonging to or licensed to the Contractor with respect to the Project and its design, engineering, construction, and which is used or created by the Contractor in performing its obligations under the Agreement.

20.3 Revocation of Suspension

20.3.1 In the event that the Authority shall have rectified or removed the cause of Suspension within a period not exceeding 60 (sixty) days from the date of Suspension, it shall revoke the Suspension forthwith and restore all rights of the Contractor under this Agreement. For the avoidance of doubt, the Parties expressly agree that the Authority may, in its discretion, revoke the Suspension at any time, whether or not the cause of Suspension has been rectified or removed hereunder.

20.3.2 Upon the Contractor having cured the Contractor Default within a period not exceeding 60 (sixty) days from the date of Suspension, the Authority shall revoke the Suspension forthwith and restore all rights of the Contractor under this Agreement.

20.4 Termination

20.4.1 At any time during the period of Suspension under this Article 20, the Contractor may by notice require the Authority to revoke the Suspension and issue a Termination Notice. The Authority shall, within 15 (fifteen) days of receipt of such notice, terminate this Agreement under and in accordance with Article 21 as if it is a Contractor Default under Clause 21.1.

20.4.2 Notwithstanding anything to the contrary contained in this Agreement, in the event that Suspension is not revoked within 90 (ninety) days from the date of Suspension hereunder, the Agreement shall, upon expiry of the aforesaid period, be deemed to have been terminated by mutual agreement of the Parties and all the provisions of this Agreement shall apply, *mutatis mutandis*, to such Termination as if a Termination Notice had been issued by the Authority upon occurrence of a Contractor Default.

ARTICLE 21

TERMINATION**21.1 Termination for Contractor Default**

21.1.1 Save as otherwise provided in this Agreement, in the event that any of the defaults specified below shall have occurred, and the Contractor fails to cure the default within the Cure Period set forth below, or where no Cure Period is specified, then within a Cure Period of 60 (sixty) days, the Contractor shall be deemed to be in default of this Agreement (the “**Contractor Default**”), unless the default has occurred as a result of any breach of this Agreement by the Authority or due to Force Majeure. The defaults referred to herein shall include the following:

- a) The Contractor fails to provide, extend or replenish, as the case may be, the Performance Security in accordance with this Agreement;
- b) subsequent to the replenishment or furnishing of fresh Performance Security in accordance with Clause 7.3, the Contractor fails to cure, within a Cure Period of 30 (thirty) days, the Contractor Default for which the whole or part of the Performance Security was appropriated;
- c) the Contractor does not achieve the latest outstanding Project Milestone due in accordance with the provisions of Schedule-I, subject to any Time Extension, and continues to be in default for 45 (forty five) days;
- d) the Contractor abandons or manifests intention to abandon the construction of the Project without the prior written consent of the Authority;
- e) the Contractor fails to proceed with the Works in accordance with the provisions of Clause 10.1 or stops Works for 30 (thirty) days without reflecting the same in the current programme and such stoppage has not been authorised by the Authority’s Engineer;
- f) the Project Completion Date does not occur within the period specified in Schedule-I for the Scheduled Completion Date, or any extension thereof;
- g) failure to complete the Punch List items within the periods stipulated therefor in Clause 12.3;

- h) the Contractor fails to rectify any Defect, the non-rectification of which shall have a Material Adverse Effect on the Project, within the time specified in this Agreement or as directed by the Authority’s Engineer;
- i) the Contractor subcontracts the Works or any part thereof in violation of this Agreement or assigns any part of the Works without the prior approval of the Authority;
- j) the Contractor creates any Encumbrance in breach of this Agreement;
- k) an execution levied on any of the assets of the Contractor has caused a Material Adverse Effect;
- l) the Contractor is adjudged bankrupt or insolvent, or if a trustee or receiver is appointed for the Contractor or for the whole or material part of its assets that has a material bearing on the Project;
- m) the Contractor has been, or is in the process of being liquidated, dissolved, wound-up, amalgamated or reconstituted in a manner that would cause, in the reasonable opinion of the Authority, a Material Adverse Effect;
- n) a resolution for winding up of the Contractor is passed, or any petition for winding

up of the Contractor is admitted by a court of competent jurisdiction and a provisional liquidator or receiver is appointed and such order has not been set aside within 90 (ninety) days of the date thereof or the Contractor is ordered to be wound up by a court except for the purpose of amalgamation or reconstruction; provided that, as part of such amalgamation or reconstruction, the entire property, assets and undertaking of the Contractor are transferred to the amalgamated or reconstructed entity and that the amalgamated or reconstructed entity has unconditionally assumed the obligations of the Contractor under this Agreement; and provided that:

- o) the amalgamated or reconstructed entity has the capability and experience necessary for the performance of its obligations under this Agreement; and
- p) the amalgamated or reconstructed entity has the financial standing to perform its obligations under this Agreement and has a credit worthiness at least as good as that of the Contractor as

at the Appointed Date;

- q) any representation or warranty of the Contractor herein contained which is, as of the date hereof, found to be materially false or the Contractor is at any time hereafter found to be in breach thereof;
- r) the Contractor submits to the Authority any statement, notice or other document, in written or electronic form, which has a material effect on the Authority’s rights, obligations or interests and which is false in material particulars;
- s) the Contractor has failed to fulfil any obligation, for which failure Termination has been specified in this Agreement;
or
- t) the Contractor has failed to make any payment to the Authority within the period specified in this Agreement;
- u) the Concessionaire issues a Termination Notice in violation of this Agreement; or
- v) the Contractor commits a default in complying with any other provision of this Agreement if such a default causes a Material Adverse Effect on the Project or on the Authority.

21.1.2 Without prejudice to any other rights or remedies which the Authority may have under this Agreement, upon occurrence of a Contractor Default, the Authority shall be entitled to terminate this Agreement by issuing a Termination Notice to the Contractor; provided that before issuing the Termination Notice, the Authority shall by a notice inform the Contractor of its intention to issue such Termination Notice and grant 15 (fifteen) days to the Contractor to make a representation, and may after the expiry of such 15 (fifteen) days, whether or not it is in receipt of such representation, issue the Termination Notice.

21.1.3 After termination of this Agreement for Contractor Default, the Authority may complete the Works and/or procure its completion through any other entity. The Authority and such entity may, for this purpose, use any Materials, Plant and equipment, Contractor’s documents and other design documents made by or on behalf of the Contractor.

21.2 Termination for Authority Default

21.2.1 In the event that any of the defaults specified below shall have occurred, and the Authority fails to cure such default within a Cure Period of 90 (ninety) days or such longer period as has been expressly provided in this Agreement, the Authority shall be deemed to be in default of this Agreement (the “**Authority Default**”) unless the default has occurred as a result of any breach of this Agreement by the Contractor or due to Force Majeure. The defaults referred to herein shall include the following:

- a) The Authority commits a material default in complying with any of the provisions of this Agreement and such default has a Material Adverse Effect on the Contractor;
- b) the Authority has failed to make payment of any amount due and payable to the Contractor within the period specified in this Agreement;
- c) the Authority has failed to provide, within a period of 180 (one hundred and eighty) days from the Appointed Date, the environmental clearances and forest clearances required for construction of the Project;
- d) the Authority repudiates this Agreement or otherwise takes any action that amounts to or manifests an irrevocable intention not to be bound by this Agreement; or
- e) the Authority’s Engineer fails to issue the relevant Interim Payment Certificate within 60 (sixty) days after receiving a statement and supporting documents.

21.2.2 Without prejudice to any other right or remedy which the Contractor may have under this Agreement, upon occurrence of an Authority Default, the Contractor shall be entitled to terminate this Agreement by issuing a Termination Notice to the Authority; provided that before issuing the Termination Notice, the Contractor shall by a notice inform the Authority of its intention to issue the Termination Notice and grant 15 (fifteen) days to the Authority to make a representation, and may after the expiry of such 15 (fifteen) days, whether or not it is in receipt of such representation, issue the Termination Notice.

21.3 Termination for Authority’s convenience

Notwithstanding anything hereinabove, the Authority may terminate this Agreement for its own convenience. The termination shall take effect 30 (thirty) days from the date of notice hereunder and shall be deemed to be termination on account of Authority Default.

21.4 Requirements after Termination

Upon Termination of this Agreement in accordance with the provisions of this

Article 21, the Contractor shall comply with and conform to the following:

- a) deliver to the Authority all Plant and Materials which shall have become the property of the Authority under this Article 21;
- b) deliver all relevant records, reports, Intellectual Property and other licences pertaining to the Works, other design documents and in case of Termination occurring after the Provisional Certificate has been issued, the “**as built**” Drawings for the Works;
- c) transfer and/or deliver all Applicable Permits to the Authority to the extent permissible under Applicable Laws; and
- d) vacate the Site within 15 (fifteen) days.

21.5 Valuation of Unpaid Works

21.5.1 Within a period of 45 (forty-five) days after Termination under Clause 21.1, 21.2 or 21.3, as the case may be, has taken effect, the Authority’s Engineer shall proceed in accordance with Clause 16.5 to determine as follows the valuation of unpaid Works (the “**Valuation of Unpaid Works**”):

- i. value of the completed stage of the Works, less payments already made; and
- ii. reasonable value of the partially completed stages of works as on the date of Termination, only if such works conform with the Specifications and Standards.

and shall adjust from the sum thereof (i) any other amounts payable or recoverable, as the case may be, in accordance with the provisions of this Agreement; and (ii) all taxes due to be deducted at source.

21.5.2 The Valuation of Unpaid Works shall be communicated to the Authority, with a copy to the Contractor, within a period of 45 (forty five) days from the date of Termination.

21.6 Termination Payment

21.6.1 Upon Termination on account of Contractor Default under Clause 21.1, the

Authority shall:

- iii. Encash and appropriate the Performance Security or Retention Money, whichever is more, and in the event the Contractor has failed to replenish or extend the Performance Security, claim the amount stipulated in Clause 7.1.1, as agreed pre-determined Damages, if any;
- iv. encash and appropriate the bank guarantee, if any, to the extent of the outstanding Advance Payment and interest thereon; and
- v. pay to the Contractor, by way of Termination Payment, an amount equivalent to the Valuation of Unpaid Works after adjusting any other

sums payable or recoverable, as the case may be, in accordance with the provisions of this Agreement, and shall adjust from the sum thereof (i) any other amounts payable or recoverable, as the case may be, in accordance with the provisions of this Agreement, and (ii) all taxes due to be deducted at source.

21.6.2 Upon Termination on account of an Authority Default under Clause 21.2 or for Authority’s convenience under Clause 21.3, the Authority shall:

- a) return the Performance Security and Retention Money forthwith;
- b) Encash and appropriate the bank guarantee, if any, to the extent of the outstanding Advance Payment, including interest thereon; and
- c) pay to the Contractor, by way of Termination Payment, an amount equal to:
- d) Valuation of Unpaid Works;
- e) the reasonable cost, as determined by the Authority’s Engineer, of the Plant and Materials procured by the Contractor and transferred to the Authority for its use, only if such Plant and Materials are in conformity with the Specifications and Standards;
- f) the reasonable cost of temporary works, as determined by the Authority’s Engineer; and
- g) 10% (ten percent) of the cost of the Works that are not commenced or not completed, and shall adjust from the sum thereof (i) any other amounts payable or recoverable, as the case may be, in accordance with the provisions of this Agreement, and (ii) all taxes due to be deducted at source.

21.6.3 Termination Payment shall become due and payable to the Contractor within 30 (thirty) days of a demand being made by the Contractor to the Authority with the necessary particulars, after the Valuation of Unpaid Works has been communicated by the Authority’s Engineer. For the avoidance of doubt, it is expressly agreed that Termination Payment shall constitute full discharge by the Authority of its payment obligations in respect thereof hereunder.

21.6.4 The Contractor expressly agrees that Termination Payment under this Article 21 shall constitute a full and final settlement of all claims of the Contractor on account of Termination of this Agreement and that it shall not have any further right or claim under any law, treaty, convention, contract or otherwise.

21.7 Other rights and obligations of the Parties

Upon Termination for any reason whatsoever

- a) the property and ownership in all Materials, Plant and Works and the Project shall, as between the Contractor and the Authority, vest in the Authority in whole, free from any and all Encumbrances; provided that the foregoing shall be without prejudice to Clause 21.6;
- b) the risk of loss or damage to any Materials, Plant or Works and the care and custody thereof shall pass from the Contractor to the Authority; and
- c) the Authority shall be entitled to restrain the Contractor and any person claiming through or under the Agreement from entering upon the Site or any part of the Project except for taking possession of materials, stores, implements, construction plants and equipment of the Contractor, which have not been vested in the Authority in accordance with the provisions of this Agreement.

21.8 Survival of rights

Notwithstanding anything to the contrary contained in this Agreement any Termination pursuant to the provisions of this Agreement shall be without prejudice to the accrued rights of either Party including its right to claim and recover money damages, insurance proceeds, security deposits, and other rights and remedies, which it may have in law or Agreement. All rights and obligations of either Party under this Agreement, including Termination Payments, shall survive the Termination to the extent such survival is necessary for giving effect to such rights and obligations.

Part VI

Other Provisions

ARTICLE 22

ASSIGNMENT AND CHARGES

22.1 Restrictions on assignment and charges

This Agreement shall not be assigned by the Contractor to any person, save and except with the prior consent in writing of the Authority, which consent the Authority shall be entitled to decline without assigning any reason.

22.2 Hypothecation of Materials or Plant

Notwithstanding the provisions of Clause 22.1, the Contractor may pledge or hypothecate to its lenders, any Materials or Plant prior to their incorporation in the Works. Further, the Contractor may, by written notice to the Authority, assign its right to receive payments under this Agreement either absolutely or by way of charge, to any person providing financing to the Contractor in connection with the performance of the Contractor’s obligations under this Agreement. The Contractor acknowledges that any such assignment by the Contractor shall not relieve the Contractor from any obligations, duty or responsibility under this Agreement. For the avoidance of doubt, all Materials and Plants shall, upon their incorporation into Works, be free from any and all Encumbrances without the Authority being required to make any payment to any person on account of any costs, compensation, expenses and charges for such Materials, Plants and Works.

ARTICLE 23

LIABILITY AND INDEMNITY**23.1 General indemnity**

The Contractor shall indemnify, defend, save and hold harmless the Authority and its officers, servants, agents, Government Instrumentalities and Government owned and/or controlled entities/enterprises, (the “**Authority Indemnified Persons**”) against any and all suits, proceedings, actions, demands and third party claims for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by the Contractor of any of its obligations under this Agreement or from any negligence under the Agreement, including any errors or deficiencies in the design documents, or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of this Agreement on the part of the Authority Indemnified Persons.

23.2 Indemnity by the Contractor

23.2.1 Without limiting the generality of Clause 23.1, the Contractor shall fully indemnify, hold harmless and defend the Authority and the Authority Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:

- a) failure of the Contractor to comply with Applicable Laws and Applicable Permits;
- b) payment of taxes required to be made by the Contractor in respect of the income or other taxes of the Sub-contractors, suppliers and representatives; or
- c) non-payment of amounts due as a result of Materials or services furnished to the Contractor or any of its Sub-contractors which are payable by the Contractor or any of its Sub-contractors.

23.2.2 Without limiting the generality of the provisions of this Article 23, the Contractor shall fully indemnify, hold harmless and defend the Authority Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which the Authority Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of claims of infringement of any domestic or foreign patent rights, copyrights or other Intellectual Property, proprietary or confidentiality rights with respect to any materials, information, design or process used by the Contractor or by the Sub-contractors in performing the Contractor’s obligations or in any way incorporated

in or related to the Project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, the Contractor shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, the Contractor shall promptly make every reasonable effort to secure for the Authority a license, at no cost to the Authority, authorizing continued use of the infringing work. If the Contractor is unable to secure such license within a reasonable time, the Contractor shall, at its own expense, and without impairing the Specifications and Standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

23.3 Notice and contest of claims

In the event that either Party receives a claim or demand from a third party in respect of which it is entitled to the benefit of an indemnity under this Agreement (the “**Indemnified Party**”) it shall notify the other Party (the “**Indemnifying Party**”) within 15 (fifteen) days of receipt of the claim or demand and shall not settle or pay the claim without the prior approval of the Indemnifying Party, which approval shall not be unreasonably withheld or delayed. In the event that the Indemnifying Party wishes to contest or dispute the claim or demand, it may conduct the proceedings in the name of the Indemnified Party, subject to the Indemnified Party being secured against any costs involved, to its reasonable satisfaction.

23.4 Defence of claims

23.4.1 The Indemnified Party shall have the right, but not the obligation, to contest, defend and litigate any claim, action, suit or proceeding by any third party alleged or asserted against such Party in respect of, resulting from, related to or arising out of any matter for which it is entitled to be indemnified hereunder, and reasonable costs and expenses thereof shall be indemnified by the Indemnifying Party. If the Indemnifying Party acknowledges in writing its obligation to indemnify the Indemnified Party in respect of loss to the full extent provided by this Agreement, the Indemnifying Party shall be entitled, at its option, to assume and control the defence of such claim, action, suit or proceeding, liabilities, payments and obligations at its expense and through the counsel of its choice; provided it gives prompt notice of its intention to do so to the Indemnified Party and reimburses the Indemnified Party for the reasonable cost and expenses incurred by the Indemnified Party prior to the assumption by the Indemnifying Party of such defence. The Indemnifying Party shall not be entitled to settle or compromise any claim, demand,

action, suit or proceeding without the prior written consent of the Indemnified Party, unless the Indemnifying Party provides such security to the Indemnified Party as shall be reasonably required by the Indemnified Party to secure the loss to be indemnified hereunder to the extent so compromised or settled.

23.4.2 If the Indemnifying Party has exercised its rights under Clause 23.3, the Indemnified Party shall not be entitled to settle or compromise any claim, action, suit or proceeding without the prior written consent of the Indemnifying Party (which consent shall not be unreasonably withheld or delayed).

23.4.3 If the Indemnifying Party exercises its rights under Clause 23.3, the Indemnified Party shall nevertheless have the right to employ its own counsel, and such counsel may participate in such action, but the fees and expenses of such counsel shall be at the expense of the Indemnified Party, when and as incurred, unless:

- d) the employment of counsel by such party has been authorised in writing by the Indemnifying Party;
- e) the Indemnified Party shall have reasonably concluded that there may be a conflict of interest between the Indemnifying Party and the Indemnified Party in the conduct of the defence of such action;
- f) the Indemnifying Party shall not, in fact, have employed independent counsel reasonably satisfactory to the Indemnified Party, to assume the defence of such action and shall have been so notified by the Indemnified Party; or
- g) the Indemnified Party shall have reasonably concluded and specifically notified the Indemnifying Party either:
 - 1) that there may be specific defences available to it which are different from or additional to those available to the Indemnifying Party; or
 - 2) that such claim, action, suit or proceeding involves or could have a material adverse effect upon it beyond the scope of this Agreement:

Provided that if Sub-clauses (b), (c) or (d) of this Clause 23.4.3 shall be applicable, the counsel for the Indemnified Party shall have the right to direct the defence of such claim, demand, action, suit or proceeding on behalf of the Indemnified Party,

and the reasonable fees and disbursements of such counsel shall constitute legal or other expenses hereunder.

23.5 No consequential claims

Notwithstanding anything to the contrary contained in this Article 23, the indemnities herein provided shall not include any claim or recovery in respect of any cost, expense, loss or damage of an indirect, incidental or consequential nature, including loss of profit, except as expressly provided in this Agreement.

23.6 Survival on Termination

The provisions of this Article 23 shall survive Termination.

ARTICLE 24

DISPUTE RESOLUTION

24.1 Dispute resolution

24.1.1 Any dispute, difference or controversy of whatever nature howsoever arising under or out of or in relation to this Agreement (including its interpretation) between the Parties, and so notified in writing by either Party to the other Party (the “**Dispute**”) shall, in the first instance, be attempted to be resolved amicably in accordance with the conciliation procedure set forth in Clause 24.2.

24.1.2 The Parties agree to use their best efforts for resolving all Disputes arising under or in respect of this Agreement promptly, equitably and in good faith, and further agree to provide each other with reasonable access during normal business hours to all non-privileged records, information and data pertaining to any Dispute.

24.2 Conciliation

In the event of any Dispute between the Parties, either Party may call upon an officer of the Authority, not below the rank of Secretary to the Government or Chief Engineer, as the case may be, or such other person as the Parties may mutually agree upon (the “**Conciliator**”) to conciliate and assist the Parties in arriving at an amicable settlement thereof. Failing conciliation by the Conciliator or without the intervention of the Conciliator, either Party may require such Dispute to be referred to the Secretary or Chief Engineer of the Authority and the Chairman of the Board of Directors of the Contractor for amicable settlement, and upon such reference, the said persons shall meet no later than 7 (seven) business days from the date of reference to discuss and attempt to amicably resolve the Dispute. If such meeting does not take place within the 7 (seven) business day period or the Dispute is not amicably settled within 15 (fifteen) business days of the meeting or the Dispute is not resolved as evidenced by the signing of written terms of settlement within 30 (thirty) business days of the notice in writing referred to in Clause 24.1.1 or such longer period as may be mutually agreed by the Parties, either Party may refer the Dispute to arbitration in accordance with the provisions of Clause 24.3.

24.3 Arbitration

24.3.1 Any Dispute which is not resolved amicably by conciliation, as provided in Clause 24.2, shall be finally decided by reference to arbitration by an arbitral tribunal constituted in accordance with Clause 24.3.2. Such arbitration shall be held in accordance with the Rules of Arbitration of the International Centre for Alternative Dispute Resolution, New Delhi or Construction Industry Arbitration Council (CIAC) ,New Delhi (the “**Rules**”), or such other rules as may be mutually agreed by the Parties, and shall be subject to the provisions of the Arbitration and

Conciliation Act, 1996. The place of such arbitration shall be the capital of the State, and the language of arbitration proceedings shall be English.

The Arbitration shall be in Institutional mode & would not be adhoc, in any case, and the online mode of dispute resolution may also be resorted to as per the latest notification of Ministry of Law & Justice, Government of India.

24.3.2 There shall be an arbitral tribunal comprising three arbitrators, of whom each Party shall select one, and the third arbitrator shall be appointed by the two arbitrators so selected and in the event of disagreement between the two arbitrators, the appointment shall be made in accordance with the Rules.

24.3.3 Wherever possible or required, On-line dispute resolution mechanism as prescribed

by Ministry of Law vide their notification [http://doj.gov.in/sites/default/files/List%20of%20firm%20with%20profile-](http://doj.gov.in/sites/default/files/List%20of%20firm%20with%20profile-17_1.pdf)

[17_1.pdf](http://doj.gov.in/sites/default/files/List%20of%20firm%20with%20profile-17_1.pdf), with subsequent amendments if any, is to be resorted to, in place of the traditional in-situ arbitration procedures. The decision on which system of procedures is to be followed (viz. traditional or on-line) would rest with the Contracting Parties at the time of signing the contract, who may if they so decide, permit the decision to be made by Third Arbitrator (appointed by the two nominated arbitrators).

24.3.4 The arbitral tribunal shall make a reasoned award (the “**Award**”). Any Award made in any arbitration held pursuant to this Article 24 shall be final and binding on the Parties as from the date it is made, and the Contractor and the Authority agree and undertake to carry out such Award without delay.

24.3.5 The Contractor and the Authority agree that an Award may be enforced against the Contractor and/or the Authority, as the case may be, and their respective assets wherever situated.

24.3.6 This Agreement and the rights and obligations of the Parties shall remain in full force and effect, pending the Award in any arbitration proceedings hereunder.

24.3.7 In the event the Party against whom the Award has been granted challenges the Award for any reason in a court of law, it shall make an interim payment to the other Party for an amount equal to 75% (seventy five per cent) of the Award, pending final settlement of the Dispute. The aforesaid amount shall be paid forthwith upon furnishing an irrevocable Bank Guarantee for a sum equal to the aforesaid amount. Upon final settlement of the Dispute, the aforesaid interim payment shall be adjusted and any balance amount due to be paid or returned, as the case may be, shall be paid or returned with interest calculated at the rate of 10% (ten per cent) per annum from the date of interim payment to the date of final settlement of such balance.

24.4 Adjudication by a tribunal

In the event of constitution of a statutory tribunal or other forum with powers to adjudicate upon disputes between the Contractor and the Authority, all Disputes arising after such constitution shall, instead of reference to arbitration under Clause 24.3, be adjudicated upon by such tribunal or other forum in accordance with Applicable Laws and all references to Dispute Resolution Procedure shall be construed accordingly.

ARTICLE 25

MISCELLANEOUS

25.1 Governing law and jurisdiction

This Agreement shall be construed and interpreted in accordance with and governed by the laws of India, and the courts in the State shall have exclusive jurisdiction over matters arising out of or relating to this Agreement.

25.2 Waiver of immunity

Each Party unconditionally and irrevocably:

1. agrees that the execution, delivery and performance by it of this Agreement constitute commercial acts done and performed for commercial purpose;
2. agrees that, should any proceedings be brought against it or its assets, property or revenues in any jurisdiction in relation to this Agreement or any transaction contemplated by this Agreement, no immunity (whether by reason of sovereignty or otherwise) from such proceedings shall be claimed by or on behalf of the Party with respect to its assets;
3. waives any right of immunity which it or its assets, property or revenues now has, may acquire in the future or which may be attributed to it in any jurisdiction; and
4. consents generally in respect of the enforcement of any judgement or award against it in any such proceedings to the giving of any relief or the issue of any process in any jurisdiction in connection with such proceedings (including the making, enforcement or execution against it or in respect of any assets, property or revenues whatsoever irrespective of their use or intended use of any order or judgement that may be made or given in connection therewith).

25.3 Deleted.

25.4 Waiver

25.4.1 Waiver, including partial or conditional waiver, by either Party of any default by the other Party in the observance and performance of any provision of or obligations under this Agreement:

- a) shall not operate or be construed as a waiver of any other or subsequent default hereof or of other provisions of or obligations under this Agreement;
- b) shall not be effective unless it is in writing and executed by a duly authorized representative of the Party; and
- c) shall not affect the validity or enforceability of this Agreement in any manner.

25.4.2 Neither the failure by either Party to insist on any occasion upon the performance of the terms, conditions and provisions of this Agreement or any obligation thereunder nor time or other indulgence granted by a Party to the other Party shall be treated or deemed as waiver of such breach or acceptance of any variation or the relinquishment of any such right hereunder.

25.5 Liability for review of Documents and Drawings

Except to the extent expressly provided in this Agreement:

- a) no review, comment or approval by the Authority or the Authority’s Engineer of any Document or Drawing submitted by the Contractor nor any observation or inspection of the construction of the Project nor the failure to review, approve, comment, observe or inspect hereunder shall relieve or absolve the Contractor from its obligations, duties and liabilities under this Agreement, Applicable Laws and Applicable Permits; and
- b) the Authority shall not be liable to the Contractor by reason of any review, comment, approval, observation or inspection referred to in

Sub-clause (a) above.

25.6 Exclusion of implied warranties etc.

This Agreement expressly excludes any warranty, condition or other undertaking implied at law or by custom or otherwise arising out of any other agreement between the Parties or any representation by either Party not contained in a binding legal agreement executed by both Parties.

25.7 Survival

25.7.1 Termination shall:

- a) not relieve the Contractor or the Authority, as the case may be, of any obligations hereunder which expressly or by implication survive Termination hereof; and
- b) except as otherwise provided in any provision of this Agreement expressly limiting the liability of either Party, not relieve either Party of any obligations or liabilities for loss or damage to the other Party arising out of, or caused by, acts or omissions of such Party prior to the effectiveness of such Termination or arising out of such Termination.

25.7.2 All obligations surviving Termination shall only survive for a period of 3 (three) years following the date of such Termination.

25.8 Entire Agreement

This Agreement and the Schedules together constitute a complete and exclusive statement of the terms of the agreement between the Parties on the subject hereof, and no amendment or modification hereto shall be valid and effective unless such modification or amendment is agreed to in writing by the Parties and duly executed by persons especially empowered in this behalf by the respective Parties. All prior

written or oral understandings, offers or other communications of every kind pertaining to this Agreement are abrogated and withdrawn. For the avoidance of doubt, the Parties hereto agree that any obligations of the Contractor arising from the Request for Qualification or Request for Proposals and bid submissions, as the case may be, shall be deemed to form part of this Agreement and treated as such.

25.9 Severability

If for any reason whatsoever, any provision of this Agreement is or becomes invalid, illegal or unenforceable or is declared by any court of competent jurisdiction or any other instrumentality to be invalid, illegal or unenforceable, the validity, legality or enforceability of the remaining provisions shall not be affected in any manner, and the Parties will negotiate in good faith with a view to agreeing to one or more provisions which may be substituted for such invalid, unenforceable or illegal provisions, as nearly as is practicable to such invalid, illegal or unenforceable provision. Failure to agree upon any such provisions shall not be subject to the Dispute Resolution Procedure set forth under this Agreement or otherwise.

25.10 No partnership

This Agreement shall not be interpreted or construed to create an association, joint venture or partnership between the Parties, or to impose any partnership obligation or liability upon either Party, and neither Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other Party.

25.11 Third parties

This Agreement is intended solely for the benefit of the Parties, and their respective successors and permitted assigns, and nothing in this Agreement shall be construed to create any duty to, standard of care with reference to, or any liability to, any person not a Party to this Agreement.

25.12 Successors and assigns

This Agreement shall be binding upon, and inure to the benefit of the Parties and their respective successors and permitted assigns.

25.13 Notices

Any notice or other communication to be given by any Party to the other Party under or in connection with the matters contemplated by this Agreement shall be in writing and shall:

- a) in the case of the Contractor, be given by facsimile or e-mail and by letter delivered by hand to the address given and marked for attention of the

person set out below or to such other person as the Contractor may from time to time designate by notice to the Authority; provided that notices or other communications to be given to an address outside the city specified in Sub-clause (b) below may, if they are subsequently confirmed by sending a copy thereof by registered acknowledgement due, air mail or by courier, be sent by facsimile or e-mail to the person as the Contractor may from time to time designate by notice to the Authority;

Attention:

{Designation:

Address:

Fax No:

Email: }

b) in the case of the Authority, be given by facsimile or e-mail and by letter delivered by hand and be addressed to the person named below with a copy delivered to the Authority Representative or such other person as the Authority may from time to time designate by notice to the Contractor; provided that if the Contractor does not have an office in the same city as the Authority, it may send such notice by facsimile or e-mail and by registered acknowledgement due, air mail or by courier;

{Designation

: Address:

Fax No:

Email: }; and

c) any notice or communication by a Party to the other Party, given in accordance herewith, shall be deemed to have been delivered when in the normal course of post it ought to have been delivered and in all other cases, it shall be deemed to have been delivered on the actual date and time of delivery; provided that in the case of facsimile or e-mail, it shall be deemed to have been delivered on the working day following the date of its delivery.

25.14 Language

All notices required to be given by one Party to the other Party and all other communications, Documentation and proceedings which are in any way relevant to this Agreement shall be in writing and in English language.

25.15 Counterparts

This Agreement may be executed in two counterparts, each of which, when executed and delivered, shall constitute an original of this Agreement.

25.16 Confidentiality

The Parties shall treat the details of this Agreement as private and confidential, except to the extent necessary to carry out obligations under it or to comply with Applicable Laws. The Contractor shall not publish, permit to be published, or disclose any particulars of the Works in any trade or technical paper or elsewhere without the previous consent of the Authority.

25.17 Copyright and Intellectual Property rights

25.17.1 As between the Parties, the Contractor shall retain the copyright and other Intellectual Property rights in the Contractor’s Documents and other design documents made by (or on behalf of) the Contractor. The Contractor shall be deemed (by signing this Agreement) to give to the Authority a non-terminable transferable non-exclusive royalty-free license to copy, use and communicate the Contractor’s Documents, including making and using modifications of them. This license shall:

- (a) apply throughout the actual or intended working life (whichever is longer) of the relevant parts of the Works,
- (b) entitle any person in proper possession of the relevant part of the Works to copy, use and communicate the Contractor’s Documents for the purposes of completing, operating, maintaining, altering, adjusting, repairing and demolishing the Works, and
- (c) in the case of Contractor’s Documents which are in the form of computer programs and other software, permit their use on any computer on the Site and other places as envisaged by this Agreement, including replacements of any computers supplied by the Contractor:

25.17.2 The Contractor’s Documents and other design documents made by (or on behalf of) the Contractor shall not, without the Contractor’s consent, be used, copied or communicated to a third party by (or on behalf of) the Authority for purposes other than those permitted under this Clause 25.17.

25.17.3 As between the Parties, the Authority shall retain the copyright and other Intellectual Property rights in this Agreement and other documents made by (or on behalf of) the Authority. The Contractor may, at its cost, copy, use, and obtain communication of these documents for the purposes of this Agreement. They shall not, without the Authority’s consent, be copied, used or communicated to a third party by the Contractor, except as necessary for the purposes of the contract.

25.18 Limitation of Liability

25.18.1 Neither Party shall be liable to the other Party for loss of use of any Works, loss of profit, loss of any contract or for any indirect or consequential loss or damage which may be suffered by the other Party in connection with this Agreement.

25.18.2 The total liability of one Party to the other Party under and in accordance with the provisions of this Agreement, save and except as provided in Articles 21 and 23, shall not exceed the Contract Price. For the avoidance of doubt, this Clause shall not limit the liability in any case of fraud, deliberate default or reckless misconduct by the defaulting Party.

ARTICLE 26

DEFINITIONS

26.1 Definitions

In this Agreement, the following words and expressions shall, unless repugnant to the context or meaning thereof, have the meaning hereinafter respectively assigned to them:

“**Accounting Year**” means the financial year commencing from the first day of April of any calendar year and ending on the thirty-first day of March of the next calendar year;

“**Advance Payment**” shall have the meaning as set forth in Clause 17.2.1;

“**Affected Party**” shall have the meaning as set forth in Clause 19.1;

“**Affiliate**” means, in relation to either Party {and/or Members}, a person who controls, is controlled by, or is under the common control with such Party {or Member} (as used in this definition, the expression “control” means, with respect to a person which is a company or corporation, the ownership, directly or indirectly, of more than 50% (fifty per cent) of the voting shares of such person, and with respect to a person which is not a company or corporation, the power to direct the management and policies of such person, whether by operation of law or by contract or otherwise);

“**Agreement**” means this Agreement, its Recitals, the Schedules hereto and any amendments thereto made in accordance with the provisions contained in this Agreement;

“**Applicable Laws**” means all laws, brought into force and effect by GOI or the State Government(s) including rules, regulations and notifications made thereunder, and judgements, decrees, injunctions, writs and orders of any court of record, applicable to this Agreement and the exercise, performance and discharge of the respective rights and obligations of the Parties hereunder, as may be in force and effect during the subsistence of this Agreement;

“**Applicable Permits**” means all clearances, licences, permits, authorisations, no objection certificates, consents, approvals and exemptions required to be obtained or maintained under Applicable Laws in connection with the construction of the Project during the subsistence of this Agreement;

“**Appointed Date**” means date of this Agreement.

“**Arbitration Act**” means the Arbitration and Conciliation Act, 1996 and shall include modifications to or any re-enactment thereof, as in force from time to time;

“**Authority**” shall have the meaning attributed thereto in the array of Parties hereinabove as set forth in the Recitals;

“**Authority Default**” shall have the meaning as set forth in Clause 21.2.1;

“**Authority’s Engineer**” shall have the meaning as set forth in Clause 16.1.1;

“**Authority Representative**” means such person or persons as may be authorised in writing by the Authority to act on its behalf under this Agreement and shall include any person or persons having authority to exercise any rights or perform and fulfil any obligations of the Authority under this Agreement;

“**Bank**” means a bank incorporated in India and having a minimum net worth of Rs. 1,000 crore (Rupees one thousand crore) or any other bank acceptable to the Authority;

“**Bank Rate**” means the rate of interest specified by the Reserve Bank of India from time to time in pursuance of section 49 of the Reserve Bank of India Act, 1934 or any replacement of such Bank Rate for the time being in effect;

“**Base Date**” means the last date of that calendar month, which date precedes the Bid Due Date by at least 28 (twenty eight) days;

“**Bid**” means the documents in their entirety comprised in the bid submitted by the [selected bidder/Joint Venture] in response to the Request for Proposals in accordance with the provisions thereof and “**Bids**” shall mean the bids submitted by any and all pre-qualified bidders;

“**Bid Security**” means the bid security provided by the Contractor to the Authority in accordance with the Request for Proposals, and which is to remain in force until substituted by the Performance Security;

“**CPI (IW)**” means the Consumer Price Index for Industrial Workers as published by the Labour Bureau, Government of India and shall include any index which substitutes the CPI (IW), and any reference to CPI (IW) shall, unless the context otherwise requires, be construed as a reference to the CPI (IW) published for the period ending with the preceding month, save and except that for the purposes of annual revision of the Fixed Charge in accordance with the provisions of Clause 25.3, the revision due on April 1 of any year shall be computed with reference to CPI (IW) as on January 31 of that year;

“**Change in Law**” means the occurrence of any of the following after the

Base Date:

- i. the enactment of any new Indian law;
- ii. the repeal, modification or re-enactment of any existing Indian law;
- iii. the commencement of any Indian law which has not entered into effect until the Base Date;

- iv. a change in the interpretation or application of any Indian law by a judgement of a court of record which has become final, conclusive and binding, as compared to such interpretation or application by a court of record prior to the Base Date; or
- v. any change in the rates of any of the Taxes or royalties that have a direct effect on the Project;

“**Change of Scope**” shall have the meaning as set forth in Article 13; “**Change of Scope Notice**” shall have the meaning as set forth in Clause 13.2.1;

“**Change of Scope Order**” shall have the meaning as set forth in Clause 13.2.4;

“**Completion Certificate**” shall have the meaning as set forth in Clause 12.4.1;

“**Joint Venture**” means the Joint Venture of entities which have formed a joint venture for implementation of this Project;

“**Construction**” shall have the meaning as set forth in Clause 1.2.1 (f);

“**Construction Period**” means the period commencing from the Appointed Date and ending on the date of the Completion Certificate;

“**Contract Price**” means the amount as specified in Clause 17.1.1;

“**Contractor**” shall have the meaning attributed thereto in the array of Parties hereinabove as set forth in the Recitals;

“**Contractor Default**” shall have the meaning as set forth in Clause 21.1.1;

“**Cure Period**” means the period specified in this Agreement for curing any breach or default of any provision of this Agreement by the Party responsible for such breach or default and shall:

- commence from the date on which a notice is delivered by one Party to the other Party asking the latter to cure the breach or default specified in such notice;
- not relieve any Party from liability to pay Damages or compensation under the provisions of this Agreement; and
- not in any way be extended by any period of Suspension under this Agreement;

provided that if the cure of any breach by the Contractor requires any reasonable action by the Contractor that must be approved by the Authority or the Authority’s Engineer hereunder, the applicable Cure Period shall be extended by the period taken by the Authority or the Authority’s

Engineer to accord their approval;

“**Damages**” shall have the meaning as set forth in paragraph of Clause 1.2.1;

“**Defect**” means any defect or deficiency in Construction of the Works or any part thereof, which does not conform with the Specifications and Standards;

“**Defects Liability Period**” shall have the meaning as set forth in Clause 15.1.1;

“**Dispute**” shall have the meaning as set forth in Clause 24.1.1;

“**Dispute Resolution Procedure**” means the procedure for resolution of Disputes as set forth in Article 24;

“**Drawings**” means all of the drawings, calculations and documents pertaining to the Project as set forth in Schedule-H, and shall include ‘as built’ drawings of the Project;

“**Document**” or “**Documentation**” means documentation in printed or written form, or in tapes, discs, drawings, computer programmes, writings, reports, photographs, films, cassettes, or expressed in any other written, electronic, audio or visual form;

“**Emergency**” means a condition or situation that is likely to endanger the safety or security of the individuals on or about the Project, including Users thereof, or which poses an immediate threat of material damage to the Works or any of the Project Assets;

“**Encumbrances**” means, in relation to the Project, any encumbrances such as mortgage, charge, pledge, lien, hypothecation, security interest, assignment, privilege or priority of any kind having the effect of security or other such obligations, and shall include any designation of loss payees or beneficiaries or any similar arrangement under any insurance policy pertaining to the Project, where applicable herein but excluding utilities referred to in Clause 9.1;

“**EPC**” means engineering, procurement and construction;

“**Final Payment Certificate**” shall have the meaning as set forth in Clause 17.12.1;

“**Final Payment Statement**” shall have the meaning as set forth in Clause 17.10.1;

“**Force Majeure**” or “**Force Majeure Event**” shall have the meaning ascribed to it in Clause 19.1;

“**GAD**” or “**General Arrangement Drawings**” shall have the meaning as set forth in Clause 4.1.3 (b);

“**GOI**” or “**Government**” means the Government of India;

“**Good Industry Practice**” means the practices, methods, techniques, designs, standards, skills, diligence, efficiency, reliability and prudence which are generally

and reasonably expected from a reasonably skilled and experienced contractor engaged in the same type of undertaking as envisaged under this Agreement and which would be expected to result in the performance of its obligations by the Contractor in accordance with this Agreement, Applicable Laws and Applicable Permits in reliable, safe, economical and efficient manner;

“**Government Instrumentality**” means any department, division or sub-division of the Government or the State Government and includes any commission, board, authority, agency or municipal and other local authority or statutory body, including panchayat, under the control of the Government or the State Government, as the case may be, and having jurisdiction over all or any part of the Project or the performance of all or any of the services or obligations of the Contractor under or pursuant to this Agreement;

“**Indemnified Party**” means the Party entitled to the benefit of an indemnity pursuant to Article 23;

“**Indemnifying Party**” means the Party obligated to indemnify the other Party pursuant to Article 23;

“**Indirect Political Event**” shall have the meaning as set forth in Clause 19.3;

“**Insurance Cover**” means the aggregate of the maximum sums insured under the insurances taken out by the Contractor pursuant to Article 18, and includes all insurances required to be taken out by the Contractor under Clauses 18.1 and 18.9 but not actually taken, and when used in the context of any act or event, it shall mean the aggregate of the maximum sums insured and payable or deemed to be insured and payable in relation to such act or event;

“**Intellectual Property**” means all patents, trademarks, service marks, logos, get-up, trade names, internet domain names, rights in designs, blue prints, programmes and manuals, drawings, copyright (including rights in computer software), database rights, semi-conductor, topography rights, utility models, rights in know-how and other intellectual property rights, in each case whether registered or unregistered and including applications for registration, and all rights or forms of protection having equivalent or similar effect anywhere in the world;

“**Interim Payment Certificate**” or “**IPC**” means the interim payment certificate issued by the Authority’s Engineer for payment to the Contractor in respect of Contractor’s claims for payment raised in accordance with the provisions of this Agreement;

“**LOA**” or “**Letter of Acceptance**” means the letter of acceptance referred to in Recital (D);

“**Lead Member**” shall, in the case of a Joint Venture, mean the member of such Joint Venture who shall have the authority to bind the Contractor and each member

of the Joint Venture; and shall be deemed to be the Contractor for the purposes of this Agreement;

“**Manuals**” shall mean the manuals;

“**Material Adverse Effect**” means a material adverse effect of any act or event on the ability of either Party to perform any of its obligations under and in accordance with the provisions of this Agreement and which act or event causes a material financial burden or loss to either Party;

“**Materials**” are all the supplies used by the Contractor for incorporation in the Works of the Project;

“**Non-Political Event**” shall have the meaning as set forth in Clause 19.2;

“**Parties**” means the parties to this Agreement collectively and “**Party**” shall mean any of the parties to this Agreement individually;

“**Performance Security**” shall have the meaning as set forth in Clause 7.1.1;

“**Plant**” means the apparatus and machinery intended to form or forming part of the Works;

“**Political Event**” shall have the meaning as set forth in Clause 19.4;

“**Programme**” shall have the meaning as set forth in Clause 10.1.3;

“**Project**” means the construction of the Project in accordance with the provisions of this Agreement, and includes all works, services and equipment relating to or in respect of the Scope of the Project;

“**Project Assets**” means all physical and other assets relating to (a) tangible assets such as civil works and equipment including [foundations, embankments, pavements, road surface, interchanges, bridges, culverts, road over-bridges, drainage works, traffic signals, sign boards, kilometre-stones, electrical systems, communication systems, rest areas, relief centres, maintenance depots and administrative offices]; and (b) Project Facilities situated on the Site;

“**Project Completion Date**” means the date on which the last Provisional Certificate is issued;

“**Project Completion Schedule**” means the progressive Project Milestones set forth in Schedule-I for completion of the Project on or before the Scheduled Completion Date;

“**Project Facilities**” means all the amenities and facilities to be constructed on the Site,

“**Project Milestone**” means the project milestone as set forth in Schedule-I and includes the Scheduled Completion Date;

“**Proof Consultant**” shall have the meaning as set forth in Clause 10.2.2;

“**Provisional Certificate**” shall have the meaning as set forth in Clause 12.2.1;

“**Punch List**” shall have the meaning as set forth in Clause 12.2.1;

“**Quality Assurance Plan**” or “**QAP**” shall have the meaning as set forth in Clause 11.2.1;

“**Re.**”, “**Rs.**” or “**Rupees**” or “**Indian Rupees**” means the lawful currency of the Republic of India;

“**Request for Proposals**” or “**RFP**” shall have the meaning as set forth in Recital (C);

“**Retention Money**” shall have the meaning as set forth in Clause 7.5.1;

“**Safety Consultant**” shall have the meaning as set forth in Clause 10.1.5;

“**Scheduled Completion Date**” shall be the date as set forth in Clause 10.3.1;

“**Scope of the Project**” shall have the meaning as set forth in Clause 2.1;

“**Section**” means a part of the Project;

“**Site**” shall have the meaning as set forth in Clause 8.1;

“**Specifications and Standards**” means the specifications and standards relating to the quality, quantity, capacity and other requirements for the Project and any modifications thereof, or additions thereto, as included in the design and engineering for the Project submitted by the Contractor to, and expressly approved by, the Authority;

“**Stage Payment Statement**” shall have the meaning as set forth in Clause 17.4;

“**State**” means the State or the Union Territory, as the case may be, in which the headquarters of the Authority are situate and “**State Government**” means the government of that State or Union Territory;

“**Structures**” means an elevated [road or a flyover], as the case may be;

“**Sub-contractor**” means any person or persons to whom a part of the Works has been subcontracted by the Contractor and the permitted legal successors in title to such person, but not an assignee to such person;

“**Suspension**” shall have the meaning as set forth in Clause 20.1;

“**Taxes**” means any Indian taxes including excise duties, customs duties, value added tax, sales tax, local taxes, cess and any impost or surcharge of like nature (whether Central, State or local) on the goods, Materials, equipment and services incorporated in and forming part of the Project charged, levied or imposed by any

Government Instrumentality, but excluding any interest, penalties and other sums in relation thereto imposed on any account whatsoever. For the avoidance of doubt, Taxes shall not include taxes on corporate income;

“**Termination**” means the expiry or termination of this Agreement;

“**Termination Notice**” means the communication issued in accordance with this Agreement by one Party to the other Party terminating this Agreement;

“**Termination Payment**” means the amount payable by either Party to the other upon Termination in accordance with Article 21;

“**Terms of Reference**” or “**TOR**” shall have the meaning as set forth in Clause 16.2.1;

“**Tests**” means the tests set forth in Schedule-J to determine the completion of Works in accordance with the provisions of this Agreement;

“**Time Extension**” shall have the meaning as set forth in Clause 10.4.1;

“**User**” means a person who uses or intends to use the Project or any part thereof in accordance with the provision of this Agreement and Applicable Laws;

“**Valuation of Unpaid works**” shall have the meaning as set forth in Clause 21.5.1;

“**WPI**” means the wholesale price index for various commodities as published by the Ministry of Commerce and Industry, GOI and shall include any index which substitutes the WPI, and any reference to WPI shall, unless the context otherwise requires, be construed as a reference to the WPI published for the period ending with the preceding month; and

“**Works**” means all works including survey and investigation, design, engineering, procurement, construction, Plant, Materials, temporary works and other things necessary to complete the Project in accordance with this Agreement.

IN WITNESS WHEREOF THE PARTIES HAVE EXECUTED AND DELIVERED THIS AGREEMENT AS OF THE DAY, MONTH AND YEAR FIRST ABOVE WRITTEN.

SIGNED, SEALED AND
DELIVERED

SIGNED, SEALED AN
DELIVERED

For and on behalf of

For and on behalf of

[THE AUTHORITY] by:

THE CONTRACTOR by:

(Signature)

(Signature)

(Name)

(Name)

(Designation)

(Designation)

In the presence of:

- 1.
- 2.

{ COUNTERSIGNED and accepted by:

Name and particulars of other members of the Joint Venture }

Schedules

SCHEDULE – A

(See Clauses 2.1 and 8.1)

SITE OF THE PROJECT

1 The Site

- 1.1 Site of the Project shall include the land.
- 1.2 The dates of providing the land to the Contractor within 15 days of agreement.
- 1.3 An inventory of the Site including the land, building, trees and any other immovable property on, or attached to, the Site shall be prepared jointly by the Authority Representative and the Contractor, and such inventory shall form part of the memorandum referred to in Clause 8.2.1 of this Agreement.
- 1.4 The alignment plans of the Project are specified in Annex-III. In the case of sections where no modification in the existing alignment of the Project is contemplated, the alignment plan has not been provided. Alignment plans have only been given for sections where the existing alignment is proposed to be modified.
- 1.5 The status of the environment clearances obtained or awaited is given in Annex IV.

SCHEDULE – F

(See Clauses 7.1.1, 7.5.3 and 19.2)

FORM OF BANK GUARANTEE

Annex-I

(See Clause 7.1.1)

Form of Guarantee for Performance Security

.....,

.....,

.....,

WHEREAS:

a)(insert name and address of the contractor) (hereinafter called the “**Contractor**”) and (insert name and address of the project authority), (hereinafter called the “**Authority**”) have entered into an agreement (hereinafter called the “**Agreement**”) for the construction of thesection of State Highway No.on Engineering, Procurement and Construction (the “**EPC**”) basis, subject to and in accordance with the provisions of the Agreement

b) The Agreement requires the Contractor to furnish a Performance Security for due and faithful performance of its obligations, under and in accordance with the Agreement, during the Construction Period and Defects Liability

Period (as defined in the Agreement) in a sum of Rs..... cr. (Rupees

..... crore) (the “**Guarantee Amount**”).

c) We, through our branch at (the “**Bank**”) have agreed to furnish this bank guarantee (*hereinafter called the “**Guarantee**”*) by way of Performance Security.

NOW, THEREFORE, the Bank hereby, unconditionally and irrevocably, guarantees and affirms as follows:

1. The Bank hereby unconditionally and irrevocably guarantees and undertakes to pay to the Authority upon occurrence of any failure or default in the due and faithful performance of all or any of the Contractor’s obligations, under and in accordance with the provisions of the Agreement during the {Construction Period/ Defects Liability Period} on its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Contractor, such sum or sums up to an aggregate sum of the Guarantee Amount as the Authority shall claim, without the Authority being required to prove or to show grounds or reasons for its demand and/or for the sum specified therein.
2. A letter from the Authority, under the hand of an officer not below the rank of a Chief Engineer of the Authority, that the Contractor has committed default in the due and faithful performance of all or any of its obligations under and in accordance with the Agreement shall be conclusive, final and binding on the Bank. The Bank further agrees that the Authority shall be the sole judge as to whether the Contractor is in default in due and faithful performance of its obligations during and under the Agreement and its decision that the Contractor is in default shall be final and binding on the Bank, notwithstanding any differences between the Authority and the Contractor, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or body, or by the discharge of the Contractor for any reason whatsoever.
3. In order to give effect to this Guarantee, the Authority shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Contractor and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.
4. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.
5. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Agreement or to extend the time or period for the compliance with, fulfilment and/or performance of all or any of the obligations of the Contractor contained in the Agreement or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Authority against the Contractor, and either to enforce or

forbear from enforcing any of the terms and conditions contained in the Agreement and/or the securities available to the Authority, and the Bank shall not be released from its liability and obligation under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights under any such law.

6. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by the Authority in respect of or relating to the Agreement or for the fulfillment, compliance and/or performance of all or any of the obligations of the Contractor under the Agreement.
7. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guarantee Amount and this Guarantee will remain in force for the period specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee all rights of the Authority under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.
8. The Guarantee shall cease to be in force and effect on[§]. Unless a demand or claim under this Guarantee is made in writing before expiry of the Guarantee, the Bank shall be discharged from its liabilities hereunder.
9. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writing, and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.
10. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred branch, which shall be deemed to have been duly authorized to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.

11. This Guarantee shall come into force with immediate effect and shall remain in force and effect for up to the date specified in paragraph 8 above or until it is released earlier by the Authority pursuant to the provisions of the Agreement

Signed and sealed this day of, 20..... at

SIGNED, SEALED AND

DELIVERED For and on behalf of the

Bank by:

(Signature)

(Name)

(Designation)

(Code Number)

(Address)

NOTES:

- & The bank guarantee should contain the name, designation and code number of the officer(s) signing the guarantee.

- & The address, telephone number and other details of the head office of the Bank as well as of issuing branch should be mentioned on the covering letter of issuing branch.

Annex – II

(Schedule - F)

(See Clause 7.5.3)

Form of Guarantee for Withdrawal of Retention Money

.....,

.....,

.....,

WHEREAS:

1.(insert name and address of the contractor) (hereinafter called the “**Contractor**”) has executed an agreement (hereinafter called the “**Agreement**”) with the (insert name and address of the project authority), (hereinafter called the “**Authority**”) for the construction of the

ICCC Building. on Engineering, Procurement and Construction (the “**EPC**”) basis, subject to and in accordance with the provisions of the Agreement.

2. In accordance with Clause 7.5.3 of the Agreement, the Contractor may withdraw the retention money (hereinafter called the “**Retention Money**”) after furnishing to the Authority a bank guarantee for an amount equal to the proposed withdrawal.

3. We, through our branch at (the “**Bank**”) have agreed to furnish this bank guarantee (hereinafter called the “**Guarantee**”) for the amount of Rs. cr. (Rs.

..... crore) (the “**Guarantee Amount**”).

NOW, THEREFORE, the Bank hereby unconditionally and irrevocably guarantees and affirms as follows:

4. The Bank hereby unconditionally and irrevocably undertakes to pay to the Authority, upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Contractor, such sum or sums up to an aggregate sum of the Guarantee Amount as the Authority shall claim, without the Authority being required to prove or to show grounds or reasons for its demand and/or for the sum specified therein.
5. A letter from the Authority, under the hand of an officer not below the rank of a Chief Engineer of the Authority, that the Contractor has committed default in the due and faithful performance of all or any of its obligations for under and in accordance with the Agreement shall be conclusive, final and binding on the Bank. The Bank further agrees that the Authority shall be the sole judge as to whether the Contractor is in default in due and faithful performance of its obligations during and under the Agreement and its decision that the Contractor is in default shall be final, and binding on the Bank, notwithstanding any differences between the Authority and the Contractor, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or body, or by the discharge of the Contractor for any reason whatsoever.
6. In order to give effect to this Guarantee, the Authority shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Contractor and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.
7. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.
8. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Retention Money and any of the rights and powers exercisable by the Authority against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Agreement and/or the securities available to the Authority, and the Bank shall not be released from its liability and obligation under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any

law relating to sureties and guarantors would but for this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights under any such law.

9. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by the Authority in respect of or relating to the Retention Money.
10. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guarantee Amount and this Guarantee will remain in force for the period specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee all rights of the Authority under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.
11. The Guarantee shall cease to be in force and effect 90 (ninety) days after the date of the Completion Certificate specified in Clause 12.4 of the Agreement.
12. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writing, and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.
13. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred branch, which shall be deemed to have been duly authorised to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.
14. This Guarantee shall come into force with immediate effect and shall remain in force and effect up to the date specified in paragraph 8 above or until it is released earlier by the Authority pursuant to the provisions of the Agreement.
Signed and sealed this day of, 20..... at

SIGNED, SEALED AND DELIVERED

For and on behalf of the Bank by:

(Signature)

(Name)

(Designation)

(Code Number)

(Address)

NOTES:

- (i) The bank guarantee should contain the name, designation and code number of the officer(s) signing the guarantee.
- (ii) The address, telephone number and other details of the head office of the Bank as well as of issuing branch should be mentioned on the covering letter of issuing branch.

(Schedule - F)

(See Clause 19.2)

Form of Guarantee for Advance Payment

.....,
.....,
.....,

WHEREAS:

(A)(insert name and address of the contractor) (hereinafter called the “**Contractor**” has executed an agreement (hereinafter called the “**Agreement**”) with the (insert name and address of the project authority), (hereinafter called the “**Authority**”) for the construction of the

..... section of State Highway No. on Engineering, Procurement and Construction (the “**EPC**”) basis, subject to and in accordance with the provisions of the Agreement

(B) In accordance with Clause 19.2 of the Agreement, the Authority shall make to the Contractor an interest free advance payment (herein after called “**Advance Payment**”) equal to 10% (ten per cent) of the Contract Price; and that the Advance Payment shall be made in three instalments subject to the Contractor furnishing an irrevocable and unconditional guarantee by a scheduled bank for

an amount equivalent to 110% (one hundred and ten per cent) of such instalment to remain effective till the complete and full repayment of the instalment of the Advance Payment as security for compliance with its obligations in accordance with the Agreement. The amount of {first/second/third} instalment of the Advance

Payment is Rs. cr. (Rupees

crore) and the amount of this Guarantee is Rs. cr. (Rupees

..... crore)(the “**Guarantee Amount**”)§.

(C) We, through our branch at (the “**Bank**”) have agreed to furnish this bank guarantee (*hereinafter called the “Guarantee”*) for the Guarantee Amount.

§ The Guarantee Amount should be equivalent to 110% of the value of the applicable instalment.

NOW, THEREFORE, the Bank hereby, unconditionally and irrevocably, guarantees and affirms as follows:

1. The Bank hereby unconditionally and irrevocably guarantees the due and faithful repayment on time of the aforesaid instalment of the Advance Payment under and in accordance with the Agreement, and agrees and undertakes to pay to the Authority, upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Contractor, such sum or sums up to an aggregate sum of the Guarantee Amount as the Authority shall claim, without the Authority being required to prove or to show grounds or reasons for its demand and/or for the sum specified therein.
2. A letter from the Authority, under the hand of an officer not below the rank of a Chief Engineer of the Authority, that the Contractor has committed default in the due and faithful performance of all or any of its obligations for the repayment of the instalment of the Advance Payment under and in accordance with the Agreement shall be conclusive, final and binding on the Bank. The Bank further agrees that the Authority shall be the sole judge as to whether the Contractor is in default in due and faithful performance of its obligations during and under the Agreement and its decision that the Contractor is in default shall be final and binding on the Bank, notwithstanding any differences between the Authority and the Contractor, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or body, or by the discharge of the Contractor for any reason whatsoever.
3. In order to give effect to this Guarantee, the Authority shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Contractor and/or the Bank, whether by their absorption with any other body or

corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.

4. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.
5. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Advance Payment or to extend the time or period of its repayment or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Authority against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Agreement and/or the securities available to the Authority, and the Bank shall not be released from its liability and obligation under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights under any such law.
6. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by the Authority in respect of or relating to the Advance Payment.
7. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guarantee Amount and this Guarantee will remain in force for the period specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee all rights of the Authority under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.
8. The Guarantee shall cease to be in force and effect on[§] unless a demand or claim under this Guarantee is made in writing on or before the aforesaid date, the Bank shall be discharged from its liabilities hereunder.
9. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writing, and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.
10. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred branch, which shall be deemed to have been duly authorized to receive such notice and to effect payment thereof forthwith,

and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in providing such notice when given by post it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.

- m) This Guarantee shall come into force with immediate effect and shall remain in force and effect up to the date specified in paragraph 8 above or until it is released earlier by the Authority pursuant to the provisions of the Agreement.

Signed and sealed this day of, 20..... at

SIGNED, SEALED AND DELIVERED

For and on behalf of the Bank by:

(Signature)

(Name)

(Designation)

(Code Number)

(Address)

NOTES:

- f) The bank guarantee should contain the name, designation and code number of the officer(s) signing the guarantee.
- g) The address, telephone number and other details of the head office of the Bank as well as of issuing branch should be mentioned on the covering letter of issuing branch.

SCHEDULE – H

(See Clause 10.2.4)

DRAWINGS

a) Drawings

In compliance of the obligations set forth in Clause 10.2 of this Agreement, the Contractor shall furnish to the Authority’s Engineer, free of cost, all

Drawings listed in Annex-I of this Schedule-H.

b) Additional Drawings

If the Authority’s Engineer determines that for discharging its duties and functions under this Agreement, it requires any drawings other than those listed in Annex-I, it may by notice require the Contractor to prepare and furnish such drawings forthwith. Upon receiving a requisition to this effect, the

Contractor shall promptly prepare and furnish such drawings to the Authority’s

Engineer, as if such drawings formed part of Annex-I of this Schedule-H.

(Schedule - H)

List of Drawings

[**Note:** The Authority will be informed at the time of Agreement, however all the drawings related to Park Development (GFC) shall be submitted by the bidder]

SCHEDULE – I

(See Clause 10.3.2)

PROJECT COMPLETION SCHEDULE

1. Project Completion Schedule

During Construction period, the Contractor shall comply with the requirements set forth in this Schedule-I for each of the Project Milestones and the Scheduled Completion Date. Within 15 (fifteen) days of the date of each Project Milestone, the Contractor shall notify the Authority of such compliance along with necessary particulars thereof.

2.0 Project Milestones:

S.No	Description of item of works	Payment Schedule	Time period
1	1.Construction of Walk Way 2. Construction of Guard Room Cum Ticket Counter 3.Electrification of Guard Room 4. Construction of Cafeteria 5. Construction of Specific/Emergency Gate 6. Construction of Entrance gate 7.Construction of Swimming Pool 8. Construction of Trellis walkway 9. Construction of New Badminton Court Building 10. Construction of Toilet Blocks 11. Construction of Boundary wall (External) 12. Construction of Boundary wall (Internal) 13. Development of Basket Ball Court 14.Development of Kids Play Area 15. Development of Open Air Theatre 16. Development of Lawn Tennis Court 17. Development of Cricket Field and its Drainage 18. Development of Multipurpose ground 19. Development of Sculpture court 20. Renovation of Nehru Memorial 21. Renovation of Station Club 22. Renovation of Existing Badminton court 23. Renovation` of Gym Building 24. Renovation of Cleveland Memorial 25.Supply & Providing Lighting facility for Sport’s Complex 26. Supply & providing of General Lighting facility 27. Dismantling of Boundary wall	1) Contractor has to initiate atleast 25% of the Items mentioned. 2) Payment will be released to the Contractor after raising monthly RA Bill.	18 Months Period

	28.Swimming pool mechanical & others 29. Construction of Parking sheds 30. Landscaping		
2.	Operation & Maintenance of entire Project work for a period of Three Years after completion of the project work	<p>1. Payment will be released on Quarterly basis (i.e., 3 months) based on satisfactory work performance till the completion of O & M period (i.e., 3 years)</p> <p>2. Contractor should submit the monthly salary bank statement of the staff deployed for the O & M Project works alongwith EPF,ESI payment slip issued by the competent authority.</p>	36 months

Payment Certificates

The Contractor shall submit to the Engineer monthly bills of the estimated value of the work completed less the cumulative amount certified previously.

The Engineer shall check the Contractor’s bills within 14 days and certify the amount to be paid to the Contractor.

The value of work executed shall be determined by the Engineer.

. Scheduled Completion Date

- 5.1 The Scheduled Completion Date shall be the 18 months from the Appointed Date.
- 5.2 On or before the Scheduled Completion Date, the Contractor shall have completed construction in accordance with this Agreement.

a) Extension of time

Upon extension of any or all of the aforesaid Project work or the Scheduled Completion Date, as the case may be, under and in accordance with the provisions of this Agreement, the Project Completion Schedule shall be deemed to have been amended accordingly.

SCHEDULE – J

(See Clause 12.1.2)

TESTS ON COMPLETION¹⁸**1 Schedule for Tests**

- 1.1 The Contractor shall, no later than 30 (thirty) days prior to the likely completion of construction, notify the Authority’s Engineer and the Authority of its intent to subject the Project to Tests, and no later than 10 (ten) days prior to the actual date of Tests, furnish to the Authority’s Engineer and the Authority detailed inventory and particulars of all works and equipment forming part of Works.
- 1.2 The Contractor shall notify the Authority’s Engineer of its readiness to subject the Project Highway to Tests at any time after 10 (ten) days from the date of such notice, and upon receipt of such notice, the Authority’s Engineer shall, in consultation with the Contractor, determine the date and time for each Test and notify the same to the Authority who may designate its representative to witness the Tests. The Authority’s Engineer shall thereupon conduct the Tests itself or cause any of the Tests to be conducted in accordance with Article 12 and this Schedule-J.

2 Tests

- 2.1 Visual and physical test: The Authority’s Engineer shall conduct a visual and physical check of construction to determine that all works and equipment forming part thereof conform to the provisions of this Agreement. The physical tests shall include [***].
- 2.2 Riding quality test: Riding quality of each lane of the carriageway shall be checked with the help of a calibrated bump integrator and the maximum permissible roughness for purposes of this Test shall be [2,000 (two thousand)] mm for each kilometer.
- 2.3 Deleted

- 2.4 Other tests: The Authority’s Engineer may require the Contractor to carry out or cause to be carried additional tests, in accordance with Good Industry Practice, for determining the compliance of the Project with Specifications and Standards.
- 2.5 Environmental audit: The Authority’s Engineer shall carry out a check to determine conformity of the Project with the environmental requirements set forth in Applicable Laws and Applicable Permits.
- 2.6 Safety Audit: The Authority’s Engineer shall carry out, or cause to be carried out, a safety audit to determine conformity of the Project with the safety requirements and Good Industry Practice.

i. Agency for conducting Tests

All Tests set forth in this Schedule-J shall be conducted by the Authority’s

Engineer or such other agency or person as it may specify in consultation with the Authority.

ii. Completion Certificate

Upon successful completion of Tests, the Authority’s Engineer shall issue the Completion Certificate in accordance with the provisions of Article 12.

SCHEDULE – K

(See Clause 12.2 and 12.4)

PROVISIONAL CERTIFICATE

1) I/We, (Name of the Authority’s Engineer), acting as the Authority’s Engineer, under and in accordance with the Agreement dated

..... (the “**Agreement**”), for construction of the section (kmto km) of State Highway No. (the “**Project**”) on Engineering, Procurement and Construction (EPC) basis through

(Name of Contractor), hereby certify that the Tests in accordance with Article 12 of the Agreement have been undertaken to determine compliance of the Project with the provisions of the Agreement.

2) Works that are incomplete on account of Time Extension have been specified in the Punch List appended hereto, and the Contractor has agreed and accepted that it shall complete all such works in the time and manner set forth in the Agreement. In addition, certain minor works are incomplete and these are not likely to cause material inconvenience to the Users of the Project Highway or affect their safety. The Contractor has agreed and accepted that as a condition of this Provisional Certificate, it shall complete such minor works within 30 (thirty) days hereof. These minor works have also been specified in the aforesaid Punch List.

3) In view of the foregoing, I/We am/are satisfied that the Project from km to kmcan be safely and reliably placed in service of the Users thereof, and in terms of the Agreement, the Project is hereby provisionally declared fit for entry into operation on this the day of 20.....

ACCEPTED, SIGNED, SEALED

SIGNED, SEALED AND

AND DELIVERED

DELIVERED

For and on behalf of

For and on behalf of

CONTRACTOR by:

AUTHORITY’S ENGINEER by:

(Signature)

(Signature)

(Name and Designation)

(Name and Designation)

(Address)

(Address)

COMPLETION CERTIFICATE

a) I/We, (Name of the Authority’s Engineer), acting as the Authority’s Engineer, under and in accordance with the Agreement dated

(the “**Agreement**”), for construction of the section (km to km

.....) of State Highway No. (the “**Project Highway**”) on Engineering,

Procurement and Construction (EPC) basis through

(Name of Contractor), hereby certify that the Tests in accordance with Article 12 of the Agreement have been successfully undertaken to determine compliance of the Highway with the provisions of the Agreement, and I/We am/are satisfied that the Project Highway can be safely and reliably placed in service of the Users thereof.

b) It is certified that, in terms of the aforesaid Agreement, all works forming part of Highway have been completed, and the Project Highway is hereby declared fit for entry into operation on this the day of 20.....

SIGNED, SEALED AND

DELIVERED For and on behalf of

the Authority’s Engineer by:

(Signature)

(Name)

(Designation)

(Address)

SCHEDULE – L

(See Clause 18.1.1)

SELECTION OF AUTHORITY’S ENGINEER**1.0 Selection of Authority’s Engineer**

- 1.1 The provisions of the Model Request for Proposals for Selection of Technical Consultants, issued by the Ministry of Finance, Government of India vide OM 24(23)/PF-II/2008 dated 21, May 2009, or any substitute thereof shall apply for selection of an experienced firm to discharge the functions and duties of an Authority’s Engineer. Provided, however, that no entity which is owned or controlled by the Authority shall be eligible for appointment as the Authority’s Engineer hereunder.
- 1.2 In the event of termination of the Technical Consultants appointed in accordance with the provisions of Paragraph 1.1, the Authority shall appoint another firm of Technical Consultants forthwith and may engage a government-owned entity in accordance with the provisions of Paragraph 3 of this Schedule-L.

2.0 Terms of Reference

The Terms of Reference for the Authority’s Engineer (the “**TOR**”) shall substantially conform with Annex 1 to this Schedule L.

3.0 Appointment of Government entity as Authority’s Engineer

Notwithstanding anything to the contrary contained in this Schedule, the Authority may in its discretion appoint a government-owned entity as the Authority’s Engineer; provided that such entity shall be a body corporate having as one of its primary functions the provision of consulting, advisory and supervisory services for engineering projects; provided further that a government-owned entity which is owned or controlled by the Authority shall not be eligible for appointment as Authority’s Engineer.

Annex – I

(Schedule - L)

Terms of reference for Authority’s Engineer¹⁹**1 Scope**

1.1 These Terms of Reference (the “**TOR**”) for the Authority’s Engineer are being specified pursuant to the EPC Agreement dated (the “**Agreement**), which

has been entered into between the (insert name and address of the Authority) (the “**Authority**”) and (the “**Contractor**”) for construction of ICCB Building on Engineering, Procurement, Construction (EPC) basis, and a copy of

which is annexed hereto and marked as Annex-A to form part of this TOR.

1.2 The TOR shall apply to construction of the Project .

2 Definitions and interpretation

2.1 The words and expressions beginning with or in capital letters and not defined herein but defined in the Agreement shall have, unless repugnant to the context, the meaning respectively assigned to them in the Agreement.

2.2 References to Articles, Clauses and Schedules in this TOR shall, except where the context otherwise requires, be deemed to be references to the Articles, Clauses and Schedules of the Agreement, and references to Paragraphs shall be deemed to be references to Paragraphs of this TOR.

2.3 The rules of interpretation contained in Clauses 1.2, 1.3 and 1.4 of the Agreement shall apply, *mutatis mutandis*, to this TOR.

3.0 General

3.1 The Authority’s Engineer shall discharge its duties in a fair, impartial and efficient manner, consistent with the highest standards of professional integrity and Good Industry Practice.

3.2 The Authority’s Engineer shall perform the duties and exercise the authority in accordance with the provisions of this Agreement, but subject to obtaining prior written approval of the Authority before determining:

a) any Time Extension;

- b) any additional cost to be paid by the Authority to the Contractor;
 - c) the Termination Payment; or
 - d) any other matter which is not specified in (a), (b) or (c) above and which creates an obligation or liability on either Party for a sum exceeding Rs. 5,00,000 (Rs. five lakh).
- 3.3 The Authority’s Engineer shall submit regular periodic reports, at least once every month, to the Authority in respect of its duties and functions under this Agreement. Such reports shall be submitted by the Authority’s Engineer within 10 (ten) days of the beginning of every month.
- 3.4 The Authority’s Engineer shall inform the Contractor of any delegation of its duties and responsibilities to its suitably qualified and experienced personnel; provided, however, that it shall not delegate the authority to refer any matter for the Authority’s prior approval in accordance with the provisions of Clause 18.2.
- 3.5 The Authority’s Engineer shall aid and advise the Authority on any proposal for Change of Scope under Article 13.
- 3.6 In the event of any disagreement between the Parties regarding the meaning, scope and nature of Good Industry Practice, as set forth in any provision of the Agreement, the Authority’s Engineer shall specify such meaning, scope and nature by issuing a reasoned written statement relying on good industry practice and authentic literature.

4.0 Construction Period

- 4.1 During the Construction Period, the Authority’s Engineer shall review the Drawings furnished by the Contractor along with supporting data, including the geo-technical and hydrological investigations, characteristics of materials from borrow areas and quarry sites, topographical surveys, and the recommendations of the Safety Consultant in accordance with the provisions of Clause 10.1.6. The Authority’s Engineer shall complete such review and send its observations to the Authority and the Contractor within 15 (fifteen) days of receipt of such Drawings; provided.
- 4.2 The Authority’s Engineer shall review any revised Drawings sent to it by the Contractor and furnish its comments within 10 (ten) days of receiving such Drawings.
- 4.3 The Authority’s Engineer shall review the Quality Assurance Plan submitted by the Contractor and shall convey its comments to the Contractor within a period of 21 (twenty-one) days stating the modifications, if any, required thereto.
- 4.4 The Authority’s Engineer shall complete the review of the methodology proposed to be adopted by the Contractor for executing the Works, and convey its comments

- to the Contractor within a period of 10 (ten) days from the date of receipt of the proposed methodology from the Contractor.
- 4.5 The Authority’s Engineer shall grant written approval to the Contractor, where necessary, for interruption and diversion of the flow of traffic in the existing lane(s) of the Project for purposes of maintenance during the Construction Period in accordance with the provisions of Clause 10.4.
 - 4.6 The Authority’s Engineer shall review the monthly progress report furnished by the Contractor and send its comments thereon to the Authority and the Contractor within 7 (seven) days of receipt of such report.
 - 4.7 The Authority’s Engineer shall inspect the Construction Works and the Project and shall submit a monthly Inspection Report bringing out the results of inspections and the remedial action taken by the Contractor in respect of Defects or deficiencies. In particular, the Authority’s Engineer shall include in its Inspection Report, the compliance of the recommendations made by the Safety Consultant.
 - 4.8 The Authority’s Engineer shall conduct the pre-construction review of manufacturer’s test reports and standard samples of manufactured Materials, and such other Materials as the Authority’s Engineer may require.
 - 4.9 For determining that the Works conform to Specifications and Standards, the Authority’s Engineer shall require the Contractor to carry out, or cause to be carried out, tests at such time and frequency and in such manner as specified in the Agreement and in accordance with Good Industry Practice for quality assurance.
 - 4.10 The Authority’s Engineer shall test check at least 20 (twenty) percent of the quantity or number of tests prescribed for each category or type of test for quality control by the Contractor.
 - 4.11 The timing of tests referred to in Paragraph 4.9, and the criteria for acceptance/rejection of their results shall be determined by the Authority’s Engineer in accordance with the Quality Control Manuals. The tests shall be undertaken on a random sample basis and shall be in addition to, and independent of, the tests that may be carried out by the Contractor for its own quality assurance in accordance with Good Industry Practice.
 - 4.12 In the event that results of any tests conducted under Clause 11.10 establish any Defects or deficiencies in the Works, the Authority’s Engineer shall require the Contractor to carry out remedial measures.
 - 4.13 The Authority’s Engineer may instruct the Contractor to execute any work which is urgently required for the safety of the Highway, whether because of an accident, unforeseeable event or otherwise; provided that in case of any work required on account of a Force Majeure Event, the provisions of Clause 21.6 shall apply.

- 4.14 In the event that the Contractor fails to achieve any of the Milestones, the Authority’s Engineer shall undertake a review of the progress of construction and identify potential delays, if any. If the Authority’s Engineer shall determine that completion of the Project is not feasible within the time specified in the Agreement, it shall require the Contractor to indicate within 15 (fifteen) days the steps proposed to be taken to expedite progress, and the period within which the Project Completion Date shall be achieved. Upon receipt of a report from the Contractor, the Authority’s Engineer shall review the same and send its comments to the Authority and the Contractor forthwith.
- 4.15 The Authority’s Engineer shall obtain from the Contractor a copy of all the Contractor’s quality control records and documents before the Completion Certificate is issued pursuant to Clause 12.4.
- 4.16 Authority’s Engineer may recommend to the Authority suspension of the whole or part of the Works if the work threatens the safety of the Users and pedestrians. After the Contractor has carried out remedial measures, the Authority’s Engineer shall inspect such remedial measures forthwith and make a report to the Authority recommending whether or not the suspension hereunder may be revoked.
- 4.17 In the event that the Contractor carries out any remedial measures to secure the safety of suspended works and Users, and requires the Authority’s Engineer to inspect such works, the Authority’s Engineer shall inspect the suspended works within 3 (three) days of receiving such notice, and make a report to the Authority forthwith, recommending whether or not such suspension may be revoked by the Authority.
- 4.18 The Authority’s Engineer shall carry out, or cause to be carried out, all the Tests specified in Schedule-J and issue a Completion Certificate or Provisional Certificate, as the case may be. For carrying out its functions under this Paragraph 4.18 and all matters incidental thereto, the Authority’s Engineer shall act under and in accordance with the provisions of Article 12 and Schedule-J.

5 Determination of costs and time

- 5.1 The Authority’s Engineer shall determine the costs, and/or their reasonableness, that are required to be determined by it under the Agreement.
- 5.2 The Authority’s Engineer shall determine the period of Time Extension that is required to be determined by it under the Agreement.
- 5.3 The Authority’s Engineer shall consult each Party in every case of determination in accordance with the provisions of Clause 18.5.

6.0 Payments

- 6.1 The Authority’s Engineer shall withhold payments for the affected works for which the Contractor fails to revise and resubmit the Drawings to the Authority’s Engineer in accordance with the provisions of Clause 10.2.4 (d).
- 6.2 Authority’s Engineer shall
10. within 10 (ten) days of receipt of the Stage Payment Statement from the Contractor pursuant to Clause 19.4, determine the amount due to the Contractor and recommend the release of 90 (ninety) percent of the amount so determined as part payment, pending issue of the Interim Payment Certificate; and
11. within 15 (fifteen) days of the receipt of the Stage Payment Statement referred to in Clause 19.4, deliver to the Authority and the Contractor an Interim Payment Certificate certifying the amount due and payable to the Contractor, after adjustments in accordance with the provisions of Clause 19.10.

7.0 Other duties and functions

The Authority’s Engineer shall perform all other duties and functions as specified in the Agreement.

8 Miscellaneous

- 8.1 A copy of all communications, comments, instructions, Drawings or Documents sent by the Authority’s Engineer to the Contractor pursuant to this TOR, and a copy of all the test results with comments of the Authority’s Engineer thereon, shall be furnished by the Authority’s Engineer to the Authority forthwith.
- 8.2 The Authority’s Engineer shall retain at least one copy each of all Drawings and Documents received by it, including ‘as-built’ Drawings, and keep them in its safe custody.
- 8.3 Within 90 (ninety) days of the Project Completion Date, the Authority’s Engineer shall obtain a complete set of as-built Drawings, in 2 (two) hard copies and in micro film format or in such other medium or manner as may be acceptable to the Authority, reflecting the Project as actually designed, engineered and constructed, including an as-built survey illustrating the layout of the Project and setback lines, if any, of the buildings and structures forming part of Project Facilities; and shall hand them over to the Authority against receipt thereof.

- 8.4 The Authority’s Engineer, if called upon by the Authority or the Contractor or both, shall mediate and assist the Parties in arriving at an amicable settlement of any Dispute between the Parties.
- 8.5 The Authority’s Engineer shall inform the Authority and the Contractor of any event of Contractor’s Default within one week of its occurrence.

SCHEDULE – M

(See Clauses 19.4.1, 19.6.1, and 19.8.1)

FORMS OF PAYMENT STATEMENTS

a) Stage Payment Statement for Works

The Stage Payment Statement for Works shall state:

S.no	Description of item of works	Payment Schedule	Time period
1	1.Construction of Walk Way 2. Construction of Guard Room Cum Ticket Counter 3.Electrification of Guard Room 4. Construction of Cafeteria 5. Construction of Specific/Emergency Gate 6. Construction of Entrance gate 7.Construction of Swimming Pool 8. Construction of Trellis walkway 9. Construction of New Badminton Court Building 10. Construction of Toilet Blocks 11. Construction of Boundary wall (External) 12. Construction of Boundary wall (Internal) 13. Development of Basket Ball Court 14.Development of Kids Play Area 15. Development of Open Air Theatre 16. Development of Lawn Tennis Court 17. Development of Cricket Field and its Drainage 18. Development of Multipurpose ground 19. Development of Sculpture court 20. Renovation of Nehru Memorial 21. Renovation of Station Club 22. Renovation of Existing Badminton court 23. Renovation` of Gym Building 24. Renovation of Cleveland Memorial 25.Supply & Providing Lighting facility for Sport’s Complex 26. Supply & providing of General Lighting facility 27. Dismantling of Boundary wall 28.Swimming pool mechanical & others	1) Contractor has to initiate atleast 25% of the Items mentioned. 2) Payment will be released to the Contractor after raising monthly RA Bill.	18 Months Period

	29. Construction of Parking sheds 30. Landscaping		
2.	Operation & Maintenance of entire Project work for a period of Three Years after completion of the project work	<p>1. Payment will be released on Quarterly basis (i.e., 3 months) based on satisfactory work performance till the completion of O & M period (i.e., 3 years)</p> <p>2. Contractor should submit the monthly salary bank statement of the staff deployed for the O & M Project works alongwith EPF,ESI payment slip issued by the competent authority.</p>	36 months

Payment Certificates

The Contractor shall submit to the Engineer monthly bills of the estimated value of the work completed less the cumulative amount certified previously.

The Engineer shall check the Contractor’s milestone bills within 14 days and certify the amount to be paid to the Contractor.

The value of work executed shall be determined by the Engineer.

(d) Contractor’s claim for Damages

Note: The Contractor shall submit its claims in a form acceptable to the Authority.

SCHEDULE – N

(See Clause 20.1)

INSURANCE**1.0 Insurance during Construction Period**

1.1 The Contractor shall effect and maintain at its own cost, from the Appointed Date till the date of issue of the Completion Certificate, the following insurances for any loss or damage occurring on account of Non Political Event of Force Majeure, malicious act, accidental damage, explosion, fire and terrorism:

- a) insurance of Works, Plant and Materials and an additional sum of [15% (fifteen per cent)] of such replacement cost to cover any additional costs of and incidental to the rectification of loss or damage including professional fees and the cost of demolishing and removing any part of the Works and of removing debris of whatsoever nature; and
- b) insurance for the Contractor’s equipment and Documents brought onto the Site by the Contractor, for a sum sufficient to provide for their replacement at the Site.

1.2 The insurance under paragraph 1.1 (a) and (b) above shall cover the Authority and the Contractor against all loss or damage from any cause arising under paragraph 1.1 other than risks which are not insurable at commercial terms.

2. Insurance for Contractor’s Defects Liability

The Contractor shall effect and maintain insurance cover for the Works from the date of issue of the Completion Certificate until the end of the Defects Liability Period for any loss or damage for which the Contractor is liable and which arises from a cause occurring prior to the issue of the Completion Certificate. The Contractor shall also maintain other insurances for maximum sums as may be required under Applicable Laws and in accordance with Good Industry Practice.

3. Insurance against injury to persons and damage to property

3.1 The Contractor shall insure against its liability for any loss, damage, death or bodily injury, or damage to any property (except things insured under Paragraphs

1 and 2 of this Schedule or to any person (except persons insured under Clause 20.9), which may arise out of the Contractor’s performance of this Agreement. This insurance shall be for a limit per occurrence of not less than the amount specified below with no limit on the number of occurrences.

The insurance cover shall be not less than estimated cost.

3.2 The insurance shall be extended to cover liability for all loss and damage to the Authority’s property arising out of the Contractor’s performance of this Agreement excluding:

the Authority’s right to have the construction works executed on, over, under, in or through any land, and to occupy this land for the Works; and damage which is an unavoidable result of the Contractor’s obligations to execute the Works.

4 Insurance to be in joint names

The insurance under paragraphs 1 to 3 above shall be in the joint names of the Contractor and the Authority.

SECTION - 5

SECTION 5: SPECIAL CONDITIONS OF CONTRACT

5.1 **General:** The special conditions are supplementary instructions to the tenders and shall form part of the contract.

5.2 **Drawing:** All Drawings/Layout plans given in Section 11 are for reference or guidance purpose only. The Bidder will submit the detailed Contract execution plan within 15 days from date of issuing Work Order or Agreement whichever is earlier. The same shall be reviewed and approved by BSCL or through other agency approved by BSCL. This 15 days period is included in stipulated time of Contract Period. Construction of ICCB Building shall be carried out as per the drawings approved by BSCL.

5.3 **Data to be furnished by the Bidder:** The Bidder shall submit the following information to BSCL.

5.4 Proposed constructions Programme and time schedule showing sequence of operations within **15 days** of receipt of notice to proceed with the work in pursuance of the conditions of contract.

5.5 **Action when the progress of any item of work is unsatisfactory:** If the progress of an item of work during construction, which is important for timely completion of work is unsatisfactory, BSCL shall notwithstanding that the general progress of work is satisfactory, after giving the Bidder **15 days'** notice in writing get the said work executed by employing other means including other labour / Bidder etc. and the Bidder will have no claim for compensation for any loss sustained by him owing to such action.

5.6 In case if any of the works under this contract are found unsatisfactorily by BSCL, the BSCL shall either request the bidder to rectify the defect immediately or at his discretion may have it done by others (vendor or contractor) and deduct the actual amount incurred as per market rate plus 15 % extra incurred in such works from the bidders.

5.7 **Inspection and Tests:** Except as otherwise provided in here of all material and workmanship if not otherwise designated by the specifications shall be subject to inspection, examination and test by BSCL at any and all times during manufacture and/or construction and at any/all places where such manufacture or constructions are carried on. The BSCL shall have the right to reject defective materials and workmanship or require its corrections. Rejected workmanship shall be satisfactorily replaced with the proper material without charge thereof and the Bidder shall properly segregate and remove the rejected material from the premises. If the Bidder fails to proceed at once with the replacement of the rejected material and/or the construction of defective

workmanship BSCL may replace such material and/or correct such workmanship and charge the cost thereof to the Bidder.

The Bidder shall be liable for replacement of defective work up to the time of completion of DLP in accordance with the conditions of contract of all work to be done under the contract. The Bidder shall furnish promptly without additional charge all facilities, labour and material necessary for the safe and convenient inspection and tests that may be required by BSCL. All inspections and tests by the departments shall be performed in such a manner as to not unnecessarily delay the work. Special full size and performance test shall be charged with any additional cost of inspection when materials and workmanship are not kept ready by the Bidder at the time of inspection.

5.8 Removal of temporary work, Plant & Surplus materials: Prior to final acceptance of the completed work, but excepting as otherwise expressly directed or permitted in writing, the Bidder shall, at his own expenses remove from the site and dispose of all the temporary structures including buildings, all plant and surplus materials, and all rubbish and debris for which he is responsible to the satisfaction of BSCL.

5.9 Possession prior to completion: BSCL shall have the right to take possession of or use any completed part of the work. Such possession or use shall not be deemed as an acceptance of any work not completed in accordance with the contract.

5.10 Damage to works: The works whether fully completed or incomplete, all the materials, machinery, plants, tools, temporary building and other things connected there with shall remain at the risk and in the sole charge of the Bidder until the completed work has been delivered to BSCL and till completion certificate has been obtained from BSCL . Until such delivery of the completed work, the Bidder shall at his own cost take all precautions reasonably to keep all the aforesaid works, materials, machinery, plants, temporary buildings and other things connected there with free from any loss, damages and in the event of the same or any part there of being lost or damaged, he shall forthwith reinstate and make good such loss or damages at his own cost.

5.11 Examination and tests on completions: On the completion of the work and not later than three months thereafter, BSCL shall make such examination and tests of the work as may then seem to him to be possible, necessary or desirable, and the Bidder shall furnish free of cost any materials and labour which may be necessary thereof and shall facilitate in every way all operations required by BSCL, in making examination and tests.

5.12 Climatic Conditions: BSCL may order the Bidder to suspend any work that may be subject to damage by climatic conditions and no claims of the Bidder will be entertained by the department on this account.

5.13 As per the Ministry of Environment and Forest Guidelines 2010 and Ministry of Urban Development notifications, the Site area shall be protected from dust by fixing Green Fencing around the Construction site area.

The Contractor is instructed to strictly adhere to the following at his own cost.

- a) Supply and Fixing Green barriers and wind breaking walls around their sites.
- b) Cover tarpaulin on scaffolding around area of construction,
- c) Do not store construction material, particularly sand, on any part of the street, roads in any colony,
- d) Cordon the work area with proper fencing by other means with due consideration of safety of workers, public, etc.
- e) Dust emissions from construction site are controlled.
- f) Sprinklers should be compulsorily used at the site and Wet jets in grinding and stone cutting must be used.
- g) The work area shall be well illuminated during nights.

5.14 **Safety regulations:** During the entire contract period, while carrying out this works indicated in this tender, the Bidder will ensure compliance of all safety regulations as provided in the Safety Code (**Annexure - D**). The bidder will be responsible for safety of the works.

5.15 **The Bidder will make his own arrangement:** for supply of water, light & power for his works and labour camps etc.: The Bidder will make his own arrangement for supply of water, light and power for his works and labour camps etc. The department will not entertain any claim what so ever for any failure or break down etc. in supply of to the Bidder. The Bidder will supply and fix his own tested meter of the approved make but the meter will be kept in the custody of the department.

5.16 **Interference with other Bidders:** The Bidder must not interfere with other Bidders who may be employed simultaneously or otherwise by the department at the Site. He will at no time engage departmental labour or that of other Bidders without the written permission of BSCL. **Bidder is fully responsible for cause of damages of the adjoining works of different works at site and the same cost of rectification of damages shall be recovered from the Bidder as per BSCL’s instructions.**

5.17 **Regulations and bye laws:** The Bidder shall conform to the regulations, bye-laws any other statutory rules made by any local authorities or by the Government and shall protect and indemnify BSCL, against any claim

or liability arising from or based on the violation of any such laws, safety, theft, ordinance, regulation, orders, decrees etc.

5.18 **Site Order Book:** A site order book shall be kept in the departmental office at the site of the work. As far as possible all orders regarding the works are to be entered in this book. All entries therein shall be signed by the departmental officers in direct charge of the work and the Bidder or his representatives. In the important cases the Chief General Manager of BSCL will countersign the entries which the Bidders or his representative shall be bound to take note of all instructions meant for the Bidder as entered in the site order book without having to be called for separately to note them. BSCL shall submit periodically copies of the remarks of the site order book to the Chief General Manager, BSCL for record and to the Bidder for compliance and report.

5.19 **Conversion of units:** Whenever in the contract agreement dimensions and units have been expressed in F.P.S. system, the same will be converted in to metric system units by applying the standard conversion table of Indian Standard Institution so as to derive the corresponding figure arithmetically and the Bidder will have to accept the figures so derived without any claim or compensation whatsoever.

5.20 **Rights of other Bidders and persons:** If, during the progress of the work covered by this contract, it is necessary for other Bidders or persons to do work in or about the site of work, the Bidder shall afford such facilities, as BSCL may require.

5.21 **Employment of technical persons:** The Bidder shall employ or produce evidence of having in his employment of the following qualified technical person from the Institution recognized by the Government of Bihar / Govt. of Other State / Govt. of India:

Sl. No.	Personnel	Qualification	No. of Person
1	Project Manager	B.E/B.Tech/B.Sc. in Civil Engineering or equivalent with 15 Years' Experience in Construction of Sports Complex/Infrastructure works/Building Construction (5 years as Project Manager)	1
2.	Site Engineer	B.E/B.Tech/Bsc. in Civil Engineering with 10 Years Exp. (including 5	3

		years in Construction of Sports Complex/Infrastructure works/Building Construction) or Diploma Civil with 15 Years Exp. (including 10 years in Building Const.	
3	Electrical Engineer	B.E. Electrical + 5Years Exp. Or Diploma in Electrical + 10 years Exp Exposure in High mast lighting/Decorative lighting works of at least two projects.	1
4.	Quantity Surveyor	B.E/B.Tech/Bsc. in Civil Engineering with 7 Years Exp. Or Dip. Civ. + 10 years Exp.	1
5.	Architect cum Landscape planner	B.Arch/B.E/B.Tech./BSc. Civil Engineering/Bachelor in Town or Regional Planning/Landscaping with 3 Years’ Experience.	1
6.	Structural Engineer	B.E/B.Tech/Bsc. in Civil Engineering with Specialization in Structural Engineering having experience not less than 5 years.	1
7.	Soil & Material Engineer and Quality Control Engineer	B.E/B.Tech/Bsc. in Civil Engineering with 5 years’ Experience in Quality Control works	1
		Total	9
8	Operation & Maintenance period	The Contractor needs to deploy the manpower as per requirement of the Client as prescribed in the RFP	44

5.22 The above is the minimum requirement of Manpower. However contractor shall assess the actual requirement and deploy the necessary manpower. No extra cost will be paid for deployment of extra manpower if required.

5.23 The technical staff shall be got approved in writing from BSCL (whose approval may be withdrawn any time) for supervision of works and to receive direction from the Engineer of the work on behalf of the contractor. The supervisory staff of the contractor will not be changed without the approval of BSCL.

5.3 Bonus for early completion

In the event that the Project Completion Date occurs prior to the Scheduled Completion Date, the Contractor shall be entitled to receive a payment of bonus equivalent to 0.03% (zero point zero three per cent) of the Contract Price for each day by which the Project Completion Date precedes the Scheduled Completion Date, but subject to a maximum of 3% (three per cent) of the Contract Price. Provided, however, that the payment of bonus, if any, shall be made only after the issue of the Completion Certificate. For the avoidance of doubt, the Parties agree that for the purpose of determining the bonus payable hereunder, the Contract Price shall always be deemed to be the amount specified in Clause 17.1.1, and shall exclude any revision thereof for any reason.

Additional Special Conditions

1. Contractor is advised to read carefully all chapters and give complete information regarding his proposals, substantiating the same with calculations, drawings literature, with clear reference to any standards adopted (which are not mentioned in the tender), in such manner that there is no ambiguity or nothing is left to chance. All relevant information, so as to make the proposal understandable shall be given. Vague remarks and remarks like “will be given later” are not acceptable. If in the opinion of BSCL, the proposal is grossly incomplete, this will form sufficient reason for complete rejection of the tender on technical grounds.
2. Contractor shall note that this is a lump sum rate tender. The bidder shall give rate for complete work. However, his proposals are subject to scrutiny and approval for Item wise / sub Item wise progressive payments by the competent authority. He shall therefore take utmost precaution to offer very standard equipment manufactured by only reputed manufacturers (wherever the makes are specified, the same shall be offered). However, the bidder should note that after the tenders are opened, all modifications, corrections, changes should be carried out entirely to the satisfaction of BSCL at no extra cost to BSCL. The contractor shall not be allowed to change the price quoted.
3. All the equipment installed shall be thoroughly tested at the time of commissioning of the plant and all initial defects shall be rectified to the entire satisfaction of the engineer. Damaged or non-working parts shall be replaced at no extra cost to BSCL.
4. **Training of the BSCL, staff before Handling over the Equipment/Instruments.** As there is fair amount of automation specified, there will be very large number of small components, which form units of equipment. In order that the BSCL staff engaged on operations and maintenance becomes proficient in understanding and handling the equipment correctly, the contractor will have to organize training programme in the manufacturers’ shops as well as on site during actual operation of the plant. For this purpose he will have to employ suitably qualified, trained personnel to carry out this training. The training period is for 7 days after commissioning of the plant or for such extra period before commissioning in the workshops. A mutually agreed programme shall be formulated during the execution, which will be binding on the contractor.
5. **Third Party Inspection:** BSCL reserves the right to appoint any organization/ institution for checking of design, & quality & quantity checks of works during currency of the contract & no additional cost shall be payable by BSCL on this account
6. The overall development of site at which Building shall be constructed inclusive of roads, horticulture, lights and other utilities services such as water supply,

sewerage, drainage etc. shall be provided by contractor agency as per drawings approved by BSCL.

7. The Bidder shall liable for all statutory clearances inclusive from Bihar Pollution Control Board for execution and till operation period of Building.
8. Bidder shall liable to all consequences arising there upon not meeting the required parameters/ specifications of Building on any account.
9. During the Construction Period, the Contractor shall maintain, at its cost, the Project Site and the assets thereon so that the traffic and commercial worthiness and safety thereof are at no time materially inferior as compared to their condition 7 (seven) days prior to the date of this Agreement, and shall undertake the necessary repair and maintenance works for this purpose.
10. The Construction work shall be executed by the bidder strictly as per technical specification of Bihar Construction Department/CPWD. In case of ambiguity or dispute arises, CPWD specification will prevail over.
11. The bidder shall strictly abide the General Conditions of contract and Special Conditions of Contract of the RFP document. In no case, the bidder may violate the above conditions and no amendments should be made in the GCC or SCC.
12. In case of arbitration or dispute of the Contract, the Hon’ble High court of Patna, Bihar is the Jurisdiction.
13. The RFP document shall form part of Contract Agreement. The bidder should download all pages of the RFP document and must sign all pages (authorized signatory of the Contract agency) before uploading the RFP document in the www.eproc.bihar.gov.in portal

SECTION 6
CONTRACT DATA

CONTRACT DATA

Clause Reference With respect to section 4.

Items marked “N/A” do not apply in this contract.

<p>The Employer is Name: BSCL. Address: Municipal Corporation, Court Compound, Bhagalpur Name of Employer’s Representative: - Chief Executive Officer, Bhagalpur Smart City Limited, Bhagalpur</p>	<p>[Cl.1.1 of ITB of Section - 1]</p>
<p>The Engineer is: - To be Informed Later.</p>	<p>GCC Cl .16 of Article -16</p>
<p>The Dispute Review Expert will be Expert Mediator Of the Govt. of India rules.</p>	<p>[GCC Cl. 24 of Article -24]</p>
<p>The Defects Liability Period is Two Years From the date of completion of the project work.</p>	<p>[GCC Cl. 15 of Article -15]</p>
<p>The Commencement Date shall be from the issue of Letter of Notice to Proceed (NTP).</p>	<p>[GCC Cl. 10 of Article -10]</p>
<p>The Intended Completion Date for the whole of the Works is 18 months after agreement For detail refer Important Milestone and Key Time periods under Contract Section-4 (Conditions of Contract) and reproduced below: _____</p>	<p>[GCC Cl 12 of Article -12]</p>
<p>The Site is located at Bhagalpur municipal Area,</p>	<p>[[Cl.7 of ITB)</p>
<p>Bhagalpur</p>	

The name and identification number of the Contract:

is: The work includes Surveying, Geo-technical investigation, Architectural Planning & Design, Engineering, Procurement, preparation of detailed structural design & drawing, for the Development of Sandy’s Compound (total land area of 81.60 Acres approx.) after obtaining approval from competent authority including Construction of Walkways, New & existing Badminton Court Building, Open Air Theatre, Swimming Pool, Cricket Field & Drainage, Gate Complex (Entrance/Exit) including Security Guard Room, Vehicle Parking sheds, Compost pit & Plant nursery, Special Entrance/Exit gates, Toilet blocks, Development of Open Space, Multi-purpose Ground, Sculpture court, Basket Ball & Lawn Tennis Court, Renovation of Station Club building, existing Sandy’s Compound wall, Nehru Memorial, Gym Building, Cleave land memorial including Water supply & Sanitation, Sewer network, Internal & External Electrification works including High mast Lighting & street lighting facility, storm water drainage, rain water harvesting, landscaping and internal roads etc., on EPC basis (complete in all respect internal and external finish) and Operation & maintenance of Sandy’s Compound for a period of Three (03) Years and two (2) years of defect liability period .

[ITB CL 1.1]

The work shall inter alia, Include Construction of Sports Complex (Cricket/Football/Badminton), Infrastructure works, Development of parks, Landscaping works, Construction of Buildings (g +2 floors) including Civil works, Internal & External Electrical works (Street lighting, high mast lightings etc)

Plumbing & Sanitary, Water Supply & water harvesting works, etc., as specified or as directed Sewerage Networks, HVAC, Development works, Internal Roads, Firefighting, fencing, Rainwater harvesting with Green norms etc.,

The following documents also form part of the

[GCC Cl 1.0 of Article -1]

	Contract:	
	The law which applies to the Contract is the law of Union of India	[GCC Cl.25.1 of Article -25]
	The language of the Contract documents is English	[GCC Cl.25.14 of Article -25]
	Limit of subcontracting; 70% of the Initial Contract Price only for peripheral works but major works	[GCC CL 3.2 of Article – 3)
	like foundation, superstructure shall not be subcontracted unless until New and Emerging technology is proposed by the contractor which is approved by BSCL/Employer	
14.	Co-operation with the Schedule of other Contractors	[GCC Cl 3.1.7 of Article 3] May be 3.1.6 (i)
15.	The Schedule of Key Personnel	[Annexure – II of ITB of section 2)
16.	The minimum insurance cover for physical	[GCC. 18.0 of Article 17.0)

	property, injury and death is Rs.5 lakhs per occurrence with the number of occurrences limited To four. After each occurrence, contractor will pay additional premium necessary to make insurance valid for four occurrences always till Defect Liability Period of the Project.	
17.	Site investigation report.	[GCC Cl.3.1 of Article 3]
18.	The Site Possession Dates shall be 10 days after the Issue of LoA.	[GCC Cl.8.2 of Article 8]
19.	The period for submission of the programme for approval of Engineer shall be 21 days from the Issue of Letter of Acceptance.	[GCC Cl.10.13 of Article 10] 10.1.3
20.	The period between programme updates shall be 90 days	Same as above
21.	The amount to be withheld for late submission of an updated programme shall be Rs 3.00 lakhs	[GCC Cl.10.3 of Article -10]
22.	The currency of the Contract is Indian Rupees	[GCC Cl.17.2 of Article 17)
23.	The proportion of payments retained (retention money) shall be 9 % from each bills subject to a maximum of 10% of final contract price) including	[GCC Cl. 7.5.1 of Article 7]

	2% of Performance Security money).		
24.	Amount of liquidated damages for delay in completion of works For whole work: (1/2000) of the Initial Contract Price, rounded off to the nearest hundred, per day.	[GCC CL 8.7]	
25	Maximum limit of liquidated damages for delay in Completion of work.	10 per cent of the Initial Contract Price rounded off to the nearest Thousand.	[GCC Cl. 10.3.2 & 10.3.3 of Article 10)
26	Amount of Bonus for early completion of whole of the works As per GCC	[GCC Cl. 17.16 of Article 17]	
27.	The amounts of the advance payment are:	[GCC Cl 17.2 of Article 17]	
	Nature of Advance	Amount (Rs.)	Conditions to be fulfilled
	i. Mobilization (Interest bearing) – 10% of the Contract price. On submission of unconditional Bank Guarantee (to be drawn before the end of 20% of the Contract period). The contractor shall furnish part	The mobilization advance shall be released in two equal installments of 5% each.	

	<p>‘Bank Guarantee’ of 110% of amount of advance Taken as Mobilization.</p>		
<p>28.</p>	<p>Repayment of advance payment for mobilization and equipment: The advance loan shall be repaid with percentage deductions from the interim payments certified by the Engineer under the Contract. Deductions shall commence in the next Interim Payment Certificate following that in which the total of all such payments to the Contractor has reached not less than 20 percent of the Contract</p>	<p>[GCC Cl. 17.2.5 of Article 17]</p>	
	<p>Price or 6 (six) months from the date of payment of</p>		
	<p>first installment of advance whichever period concludes earlier, and shall be made at the rate of 20 per cent of the amounts of all Interim Payment Certificates until such time as the loan has been repaid, always provided that the loan shall be completely repaid prior to the expiry of the original time for completion pursuant to Clauses 8.2 and 8.4 (Condition of Contract). In case non-achievement of milestone and accordingly non-production of running bills and consequently non-recovery of mobilization advance, the part Bank Guarantee (BG) against the Mobilization advance to that</p>		

	Extent shall be forfeited.		
29.	The Securities shall be for the following minimum amounts equivalent as a percentage of the Contract Price:	[Cl. 7.1 of Article 7)	
	Performance Security for 2 per cent of contract price plus Rs. (to be decided after evaluation of the bid) as additional security in terms of ITB Clause 29.5.		
30.	The date by which "as-built" drawings (in scale as directed and in color print) in 5 sets of Hard copy (coloured) and 1 set of soft copy are required within 28 days of issue of certificate of completion of Whole or section of the work, as the case may be.	GCC CL 10.2.7 of Article 10)	
31.	The amount to be withheld for failing to supply "as built" drawings in color print by the date required is Rs 10.00 lakhs for projects up to Rs 50 crores, and additional Rs 0.15 lakhs for every Rs. 1.00 crore increment in project cost thereafter, with upper limit Of Rs 50 lakhs.	GCC CL 10.2.7 of Article 10	
32.	Contravention to the sub clause herein shall also be taken as fundamental breach of contract		

33.	The percentage to apply to the value of the work not completed representing the Employer's additional Cost for completing the Works.	GCC Cl 10.5 of Article 10)

VOLUME-II

SECTION 7

TECHNICAL SPECIFICATION

Disclaimer: *The technical specifications provided herein for Bhagalpur Smart City Limited) are as per NBC, IS 456, IS 800 and other relevant IS codes. In the absence of any definite provisions on any particular issue in the aforesaid specifications, reference may be made to the specifications of Smart City Mission policy of Government of Bihar/India which provides the specifications of various items of works which may be taken as minimum and any item of lower specifications shall not be allowed. The Government of Bihar is committed to provide specification in line with the aforementioned policy, if not better, as indicated in the technical specifications given herein. All the material utilized in this building are to be complied with specification of Indian Green Building Council (IGBC) Green Data Center.*

The successful bidder shall carry out appropriate geo-technical surveys and investigations and thereafter, provide proposed foundation design to be used on approval. They are also required to prepare architectural planning, design and development for the entire area. The Construction of sports complex (cricket/badminton etc.,) Infrastructure works, open air theatre, swimming pool, renovation works, utility services, internal & external electrification works etc., as specified by the employer. The contractor is supposed to get prepared structural design and drawings from experienced Structural designer of National / International repute. The design must conform to the relevant building codes & specifications related to earth quake resistant design of buildings for respective seismic zones. The designs and drawings so prepared have to be got approved from Indian Institute of Technology / National Institute of Technology, /Govt. Engineering College at their own cost.

1. Foundation & Plinth

Foundation: The foundations for building shall be either pile foundation or Isolated Column footing or Raft footing or Combined Column cum Raft footing, depending on the geo–technical report of soil strata, height of the building and the opinion of the design expert in Indian Institute of Technology / National Institute of Technology, /Govt. Engineering College. The RCC work in foundation, unless otherwise stated, shall be of M25 or higher grade.

Plinth: The Plinth beam in foundation shall be in RCC work with M25 Grade concrete and high corrosion resistance Fe 500/550 TMT bars conforming to IS 1786:2008.

Plinth filling: The plinth shall be filled with excavated soil (excluding clayey/black cotton soil) or new soil in layers not exceeding 15 cm or river/ local sand used for plinth filling eg. Ganga sand, etc (including watering/ ramming for proper compaction).

2. Super Structure

Superstructure: The superstructure for the building under Smart City Mission shall be either RCC Framed structure or any structure conforming to new and Emerging Technology approved by Building Material and

Technology Promotion Council (BMTPC), Ministry of Housing and Urban Poverty

Alleviation, Government of India. The RCC work in superstructure, unless otherwise stated shall be in M25 or higher grade for G+5 building, G+6 and G+8 building.

Lintel: As the building is to be earthquake proof, R.C.C band at lintel level shall be provided. The thickness of the band will be 120mm except for the openings where it will be 150mm extending suitably on the both sides of the opening to a thickness of not less than 200mm wherever necessary (i.e. where anchoring in column is not there).

Chajja: The Chajja will be in R.C.C of M-25 grade in G+5 Building and M-25 grade in G+6 and G+8 building. The chajja will be projected 45cm (cantilever projection) and the average thickness measured at middle will be 63mm.

3. Water proofing (APP) on roof slab and chajjas

Atactic Poly-propylene Polymer (APP) modified prefabricated five layer 3mm thick water proofing membrane, black finished, reinforced with non-woven polyester matt consisting of a coat of bitumen primer for bitumen membrane @ 0.40 liter/ sqm shall be provided on roof slab and chajjas for water proofing.

4. Brick work in foundation and superstructure

4.1 In Foundation/Plinth

Red brick masonry work (brick conforming to 75 A) of required thickness as per design shall be used in foundation in 1:6 cement mortar (with Ordinary Portland Cement (OPC) Grade 43/53 Portland Slag cement). The brick work in external walls shall be laid over sand filling followed by PCC in 1:4:8 of 100 mm thick. The depth of this wall in plinth (up to plinth band level) shall be got approved by Engineer-in-charge; however, this depth shall be 450 mm unless until stated otherwise. Alternately, R.C.C band at ground level in M-20 concrete can be provided over which the red brick masonry work can be done up to plinth level.

4.2 In superstructure (including parapet wall)

Fly Ash brick masonry work (Bricks conforming to IS 12894 of 2004) shall be used in outer walls of superstructure in 1:6 cement mortar (with Ordinary Portland Cement (OPC) Grade 43/53 Portland Slag cement). The outer wall shall be of full brick size (230 mm).

The inner wall shall be in pre-cast concrete hollow blocks (150/100 mm), conforming to IS 2185 Part-I: 2005. 6 mm dia. mild steel Reinforcement shall be provided at every 4th course (embedded in cement mortar or otherwise) in the pre-cast concrete hollow block masonry work.

The parapet wall over roof slab on the periphery will be in full brick size (230 mm) laid in 1:4 cement mortar (with Ordinary Portland Cement (OPC) Grade 43/53 Portland Slag cement).

5. Plastering work (Internal and external)

5.1 Internal wall plaster:

12mm thick cement plaster in 1:6 cement mortar (with Ordinary Portland Cement (OPC) Grade 43/53 Portland Slag cement) with clean coarse sand of FM 1.5, in single layer.

5.2 External wall plaster:

20 mm thick cement plaster in 1:4 cement mortar (with Ordinary Portland Cement (OPC) Grade 43/53 Portland Slag cement) with clean coarse sand of FM 1.5, in single layer.

Cement punning shall be provided of 1.5mm thick up to plinth band level in all building immediately after external plaster.

5.3 Ceiling plaster:

6 mm thick cement plaster in 1:3 cement mortar (with Ordinary Portland Cement (OPC) Grade 43/53 Portland Slag cement) with clean coarse sand of FM 1.5, in single layer.

5.4 Plaster in Chajjas:

6 mm thick cement plaster in 1:3 cement mortar (with Ordinary Portland Cement (OPC) Grade 43/53 Portland Slag cement) with clean coarse sand of FM 1.5, in single layer with suitable rain cuts along three edges of the chajja. The rain cuts should be prepared with proper plastering (beat work) instead of simply pointing work.

6. Cement punning

Cement punning shall be done over slab (wardrobe shelf of rooms and slabs below kitchen deck slab) which will be 1.5 mm thick with Ordinary Portland Cement (OPC) Grade 43/53 Portland Slag cement).

7. Plain Cement Concrete:

Plain cement concrete or mud mat of 1:4:8 (one OPC cement of grade 53, four sand of FM 2.5-3.0, eight aggregates of metal grade III: 50-25 mm) shall be used below footing, wherever required.

Plain cement concrete of 1:3:6 (one OPC cement of grade 53, three sand of FM 2.5-3.0, six aggregates of metal grade III: 50-25 mm) shall be used below flooring, below bottom reinforced concrete slab of septic tank etc, wherever required as directed by EIC.

8. Reinforcement

Fe500/550 conforming to IS 1786:2008 High corrosion resistant -TMT Bars of TISCON (TATA), SAIL, JINDAL, VIZAG (RINL) or Electro-steel or equivalent.

9. Flooring, Skirting and Dado Sub-Base for Flooring in Ground floor

In ground floor before flooring 75 mm local sand shall be filled and properly rammed after providing adequate water OMC for proper compaction. Over this sand layer, one flat brick soling with 75A bricks shall be provided and the joints filled with local sand. Over the flat brick soling 100 mm thick PCC 1:3:6 of M10 Grade shall be provided which will form the sub-base for flooring in the ground floor.

9.1 Floor Tiles of bedroom, hall, living room, balcony and passage/ lobby

Vitrified floor tiles 600mm X 600mm X 8mm thick conforming to IS: 15622/ISO 13006, of approved make, colour and shades, laid on 20mm thick 1:4 cement mortar (1 cement : 4 coarse sand) including pointing the joints with white cement mixed with matching pigment etc., shall be provided in floor of bedroom, hall, living room, balcony and passage/ lobby. Skirting of similar material of 150 mm height shall be provided.

10.0 APP over sunken slab in Bath/ Toilet

Atactic Poly-propylene Polymer (APP) modified prefabricated five layer 3mm thick water proofing membrane, black finished, reinforced with non-woven polyester matt consisting of a coat of bitumen primer for bitumen membrane @ 0.40 liter/ sqm needs to be provided in Sunk slab of Bath/ Toilet for water proofing.

Fill Material- Before laying Floor tiles in bath/toilet the space between sunken slab and floor need to be filled by lightweight materials with negligible pores such as fly ash etc.

11.0 Floor of Kitchen and Bath/ Toilet

Ceramic antiskid tiles in floor of size 300mm X 300mm X 6mm thick conforming to IS : 15622, in approved make, colour, shade laid on 20 mm thick Cement Mortar 1:4 (1 cement : 4 coarse sand) including pointing the joints with white cement mixed with matching pigment etc., shall be provided in floor of Kitchen and Bath/ Toilet.

12.0 Dado/ Wall Tile Work in Kitchen and Bath/ Toilet

In Kitchen- The skirting will be 150mm high and will be of the same material of which the floor has been provided in the kitchen. In dado, ceramic glazed tiles of size 300mmX300mm X 6mm thick conforming to IS: 15622, in approved make, colour, shade laid on 12 mm thick Cement Mortar 1:3 (1 cement: /3 coarse sand) including pointing the joints with white cement mixed with matching pigment etc., complete shall be provided up to a height of 600mm above kitchen counter top all along the adjacent wall of the kitchen counter top including window sill and window side wherever applicable.

In Bath/ Toilet- In dado of Bath/ Toilet, ceramic glazed tiles of size 300mmX300mm X 6mm thick conforming to IS: 15622, in approved make, colour, shade laid on 12 mm thick Cement Mortar 1:3 (1 cement: /3 coarse sand) including pointing the joints with white cement mixed with matching pigment etc., complete shall be provided up to a height of 2 m from floor level in all walls of bath/toilet.

13.0 Floor of Staircase

Kota stone of minimum thickness 25mm shall be used for flooring in risers and treads of steps, skirting and/ or pillar laid in minimum 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the kota stone including rubbing and polishing complete. Single stone is to be used for riser and treads of steps and the size of Kota stone should be chosen such there should be no horizontal joints in the skirting of the stairs. The height of the skirting should be such that from the outer edge of the tread the skirting should be at least 150mm in height. The upper edge of the skirting should be in straight line.

14.0 Doors and Door Frames

14.1 Pressed steel door frames conforming to IS: 4351, manufactured from commercial mild steel sheet of 1.60 mm thickness, including hinges, jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50x25 mm, or base ties of 1.60 mm, pressed mild steel welded or rigidly fixed together by mechanical means, including M.S. pressed butt hinges 2.5 mm thick with mortar guards, lock strike plate and shock absorbers as specified and applying a coat of approved steel primer after pre-treatment of the surface all complete. Two coats of synthetic enamel paint of approved shade and make over steel door frame surface after cleaning the surface thoroughly shall be provided. The frame shall be fixed with adjustable lugs with split end tail to each jamb.

14.2 External Doors: Minimum 30mm thick solid core type non-decorative single leaf flush shutter conforming to IS 2202-1 (1999) with black board core blended with high quality phenol formaldehyde synthetic resin both side commercial veneers of standard make for external doors.

14.3 Internal Doors: Minimum 25mm thick flush door shutters non decorative type, conforming to IS : 2202 (Part 1), interior grade, commercial

type, core of block board construction with frame of first class hard wood and well matched commercial ply veneering with vertical grains, cross bands and face veneers on both faces of shutters. The doors in the bath/ toilet will be provided with aluminum metal sheet all over its face in inner side. There will be no painting on the inner side of the bath/ toilet door however, two coats of primer with anti-termites solution mixed suitable shall be provided.

14.4 Both external and internal doors will include hinges, should be all complete with ISI Mark Powder coated (minimum thickness of powder coating 50 micron). Aluminum Door fittings namely Tower Bolt: 150 x 10 mm, Sliding Pad Bolt: 250 x 16mm, Handle: 125 mm and Floor Door Stopper: Single Rubber Stopper.

15.0 Painting: Two coats of synthetic enamel paint over one coat of wood pink primer of approved shade and make over new wooden surface after cleaning and smoothening of wooden surface with sand papers of appropriate numbers all complete.

16.0 Fire Door and Door Frame in Fire Staircase: Fire resistant door frame shall be provided in fire staircase of section 50 x 60 mm on horizontal side 35 x 60 mm on vertical sides having built in rebate made out of 1.6 mm thick GI sheet (Zinc coating not less than 120gm/m²) suitable for mounting 120 min Fire Rated Glazed Door Shutters. The frame shall be filled with Mineral wool Insulation having density min 96Kg/m³. The frame will have a provision of G.I. Anchor fasteners 14 no's (5 each on vertical style & 4 on horizontal style of size M10 x 80) suitable for fixing in the opening along with Factory made Template for SS Ball Bearing Hinges of Size 100x89x3mm for fixing of fire rated glazed shutter. The frame shall be finished with an approved fire resistant primer or Powder coating of not less than 30 micron in desired shade.

16.1 : 60 mm thick glazed fire resistant door shutters in fire staircase of 120 min fire rating conforming to IS:3614 (Part II) or EN1634-1:1999, tested and certified as per laboratory approved by Engineer-in-charge, with suitable mounting on door frame, consisting of vertical styles, top rail & side rail 60 mm x 60 mm wide and bottom rail of 110 mm x 60 mm made out of 1.6mm thick G.I. sheet (zinc coating not less than 120gm/m²) duly filled mineral wool insulation having density min 96 kg/m³ and fixing with necessary stainless steel ball bearing hinges of size 100x89x3mm of approved make, including applying a coat of approved fire resistant primer or powder coating not less than 30 micron.

17.0 Windows, Ventilator and Associated Grill

Aluminum work for windows and ventilators with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of approved dia and size; including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/neoprene

gasket etc. Aluminum sections shall be smooth, rust free, straight, mitered and jointed mechanically wherever required including cleat angle, Aluminum snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. Including Glazing, paneling and dash fasteners. Powder coated Aluminum sections shall be used (minimum thickness of powder coating 50 micron) with float glass panes of minimum 4.0 mm thickness. The aluminum plate wherever used of 1.5mm thickness.

M.S. grill made of 20mm x 6mm M.S. flat or 10mm square bar with minimum 18 Kg per sqm as per approved drawing, properly fabricated with joints continuous fillet welded and finished smooth or as approved by Engineer In charge for windows & ventilator. Two coats of synthetic enamel paint of approved shade and make over a coat of red oxide zinc chromate primer after cleaning the surface thoroughly all complete.

18.0 Railing in Balcony and Staircase

Railing in Balcony and Staircase will comprise of Steel work welded in built up sections of height not less than 1.2m with minimum 18 Kg per sqm 16 gauge properly fixed and applying two coats of synthetic enamel paint over a priming coat of red oxide zinc chromate primer. Over the steel work circular pipe will be welded which will be also painted as the steel work are painted. Railing work shall conform to IS 1239-1 (2004)

19.0 Kitchen Countertop and Shelf

Countertop- The kitchen countertop base slab shall be constructed with RCC 1:1.5:3 M-20 concrete with 6mm and down stone chips and 6mm dia MS Bars. The Thickness of the slab will be 50 mm. Over this slab, 600mm x 25mm thick Kota stone shall be provided. The stainless steel sink will be adjusted suitably and shall be in level flushed with the kitchen finished countertop so that the water on the kitchen countertop finds way smoothly to the sink. Kota Stone shall also be provided in the core of the kitchen slab, flushed with the outer edge of the horizontal slab. The Kota stone should be fixed with cement mortar 1:3. Shelf Below Kitchen Platform - The space below the kitchen platform shall be constructed with RCC 1:1.5:3 M-20 concrete with 6mm and down stone chips and 6mm dia MS Bars suitably divided in two parts in order to accommodate gas cylinder in one part. In the remaining part between the kitchen platform and the floor one horizontal RCC slab of 50mm thickness shall be provided for accommodating kitchen utensils and other kitchenware. This slab needs to be finished with 1:3 cement mortar and 1.5 mm thick cement punning. The lowest enclosure of the shelf shall be 75mm above floor level.

Shelf above Lintel in kitchen- The Shelf above lintel level of 63mm thickness which shall be 60cm projection along three sides of wall shall be constructed with RCC 1:1.5:3 M-20 concrete with 6mm and down stone chips and 6mm dia MS Bars. The slabs need to be finished with 1:3 cement

plaster and 1.5mm thick punning over it. The color wash of the room shall be applied on this slab also after finishing with plaster etc.

20.0 Shelf in Bedroom and Drawing Hall

The Shelf in bedroom and drawing hall shall be of 63mm thickness shall be RCC 1:1.5:3 M-20 concrete with 6mm and down stone chips and 6mm dia MS Bars suitably partitioned so as to hang coats, sarees, etc in one upper part and the remaining portion can be sub divided to keep folded clothes, books, etc. A hanging rod shall be provided for hanging coat, sarees etc. All the slabs needs to be finished with 1:3 cement plaster with 1.5mm thick punning on its top and front face. The lowest enclosure of the shelf shall be 75mm above floor level.

The Shelf above lintel level shall be constructed of 75mm thickness and 750mm projected in all sides of wall in bedroom which shall be constructed in RCC 1:1.5:3 M-20 concrete with 6mm and down stone chips and 6mm dia MS Bars. All the slab needs to be finished with 1:3 cement plaster with 1.5mm thick punning and 1.5mm thick punning over it. The color wash of the room shall be applied on this slab also after finishing with plaster etc.

21.0 Terrace and Parapet Wall

Staircase tower shall vertically extend as per the typical drawing to have sufficient head room which will be covered with RCC slab of thickness as per design with minimum M-20 concrete. APP water proofing will be applied over the staircase roof also. The staircase tower roof slab will necessarily have to be projected so that the water cut can be provided in the projected portion which will avoid rain water flowing from the roof top finding way directly through walls. The vertical walls of the staircase tower will be 230mm thick constructed by Fly ash brick.

Wall all around the roof in parapet will be 1m high 230 mm thick full brick/ concrete wall. The parapet wall will be plaster from inside 1:4 cm and 1:3 cm plaster on top. 1.5mm cement punning will be done on the flat top portion of the parapet wall.

All terrace and parapet walls shall be finished with Premium exterior acrylic smooth paint silicone additives. (Two or more coats applied @ 1.43 ltr/ 10 sqm over priming coat of cement primer applied @ 2.20 kg/ 10 sqm).

22.0 Painting

Internal walls and ceiling- Painting with two coats of interior acrylic emulsion paint of approved shade (however, for ceiling only white color paint shall be used) and make over surface smoothed after applying Birla putty or equivalent of any other make of 2mm thickness and providing over it a primer coat of cement primer. Exterior walls with Premium exterior acrylic smooth paint silicone additives. (Two or more coats applied @ 1.43 ltr/ 10 sqm over priming coat of cement primer applied @ 2.20 kg/ 10 sqm)

23.0 Wooden Work- Two coats of synthetic enamel paint over one coat of wood pink primer of approved shade and make over new wooden surface after cleaning and smoothening of wooden surface with sand papers of appropriate numbers all complete.

Steel Surface - two coats of synthetic enamel paint of approved shade and make over steel surface after cleaning the surface thoroughly all complete.

24.0 Internal Sanitary and Collecting Chamber India

Water Closet (I.W.C)

Vitreous white glazed earthen ware I.W.C. conforming to IS 2556 Part-III of approved make with attached footrest (Preferably Orrisa Squatting Pan in white color of size 580x440x300 mm) with 100mm H.C.I. 'P' or 'S' trap and not less than 5 Liter low level plastic cistern of approved make in white color with brass stop cock (weight 50gm or more), PVC connection pipe etc all associated fittings to complete the job which can be utilized by the residents thereafter.

25.0 Wash Basin

Vitreous white glazed earthen ware wash hand basin of minimum size 450mm x 300mm of approved make conforming to IS 2556 Part IV of flat back of one piece construction including combined overflow basin single tap hole of size 28 sqm or 30mm rounded. The basin shall have circular waste hole or 5sqcm slot type overflow supported on painted C.I. or R.S. cantilever brackets conforming to IS 775 (use of MS angle or Tee section as bracket not permitted) with 32mm C.I. brass waste, 15mm dia C.I. body brass spindle stop cock of approved quality and weight not less than 330 grams, 32mm P.V.C. waste pipe 750mm long with brass coupling at one end all to be put to use for residents. A suitable brass bib cock with chromium coated not less than 400gms should be mounted on the wash basin.

26.0 Drainage of Domestic Water

Sewage disposal from WC & waste water from kitchen & Bathroom has to be taken out with suitable dia PVC pipe, “S/P” trap & fittings including steel/ strainers as required. It shall be responsibility of contractor to make essential arrangements for disposal of rain water from terrace (roof slab) by providing proper gentle slope in the roof/ terrace slab and by providing appropriate PVC/uPVC pipes of size between 75 to 100mm dia conforming to IS 13592 and fittings conforming to IS 13591, free from cracks, flaws and defects and shall be able to withstand the water pressure all complete. The connection between two pipes shall be made with approved sealant and the joint should be leak proof. The PVC pipe should be fastened to the wall with suitable fasteners at desired location as per IS code in this regard. All the roof top water should be taken to the nearby rain water harvesting collection pit so that the water so collected can be gainfully utilized in recharging the water table.

27.0 Miscellaneous Items to be put in the Dwelling Units

Following items shall be provided by the contractor in each Dwelling Unit:-

- a) C.P. brass towel rail 600mm long and 20mm dia with two C.P brass bracket coated. The rail shall be coated with chromium plated of thickness not less than grade no. II of IS 4827.
- b) C.P. brass soap dish container medium quality with screw and hinges etc.
- c) C.P Brass towel ring of dia 175mm and thickness not less than 8mm.
- d) Stainless Steel A ISI 304 (18/8) Kitchen Sink (Inner dimension 550 x 400mm, depth 200mm) shall be provided in Kitchen with compatible Stainless steel drain board (min. thickness 1 mm) as per IS : 13983 with C.I. brackets and stainless steel plug 40 mm to be placed flushed with kitchen slab. The gap between board and platform/wall shall be finished with white/matching cement.

28.0 Other Attachments related to PHE works

Male ended 15mm dia brass bib cock shall be provided of approved quality (Wt. not less than 400gms.) with extra socket all complete; One for Bathing purposes in the bathroom and one near I.W.C and one for Kitchen sink (This does not include the tower bib cock which will be put on the wash basin).

Duct portion up to plinth level shall be constructed as collecting chamber and covered with flag stone.

The above list may not be complete and suitable additions may be suggested with contractor has to comply with.

29.0 Internal Water Supply

The internal water supply will be through PVC pipes (except for toilet where uPVC shall be used with fittings of specified dia including laying, fixing, cutting, jointing, painting etc for vent overflow, waste water pipeline etc. The pipe and fitting shall conform to series IV of IS 4985-1978 PVC pipes and fittings (Bend, Tees, Unions, reducers, etc) shall be free from cracks, flaws, defects and shall be able to withstand requisite pressure. 15mm CP brass bib cock not less than 400 gm with 15mm dia UPVC pipe. The water supply pipe connecting various floors should be 25 mm UPVC pipe. The distribution pipelines in various floors should be done with 20mm dia pipes unless until directed otherwise. The spacing between clamps for internal pipes shall be around 700mm for horizontal runs and 1000mm for vertical runs.

Construction/ Installation of RCC water tank/ polyethylene water storage tank(s), ISI: 12701 marked as approved by Engineer in charge on roof of every building. The capacity of the tank should be computed as per latest CPHEEO Manual for each Dwelling Unit. RCC water tank should

have proper manhole (with CI cover) and flushing hole to dispose of water at the time of cleaning. Proper arrangement for a person to enter the water tank (for Cleaning shall be made). The RCC tank, if constructed, should be properly plastered from within by 20mm 1:3 cement mortar plaster with suitable waterproofing agent with 2mm thick cement punning on all the walls and bottom slab.

All other fitting and installations required for healthy living the residents in line with the Affordable Housing Policy need to be provided by the contractor at their cost if directed.

Although stated earlier, it is reminded that there should be 4 water points in each dwelling unit- 2 in bath room (1 near WC and 1 for bathing purpose), 1 in kitchen and 1 in the basin.

Gun metal full way valve with each Overhead tank shall be provided.

Unions, non- return valves and other fittings are to be provided as per requirement for ease of operation and maintenance.

The contractor will be wholly and solely responsible for providing house service connection joining the external pipeline with individual dwelling units of each block.

30. Internal Electrification and Panel Room

30.1 : 5 nos. light points, 1 no tube light point, 2 nos. fan points and 4 nos. Plug socket points, all of 5 Amp in each dwelling unit all complete with Piano Type switch and socket.

30.2 15 Amp Plug Socket Point with fittings 2 Nos (1 for Kitchen and 1 for Hall), Telephone socket and T.V antenna socket in each dwelling unit.

30.3 pin ceiling rose on the junction box at suitable location needs to be in all building blocks

31. **Ceiling Fan and Fan Regulator-** 1200mm Sweep, double ball bearing, 2 canopy ceiling fan shall be provided along with electronic step mini fan regulator in each dwelling unit.
32. Bulb and Batten/ Angle holder- LED Bulbs of minimum 9/12W shall be provided at suitable locations along with batten/ angle holder all the building blocks.
33. Electronic Call bell shall be provided for each dwelling unit.
34. In addition, one light point shall be provided outside the main door of each DU.
35. 1.5 sq. mm. stranded copper wiring with concealed PVC conduit pipe.
36. 16 Amp. M.C.B. including required size of Switch Board.

37. 2+4 way MCB 240 Volts SPN MCB-1 no for each DU

38. 6- 32 A SP MCB 240 volts, 'C' curve-2 nos for each DU

39. 40 A SP MCB 240 volts, 'D' curve-1 no for each DU

The internal as well as external wiring in the houses constructed under Smart City Mission will be fully concealed.

All material should be conforming to I.S.I. standard and relevant IS Codes and before using the same it shall be approved by Employers Representative.

4 nos. plate earthing with necessary fittings/ wiring all complete for every building shall be provided in each building.

Lightening conductor with all accessories shall also be provided as per relevant norms. Meter room should be constructed separately.

Contractor shall also provide all electrical works up to meter board Panel.

Suitable Illumination at the following places in the building also will be the responsibility of the contractor:

- iv. Staircase at Suitable landings
- v. Roof at suitable place
- vi. Near Common Meter Panel
- vii. Back of the building

All other fitting, installations and wiring required for healthy living the residents in line with the Affordable Housing Policy need to be provided by the contractor at their cost if directed.

40.0 Fan Hook

Fan hooks of 16mm dia M.S. bar & suitable length, bent to required size and shape, placed in position and fixed in the R.C.C. slab/beam at the time of casting.

41.0 Roof Top Rain Water Harvesting arrangement (including recharging pit)

Rain water harvesting system associated with 80-100m deep, 100-150 mm dia tube well (extending up to fracture zone/ GW aquifer), recharge pit of length and width varying between 5-7 mt and depth about 6 meters with five layers of coarse sand & gravels up to natural ground level with stainless steel wire mesh suitably tied on the top of 10-15 cm and Rain Water Harvesting recharge Pit (As per Typical Drawing) for each block. Before the recharge pit, an inspection chamber (Pre-chamber) shall be constructed, where the water will be retained for some time before letting into the recharge pit. Water will be brought from the roof top catchment, first to the pre-chamber and then to the recharge pit through 75mm PVC pipe.

For designing the rainwater harvesting pit, the manual of CPWD on Rain water harvesting has to be referred to/ followed. The Ground Water Directorate of Water Resources Department, Government. Of Jharkhand has also brought out a booklet on Rain Water Harvesting which can be obtained from them. Their email id is- dirgwdran-wrd-jhr@nic.in).

42.0 Building Elevation

Building elevation shall be strictly in accordance with the elevation details shown in approved execution drawing.

43.0 Expansion Joint

To be constructed as per relevant I.S. code in this regard.

44.0 Internal Road Work

The Cement Concrete road will be 200mm thick M-25 Concrete with proper camber laid over lean concrete of 100mm thick M-15 with extra 300 mm on each side of the road. Lean concrete shall be laid on 150 mm sand filling. The width of the road ideally should be 4.5m but may increase as per the site condition. For details of footpath, drains along the road, etc,

45.0 Sewer Drain

Manhole- Brick masonry manhole chamber 800x900mm, R.C.C. Slab top in 1:1.5:3 concrete mix

P.C.C- 150 mm thick (P.C.C. 1:3:6).

Pipe- 150mm Dia, 225mm Dia & 300mm Dia RCC Hume Pipe including fitting accessories.

The house service connection between individual dwelling units and the sewer drain as well as the sewer drain and main truck drain will be the responsibility of the contractor.

46.0 Landscaping/ Green Space/ Park (Must be 10% of the total project area at each site)

i) Soil filling -Good Earth + cow dung / dump manure.

46.1 Plantation -Doob grass, Hedges & Furns, Adansonia digitata (Kalp vricksh), Bauhinia Acuminata shrub in earthen Pot, etc all complete on fine dressed ground.

46.2 Making Brick Side Edging, Lawn Turf etc all complete.

47.0 Under Ground Water Tank/Sump Well Including Pumping Arrangement

47.1 R.C.C. M-25 or more as per approved design with special water proofing.

47.2 150 mm thick (P.C.C. 1:4:8).

47.3 Crushed Stone Dust of Sand/Moorum filling around the water tank in case of clayey soils to avoid pressure on the tank due to expansion of soils.

47.4 The capacity of Sump should be computed as per latest revision of CPHEEO Manual each Dwelling Unit.

48.0 Compound Fencing and Gate

Barbed Wire Fencing- Fencing with R.C.C. post of mix 1:1.5:3 and 2m height placed at required distance, embedded in cement concrete blocks, every 15th post, last but one end post and corner post shall be struted on both sides and end post one side only, provided with horizontal lines and two diagonals of barbed wire weighing 9.38 kg per 100 meters (minimum), between the two posts fitted and fixed with G.I. staples on wooden plugs or G.I. binding wire tied to 6 mm bar nibs fixed while casting the post. With G.I. barbed wire.

GATE- Supplying, fitting & fixing 20 gauge G.C.I sheet gate of suitable width fitted on M.S Angle frame of size 60x60x6 mm including cost of fabrication, providing necessary locking arrangement with haskal and domny duly fixed in R.C.C. M-200 with normal mix of (1:1.5:3) in column of required size with approved quality of stone chips 20mm to 6mm size graded and clean coarse sand of F.M. 2.5 to 3, applying two coats of synthetic enamel paint over a priming red lead paint over steel work and two coats of exterior quality acrylic paint of approved shade over a coat of cement primer including 19mm thick water proof plaster over R.C.C column.

49.0 Septic Tank

R.C.C septic tank to cater to the needs of all residents shall be designed by the contractor as per CPHEEO Manual/ IS 2470 and got approved along with the building designs. The number of septic tanks and the locations will

be site specific has to be got approved along with the building designs for which the computation needs to be provided by the contractor.

A suitable covered soak pit attached with every septic tank shall also be constructed by the contractor.

50.0 Tube Well and Pump House

Attention of Contractor: It is brought to the knowledge of the contractor that the tube well and pump house is to be constructed in such a way if piped water supply is not available the tube well is capable of meeting the domestic water needs however related details but not limited to is provided below.

Successful drilling of perfectly vertical bore hole of a diameter suitable to receive 150mm nominal diameter casing pipe up to desired depth to achieve required yield below ground level for transporting, lowering and fixing of 150mm nominal diameter G.I. casing pipe inside the bore hole including all works pertaining to drilling such as transportation, installation and removal of drilling machine, etc. all complete.

I.S.I. Marked G.I. Casing pipe (plain) medium class in 4 to 7 meters or required length one end fitted with socket as per I.S. 1239 (Part-2) 1992 with IVth revision (Up-to date amendments)

Conducting yield test or development of tube-well by operating the pumping set continuously for a desired time interval as per the direction of Engineer in charge including all complete.

Making hydrant pillar work with bricks of required crushing strength not less than 25kg/sq.cm in cement mortar 1:4 including 10cm thick coping 1:2:4 (stone aggregate, 12.5mm nominal size) rendered smooth with neat cement and plastered with 12mm cement mortar 1:4 including finishing with floating coat of neat cement over 15cm thick foundation concrete 1:5:10 (stone aggregate 40mm nominal size) including earth work and disposal of surplus earth complete as per standard design.

Submersible pump of suitable HP 12 stages having discharge 300 ltr. / Min. as per I.S.I. Specification with 4 Sq. mm Cable wire and panel board with starter suitable for above 5 HP pumps shall be provided.

Mono block pump up to 5 HP as per I.S.I. Specification with 4 Sqmm Cable wire and panel board with starter suitable for above 5 HP pumps. As per site requirement shall be provided.

51.0 External Electrification

External electrification work shall be suitably designed and provided to cater the requirements of all the dwelling units.

The contractor has to co-ordinate and follow-up with concerned BBVNL\Applicable local authority for obtaining necessary sanction towards

the scheme. The scheme so sanctioned should be inclusive of required specification layer and other drawings etc. complete as per requirement.

All the respective charges to be paid to BSEB/BBVNL like strengthening, supervision charges etc. outside the transformer to be installed by contractor shall be borne by implementing agency however, the contractor shall facilitate and carry out the liaising work for getting demand notice and supporting documents along with approvals from BSEB/BBVNL. The contractor take note of this and they should not load the same unnecessarily in the price quoted for the work under consideration.

The details scope of work related to aforementioned external

Electrification may include (but not limited to) the following:-

- 51.1 Preparing & submission of 3 set of drawings after carrying as of survey & getting approval from Supervisor.
- 51.2 Obtaining necessary permission in respect of road/soil/footpath cutting from the external agencies namely PWD, RCD etc. as the case may be.
- 51.3 Preparation & submission of good for construction drawings.
- 51.4 The agency shall be responsible for submission of all documents to electrical inspection authority and other local body towards the completion of entire work at their own cost, failing which the work may not be treated complete.
- 51.5 Charging permission of the installation.
- 51.6 Inspection report of the various equipment and material required for external electrification.
- 51.7 The approval of Chief Electrical Inspector shall be taken by the contractor for installation of transformer and other equipment.
- 51.8 Arranging pre & post state wise & final testing and commissioning of the Installation from BBVNL/Applicable local authority and electrical inspector etc as required including any shutdowns if required.
- 51.9 All papers/required documents/drawings to be submitted by the bidder to BBVNL/Applicable Local Authority is to be submitted first to implementing agency and after taking their approval only, the same can be submitted BBVNL/Applicable Local authority.

52.0 Parking

Providing and laying 60mm thick factory made cement concrete interlocking paver block of M -30 grade made by block making machine with strong vibratory compaction, of approved size, design & shape, laid in required colour and pattern over and including 50mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete.

The paver block mentioned above shall be laid above random rubble masonry base properly compacted.

Please note that as per Bihar Building Bye- Laws for affordable housing, 20% of the total dwelling unit shall be provided with car parking and remaining 80% shall be two wheeler parking.

53.0 Street Lighting

Solar 30 W LED Street Light System including 30 W with inbuilt charge controller and dusk to dawn controller LED OSRAM or equivalent. Pole of M.S Material with powder coating and 6m height. Battery 12 V/ 75 A-h, suitable for 2 days autonomy/ service. Solar Panel 75 WP (MNRE approved with ISO 9001:2008 Certified). Battery with automatic Dusk-down on-off system.

54.0 Lifts

Bihar Building Bye-laws makes provision of Lifts mandatorily in G+4 buildings or in buildings of height 12 m and above.

The number, type and capacity of lift shall be in accordance with Part VIII, Building services, Section-5, Lift, elevators and escalators in National Building Code (NBC) of India, 2016.

Out of the total number of lifts provided in accordance with NBC, one stretcher lift shall be mandatory for building more than 6 stories high.

The provision and make of lift has to be also got approved by the IIT/NIT / Govt. Engineering College as mentioned in the Bid documents while getting other designs approved.

55.0 Fire Fighting System

All high rise buildings (15m or above height, irrespective of its occupancy) should be equipped with Fire Fighting System as per provisions indicated by NBC and that will be applicable in affordable housing buildings also. The building design shall comply with the applicable provisions (including Fire Exit Staircase) of Fire and Life safety as mentioned in National Building Code of India 2016, Volume-I, Part-IV –Fire and Life Safety and bidder shall submit compliance report of these provisions in their proposal.

Adequate nos. of detectors (smoke/optical), Sprinkler, Fire Extinguisher, Hose Reel, Wet/ Dry Riser, down comer, Yard Hydrant and others shall be

provided in every high rise building and shall be connected with Fire water tank of required capacity at the top of the roof.

The High Rise building can’t be handed over by the contractor if the firefighting system is not constructed and put to place as per National Building code/State Fire safety regulation/ norms.

56.0 Details of materials and specifications for outdoor works

S. No.	Materials	Specifications
1.	Entrance plaza	
	Brickwork structure	Class 1 Brick as /availability
	Paving: Red sandstone Dholpur pink sandstone Brick pavers PCC Kerb stone Parking tiles	36 mm thick rough cut as per desired size 36 mm thick rough cut as per desired size As per Design As per Design Grass Pavers / As per Design
	Cladding: Red sandstone Pink sandstone Beige granite Cladding tile Coping: Granite Sandstone PCC	20 mm thick as /design 20 mm thick as/design 12 mm thick As/ market 20 mm thick 50 mm thick 75mm thick as/availability
2.	Food court, craft plaza and Walkway	
	Walkway1: Vehicular cum Cycle Track (4.5m wide) Paving:	36 mm thick rough cut as per desired size

S. No.	Materials	Specifications
	Concrete Paver Block/ Red sandstone Dholpur pink sandstone Kerb Stone at edges Walkway2: Joggers Track (2.4m wide) Rammed Murram Finish Kerb Stone at edges Walkway3: Walkways (3.6 m wide) Sandstone finish Kerb Stone at edges Walkway 4: Natural Trail (1.2 m wide) Rammed Murram Finish Kerb Stone at edges	36 mm thick rough cut as per desired size As per availability of market As per Design As per Design As per Design
	Seats and planter walls: Cast in situ seats: Structure of brickwork Natural stone boulders Coping: Granite Sandstone Brick pavers Cladding: Red sandstone	1 st class brickwork 20 mm thick 50 mm thick 75mm thick as/availability 20 mm thick as /design

S. No.	Materials	Specifications
	Dholpur Pink sandstone Texture paint Cladding tile	20 mm thick as/design 12 mm thick As/ market
	Shelter and food and craft kiosks: Structure with brick and concrete Flooring Flooring tiles Coping: Granite Sandstone Cladding: Red sandstone Dholpur Pink sandstone Texture paint	The structure will be brick and concrete frame structure as/structural design. The flooring will be available tiles in the market as per detail 12 mm thick Granite coping in counters and wall. 20 mm thick Sandstone cladding as per design. 20 mm thick as specific places and bands along with other stones and texture paints colour as per design.
3	Seats and planter walls: Cast in situ seats: Structure of brickwork Coping: Sandstone Brick pavers Cladding: Red sandstone Dholpur Pink sandstone Texture pain	Raised planter wall with height of 600 and 450 at places. Structure will be of brick and coping with 30-50 mm sandstone block or brick pavers. The cladding will be of 20 mm thick sandstone with texture paint partly.
4.	Other linear seating areas	

S. No.	Materials	Specifications
	<p>Seats and planter walls:</p> <p>Cast in situ seats:</p> <p>Structure of brickwork</p> <p>Coping:</p> <p>Sandstone</p> <p>Brick pavers</p> <p>Cladding:</p> <p>Red sandstone</p> <p>Dholpur Pink sandstone</p> <p>Texture paint</p>	<p>Raised planter wall with height of 600 and 450 at places.</p> <p>Structure will be of brick and coping with 30-50 mm sandstone block or brick pavers.</p>
5.	Open air theatre area	
	<p>Amphitheatre steps</p> <p><u>Coping</u> with Thick brick pavers.</p> <p><u>Cladding</u> with sandstone</p> <p>Stage:</p> <p>Finished with sandstone and sandstone cladding with edges of brick pavers.</p> <p>Amphitheatre Frames</p> <p>Concrete</p> <p>Sandstone</p> <p>Outdoor wood</p> <p>O.A.T. Backdrop wall</p> <p>RCC</p> <p>Sandstone</p> <p>Mosaic tiles</p>	<p>Portals cast in Concrete finished with Sandstone and wood cladding</p> <p>Stage Background wall with RCC wall finished with stone rubble work in one side and mural mosaic on lake side</p>
6.	Other walkways	

S. No.	Materials	Specifications
	Sandstone Granite Brick pavers	Finished in 20 mm thick sandstone partly with bands of brick pavers as per design
7.	Railings and Gates	
	Iron Mild steel Stainless steel	Hot dip galvanized iron gates and Mild steel railings along the walkway on lake side SS 316 Grade
8.	Boundary walls	Partly brick and concrete structure with plaster finish texture and Fitted LED Light on Every Column with paint finish. & stone pitching on Column Area.

NOTE:

1. The above specifications to the extent practicable are in line with the Govt. of Bihar SOR. Some up gradations have been made on the basis of feedback received from various stakeholders by the decision makers. Any deviation from the policy/Bye- Laws must be got approved from the implementing agency before execution. The decision of the implementing agency will be final and binding to the constructing agency.

2. If any ambiguity arises in the above technical specifications, BCD/CPWD technical specifications to be followed for the Construction work. Nonetheless, CPWD Specifications will prevail over the above in case of any obligation on either side.

List of Approved Makes**CIVIL ITEMS:**

Sl. No.	Description of Approved Material	Approved Make
1 (a)	Cement (OPC- Grade 43/53)	Ultratech (L&T)/ Ambuja/ACC /Konark/ Birla Gold/ Emami Double Bull/JK/Coramandel /Lafarge etc.,
1 (b)	White Cement	JK White/ Birla White
2	Reinforcement Steel	SAIL/ TISCON(TATA)/ VIZAG (RINL) /JINDAL, ELECTROSTEEL .
3	Structural Steel	SAIL/ TISCON(TATA)/ VIZAG (RINL) /JINDAL, ELECTROSTEEL
4.	Glazed Ceramic Tile	KAJARIA / JOHNSON/ SOMANI/ CERA
5.	Ceramic Floor Tile	KAJARIA / JOHNSON/ SOMANI/ CERA
6.	Vitrified Tile	KAJARIA / JOHNSON/ SOMANI/ CERA
8.	Ply Wood, Shuttering Ply Conforming to IS 303-1989 / IS 4990-1993	M/s. Century Ply boards (I) Ltd. / M/s. Green Ply Industries Ltd.
9.	-	-
10.	Fire Door	Shakti Met-Door, Meta flex
11	Rolling Shutter	Bengal Rolling Shutter, ' Standard', 'Swastik', 'Diana', 'Hercules',
12.	Stainless Steel Section	SAIL/ TATA
13.	Stainless steel hardware for doors	Dorma /Haffelle
14	Glazing	Saint Gobain / Asahi Float Glass Ltd / Hindustan Safety Glass Works Ltd. / Modi.

15.	Injectio water proofing, n waterproofing repellen coating, water ts Conc. Admixtures. Plasticizedmembran PVC e of waterproofing	Sika Qualcrete Ltd./ Structural Waterproofing Co. / Pidilite Industries Ltd. / _Fosroc / BASF. (The applicator has to be certified by the water proof vendor)
16.	Synthetic Enamel Paints, Distemper, Acrylic Emulsion Paints, Melamine Coating,Aliphatic,Acrylae	I.C.I (I) Ltd. / Berger Paints (I) Ltd. / Jenson & Nicholson (I) Ltd. / Asian Paints (I) Ltd. / FOSROC Chemicals (I) Pvt Ltd.
17.	Flush door (Factory made)	M/s. Century Plyboards (I) Ltd. / Green ply / Merino Industries
18.	Aluminum Sections and Extrusion shall conformIS:733-1983and IS:1285-1975	HINDALCO / JINDAL
19.	General Hardware	
	a) Latches, hinges etc.	GODREJ / DORMA / HAFFELLE
	b) Locks , Flush bolt	GODREJ / DORMA / HAFFELLE
	c) Handles	GODREJ / DORMA/ HAFFELE
	d) Screw	Nettlefold / GKW / ND
	e) Door Closure	GODREJ / DORMA/HAFFELE
	f) Floor Spring	GODREJ / M/s. EVERITE Agencies Pvt. Ltd. / M/s.
		Garnish
	g) Aldrop	ISI Marked
	h)Tower bolt	ISI Marked

	I) PVC Buffer block	ISI Marked
	J) Door Stopper	ISI Marked
	k) Patch fittings for toughened glass	Dorma Systems
20.	Laminates	—DECOLAM (Bakelite Hylam Ltd.) / —MERINO (Century Laminating Co. Ltd.)/ GREENLAM (GREEN PLY)
21	Kota stone (Bluish grey/ Green)	Premiur
22	Waterproof Adhesive for Tile / Slab fixing to Wall or floor	Terraco India (P) Ltd. / M/s. Pidilite Industries Ltd. / M/s. Roffe Construction Chemicals Pvt. Ltd.
23	Sealant	Rhodorsil-33, Pidiseal A-11 & B-11 : M/s. Pidilite Industries Ltd., Techseal RDL-600, Techseal RDL-940, Techseal RDL-1000 : M/s. Choksey Chemical (P) Ltd. Roffseal : M/s. Roffe Construction Chemicals Pvt. Ltd. or Fosroc ., Sikk Polysulphide/ Dr. Fixit Pidiseal PS (42 P) MYK.
24	Tile Jointing Materials	—RainbowTile Mate – HD (M/s. Roffe Construction Chemicals Pvt. Ltd.). —Terragrout (M/s. Terraco India (P) Ltd.). or Fosroc
25	Decorative Ply (Teak / Cedar / Mahegony / Walnut Veneer)	M/s. Century Plyboards (I) Ltd./ GREEN PLY

26	Cement Based or Textured Paint	ICI (I) Ltd / Asian Paints / Berger Paint (I) Ltd ./ Jenson & Nicholson
27	Glass Mosaic tiles	Shon, Kent , Bisazza
28	Glass for structural glazing & canopy (Colour Reflective toughened glass)	Saint Gobain / Hindustan Pilkington/ Ashai float glass.
29	Silicone Sealant	GE/Dow Corning
30.	Aluminum composite panel	Aluco bond,Aludecor, Alstrong
31.	MS Conduit pipe	BEC /SUPREME/ AKG
32.	PVC Conduit pipe	PLAZA/PRECISION/POLYCAB/AKG/ Arkaylite/Havells,JUVAS
33.	Pre-Anti-constructional termite (Chloropyriphos)	Pest Control India or approved by Engineer-in-charge
34.	Cement Primer	ICI / BERGER / ASIAN PAINTS/ JENSON & NICHOLSON
35.	Textured Paint	ICI / BERGER / ASIAN PAINTS/ JENSON & NICHOLSON
36.	Waterproofing acrylic emulsion exterior grade paint	ICI / BERGER / ASIAN PAINTS/ JENSON & NICHOLSON
37.	Acrylic Polymer waterproofing coat	SIKA / FOSROC / PIDILITE / ROFFE/ BASF
38.	Expanding grout admixture	SIKA / FOSROC / PIDILITE / ROFFE/ BASF
39.	Integral waterproofing compound	SIKA / FOSROC / PIDILITE / ROFFE
40.	Waterproofing admixture	SIKA / FOSROC / PIDILITE / ROFFE
41.	Plasticizer	SIKA / FOSROC / PIDILITE / ROFFE
42	APP Modified Bituminous membrane	SIKA / FOSROC / PIDILITE / ROFFE

43	Aluminum anodized louver	HUNTER DOUGLAS
44	Structural glazing	JINDAL/HINDALCO.
45	Stainless steel handrail with baluster	GODREJ / DLINE
46	Floor hardener	Ironite/ Feronite

WATER SUPPLY, SEWERAGE & DRAINAGE

Sl. No.	Description of Approved Material	Approved Brand / Manufacturer
1.	G.I. Pipes - medium class (As per IS-1239,P-1)	TATA/JINDAL
2.	G.I. Pipe fittings (as per IS-1239, P-1)	HB/ "NB" /"ZOLOTO"/Leader / -"JSI" fittings ISI
	II) ; of material with Galvanised Cast Iron Fillings, with material code conforming to IS- 1879	approved Heavy
3.	C.P. on brass fittings	
	CP Bib cock	JAQUAR-Continental /CERA /ESSCO -Delux' or _sumthing special'/ —Marcl/—Hindwarell or as approved by ENGINEER-IN-CHARGE
	CP 'Long Nose' /or' Long Body' Bib cock	- Do -

	CP Angle valve	- Do -
	CP 'Concealed' Stop cock 'Heavy' type with adjustable CP wall Flange	- Do -
	CP Shower Rose	- Do -
4.	Bronze /Gun metal-body—Pressure- Release valve with threaded screwed ends, class (PN-1.0) / or (PN-1.6) class	Zoloto / 1040A / Leader / Sant / Neta
5.	Gun metal body Ball Float valve with PVC (High pressure) Ball Float	Zoloto / Leader / Sant / Neta
6.	15 mm dia. PVC Connector pipe with Symet nuts at both ends. - (for Wash Basin Pillar tap &W.C. &Urinal - Cistern connections)	PRAYAG or as approved by ENGINEER- IN- CHARGE
7.	Wall Outlet Connection Flexible Pipe -	"Jaquar" / —Esscol/ —Hindware

	15mm dia	
8.	Bronze /Gun metal-body Gate valve with threaded screwed ends, "Non-rising Spindle" type (PN-1.0) / or (PN-1.6) class	—Leader / —Zoloto-for Sant / Bronze body / —Neta / SBM – —Peglar type
9.	Bronze -body Globe valve with BSPT(F), threaded screwed ends, "Non-rising Spindle" type (PN-1.0) (PN-1.6) class	Valves of 'Zoloto', or 'Sant' or as approved by ENGINEER-IN-CHARGE.
10.	CI body Gate /Sluice valve with flanged ends rising Spindle" type (PN-1.0) / or (PN-1.6) class	'Sant' / 'Zoloto' / Leader / 'Hawa'
11.	Pump for water supply.	'Willo' / 'KSB' / —CRI / —Grundfos / DP.pump
12.	CP Spreader-Urinal 15mm (for Urinals only)	for all Toilets :- Hind ware / "Parry ware" or as approved By ENGINEER-IN-CHARGE.
13.	Soil, waste & vent pipes / and Pipe Fittings	'NECO' / 'HEPCO' / 'KAPILANSH DHATU UDYOG

	& Specials :- C.I. Centri cast (as per 15- 3989)	(P) L TD.'
14.	C.P. on brass fittings	JAQUAR/ESSCO -Delux/Marc /Hindware /CERA
15.	C.P. on brass fittings C.P. Waste Coupling, ii) C.P. Bottle Trap, iii) C.P Robe Hook, iii) C.P. Towel Rail. v) CP Two way Bib Tap	JAQUAR/ESSCO -Delux/Marc/ Hindware /CERA
16.	CP Toil. Paper Holder	- Do -
17.	CP Towel Ring	- Do -
18	CP Soap Dish Holder	- Do -
19.	CP Bottle CP Trap with wall connection Pipe	- Do -
20.	Sanitary Fixtures & Fittings	
	CP Robe Hooks	- Do -

	CP "Two-way" Bib cock	- Do -
	CP Shower Rose	- Do -
21.	Rigid PVC (Concealed) Waste pipe, [Schdl.-40], (as per ASTM D 1785)- (concealed or exposed)	Supreme / Oriplast / Finolex/ Utkarsh
22.	Rain Water Pipe Fittings :- 'Sand cast Iron' - "SWR" class, as per (IS: 1792)	DO
23.	'Salem' Stainless Steel Sink as per AISI 304 (18/8) conforming to I.S.- 13983	"Hindware" "Hafele" "Nirali", 'Parryware'
24.	Stone- Ware Pipes, and S.W. Pipe Fittings	Sonali / GINNI / NIRALI / Hind
25.	C. I. Manhole Cover (I.S. - 1726) - "Medium" or "Heavy" Grade' (Light duty only on Oil/Grease Trap Chamber)	NECO' / 'HEPCO'/ Swastika / 'BPL' / BICL.
26.	NP-2 class R.C.C. Pipes and Pipe Fittings	/ West Bengal Eastern Spuncrete Concrete

	(i.e., RCC Collars etc.)	/ _HINDUSTAN’/ Industries(P) Ltd. _SUR’./or Equivalent ISI approved Make.
27.	Stone- Ware Gully Trap	Sonali / GINNI / NIRALI / Hind / or equivalent ISI Approved make.
28.	C. I. Grating- (Over Catch Pit In Yard Gully Chamber), (I.S. - 1726) - "Medium" or "Heavy" Grade	NECO' / 'HEPCO' / _BPL’//Kapilansh Dhatu Udyogl
29.	Rain Harvesting Pump/ Agriculture Pump of required capacity -.	'Willo'/ //KSBI// —CRI// —Grundfos// DP pumps/
30.	"Enclosed" Analogue type Water Meter ("Bulk" Type), conforming to IS- 2373 with Calibration Certificate, including all Necessary accessories.	"Dashmesh" / "Kaycee" / "Capstan"/ —Kentl.
31.	Bronze body "Parallel Slide" "Blow-off valve ("Spring loaded, blow-off pressure sellable" type), with flanged ends, also	Zoloto’ / Sant –make / Leader.

	with matching Flanges (PN-1.0) / or (PN- 1.6) class	
32.	Air-Release Valve	Zoloto ^c / Sant –make / Leader.
	Bronze body "Parallel Slide" "Blow-off valve ("Spring loaded, blow-off pressure	
	sellable" type), with flanged ends, also with matching Flanges (PN-1.0) / or (PN- 1.6) class	
	Bronze / Gun metal -body Ball valve with "BSPT(F), threaded screwed ends, "quarter turn Lever operated" type (PN-1) / or (pN- 1.6) class	Valves of Bronze body :-'Leader', 'Zoloto' – Metal only:- Sant make / Leader.
33.	Gaskets-CAF 'Full face' conforming to IS- 2712, Gr.- C; (3mm thick)	"Klinger" / "Permanite" / "Champion".
34.	CPVC and uPVC and HDPE pipe including fittings	Ori-Plast /Suprim/Alom

35.	Pressure Reducing Valve Blow-off VALVE : Bronze / Gun metal Body, Bronze/Gun metal Body, Non-Return Valve (N.R.V) : C.I. Body	,Zoloto, / "Sant" / —Leader / —Amcol / —Hawal)
36.	(Vitreous Sanitarywares chinaware):- i) W.C. - (Indian type/ European Type) - with 'S' / 'P' - Trap - Floor mounted type, without PVC Flushing Cistern ii) Wash Basins - "Flat-back" type rectangular pattern with —Esscoll CP Pillar Tap / or —Swan neck type Mixer iii) Urinal - Flat back "Small" with CP Spreader, CP Waste coupling, CP Bottle Traps with waste pipes.	Hindware, / —Parry ware / —CERA / KOHLER
37.	Wall Mirror	6mm thick 'Modiguard' / 'Ashai' / or equivalent as approved by ENGINEER-IN-CHARGE, with 12mm

		thick hard-board backing
38.	W.C.:- Floor mounted “Pedestal” type- W.C. -	Hind ware- /'Parry ware'/'Cera' :-
39.	Wash Basin	'Hind ware- /'Parry ware'/ 'Cera'
40.	For WC flushing :- PVC 'Low-level' "Dual- Flush" Cistern	Hind ware' "SLEEK" or equivalent Parry ware or 'Cera' Model.

ELECTRICAL ITEMS:

Sl.	ITEM	APPROVED MAKES
1	Diesel engine	CUMMINS / CATERPILLAR / KIRLOSKAR
2	Alternator	KIRLOSKAR / STAMFORD / AREVA
3	LT Cable termination materials	DOWELLS / COMET / LOTUS
4	Air Circuit Breaker	SCHNEIDER / ABB / L&T
5	MCCB / Contactor	SCHNEIDER / ABB / L&T
6	MCB Distribution Board	SCHNEIDER / ABB / L&T
7	MCB / RCCB / RCCBO	SCHNEIDER / ABB / L&T
8	Power Factor Correction Relay	SCHNEIDER // L&T/EPCOS
9	Power Factor Correction Capacitors	SCHNEIDER / EPCOS / L&T
10	Relays	SCHNEIDER / SIEMENS / L&T
11	Meters	SCHNEIDER /ENERCON/ AEI
12	Ammeter/Voltmeter selector switch	L&T/ KAYCEE / SALZER

13	Indicating Lamp	SCHNEIDER /SIEMENS/VAISHNO/ L&T
14	Push Buttons / Indicating Lamps	SCHNEIDER /L & T (RISHAB) / SIEMENS
15	CT	KAPPA / AUTOMATIC ELECTRIC / BCH
16	L. T. Power, control and signal cable	HAVELLS / POLYCAB / CRYSTAL
17	Cu. Wires	MESCAB / FINOLEX /HAVELLS
18	M.S.Conduit	JINDAL / TATA / GST
19	PVC conduit & Accessories	ISI Marked
20	Industrial Power Socket Outlets	SCHNEIDER / ABB / L&T
21	Switches and Sockets modular type	LEGRAND / CRABTREE / L&T
22	Lighting Fixture	WIPRO / CG / PHILIPS
23	Wall/ Ceiling / Exhaust Fans	USHA / CROMPTON / HAVELLS
24	Ductable Split Units	LG / PANASONIC / CARRIER
25	Wall Mounted Split Unit	LG / PANASONIC / CARRIER
26	Cable Tray	FABRICATED / LEGRAND
27	EPABX	UNIFY / CISCO / AVAYA
28	RJ 11 SOCKET	LEGRAND/L&T/SCHNEIDER
29	RJ 45 SOCKET	LEGRAND/L&T/SCHNEIDER
30	LAN Cable & Accessories	HAVELLS / POLYCAB / CRYSTAL
31	UPS	ETON/EMERSON
32	CCTV CAMERAS	L&T/SCHNEIDER/ABB
33	PA SYSTEM along with all accessories	BOSCH / HONEYWELL

34	TRANSFORMER	VOLTAMP / SCHNEIDER /
35	HT BREAKER	SCHNEIDER/ABB/L&T
36	HT XLPE CABLE	HAVELLS / POLYCAB / CRYSTAL
37	11 KV RUBBER MAT	ISI MARKED
38	11 KV HAND GLOVES	ISI MARKED
39	ELECTRONIC LIGHTING ARRESTER	PROLITE/
40	Fan	Havells, Crompton, Bajaj
41	LED Lights	Havells, Crompton, Bajaj,Surya

FIREFIGHTING MAKES

<u>Sl. No.</u>	<u>Description of Material/Item</u>	<u>Approved Make</u>
1	Relays	Siemens / Schneider / L & T
2	Meters	IMP / Neptune
3	Ammeter/Voltmeter selector switch	Kaycee / Salzer / AE
4	Indicating Lamp	Siemens/ Schneider
5	Wires (copper conductor)	Mescab / Polycab/ Havells/ Nicco / Gloster
6	MCCB	Siemens/ Schneider / L & T
7	CT	Kappa
8	MS-Black Main Pipes-Hydrant ERW (IS-1239) Butt weldable /threaded IS:1239	JINDAL / TATA/ Nezone/ _Skipper‘

	Part-I (Heavy)	
9	Gate valve(IS:210,GR-210) ,	Crawlie & Ray
10	Butter fly valve in C.S. lever / Wheel	/Leader /Intervolve/Sant/ Zoloto/L&T
	operated to be fitted between flanges, PN-1.0 BS-5155	Kirloskar/
11	Foot Valve with Strainer as per IS-4038	
12	Sluice / Gate Valve.	
13	N.R.V.	
14	R.C.C. pipes (NP-3	Eastern Spuncrete / Ltd. W.B. Concrete Industries Pvt. / Hindustan
15	Hydrant Valve IS-5290	Shield Fire/Minimax, Surex –all ISI marked
16	CP fire Hose with G.M. Nozzle.	FireShield /Minimax, Surex – all ISI marked
17	Pressure Gauge	FireShield /Minimax, Surex – all ISI marked
18	Hose Box	FireShield /Minimax, Surex – all ISI marked
19	Fire Extinguishers D.C.P.- 5 Kg.- including MS fastening Clamps for mounting on walls/columns CO ₂ 4.5 Kg.- including MS fastening Clamps for mounting on walls/columns Water CO ₂ including MS fastening Clamps for mounting on walls/columns	FireShield /Protector/ /Surex /Minimax-all ISI approved

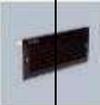
	A B C – Powder type	
	(Mono Ammonium Phosphate base) - including MS fastening Clamps for mounting on walls/columns	
20	Pump	Pumps/Kirloskar/KSB/ SAM TURBO BE /WPIL /Grundfos or Equivalent
21	Y'-strainer	Kirloskar/Lead er/ Sant /Zoloto
	Pressure Release Valve	Kirloskar/Lead er/ Sant /Zoloto
23	Fire Sprinklers (both pendent & Up-Right type)	=TYCO' / VIKING' / =Omex' / =Centrall-ELÖ 16/ Crawlie & Ray
24	FIRE ALARM PANEL DETECTORS 3	HONEYWELL-ESSER, Notifire, Simplex, =Morley-Edward
	MODULES/ MCP (system sensor)	
25	RESPONSE INDICATOR	Approved matching Brand.
26	CABLE	Finolex or equivalent
27	PVC CONDUIT	Ori-Plast or other equivalent
28	FIRE ALARM PANEL	HONEYWELL-ESSER,
29	Smoke Detector	Siemens/Esser/Tyco
30	Heat Detector	Siemens/Esser/Tyco
31	Manual Call Box	ISI Approved Make
32	PC	HP/Dell
33	Pressure Switch	Indfoss ,/ Switzer
34	Lift	OTIS/KONE/JOHNSON

The types of lights proposed in the project are as below:

Types of lights used in project

S. No.	Type	specifications	Areas
1	L1-Post Top lights	LED light above MS post	Along the boundary wall
2	L2-Solar Pole lights	3m high on pole with inbuilt solar panel above Led light with star rated. Lux level-100	Along walkways
3	L3-Bollards	LED Bollard-20 Lux	Along Pathways and Plazas
4	L4-Tree Uplighters	LED lights to uplight tree	Under trees and shrubs Pergolas
5	L5-Step lights	LED recessed lights , LED strips	Amphitheatre steps, Ghats planter and steps, Seat walls
6	L6- Façade Lighting	Decorative pole, Projector light & linear wall washer from architectural LED fixture range.	Buildings- Station Club, Cleveland Memorial
7	L7-Stadium Lights	High Mast Lights	Stadium and open Spaces
8	L8- Indoor Lights	LED lights based, focus lights based on type of Space	Buildings inside the campus

LOCATION	TECHNICAL SPECIFICATION	PRODUCT	PHOTOGRAPH
STADIUM			
Cricket Pavilion (North South)	Width = 20 M Open Gallery .	50 nos. 4 W LED step light and 20 nos. 18 W FTL (IP 65) for building	
Twin Volleyball court	Two nos. 9 M X 18 M court 3 mtrs apart	14 M Pole with 16 nos. 1000 W LED Flood (4 nos. light per pole)	
Open Spectator stand for volley ball	Setep type gallery	20 nos. 4 w LED step light. Security light - under general area lighting	
Old Gym area	30M X 9M. Illumination level Avg 250 lux for Task lighting.	36 nos. LED indoor decorative lighting 50 nos.	
Twin Tennis court	11 M X 24 M court 5 mtrs apart. Illumination level - Avg 450 lux with uniformity Min/max = 0.4 and Min/Avg = 0.6	14 M Pole with 16 nos. 1000 W LED Flood (4 nos. light per pole)	
basketball Court	15.2 M X 28.7 M . Illumination level - Avg 350 lux with uniformity Min/max = 0.4 and Min/Avg = 0.6	14 M Pole with 12 nos. 1000 W LED Flood (3 nos. light per pole)	
Swimming pool	25M X 50 M swimming pool with translucent cover & trust. Illumination level - Avg 350 lux with uniformity Min/max = 0.4 and Min/Avg =	32 nos. 350 W LED Flood on trust	
Changing room (37 M X 5 M)	Illumination level Avg 150 lux for Task lighting.	30 nos. 36 W LED indoor TL lighting / LED outdoor TL for entrance	
Indoor stadium (60 M X 26 M)	7 nos. Badminton court. Avg 350 lux with uniformity Min/max = 0.4 and Min/Avg = 0.6	24 nos. 350 W LED Flood at 12 M High trust above court for each court - 168 nos.	

Stadium Cafeteria	Bollards for open area & Tube light for covered area	Decorative 9 W LED bollard (TETRIS - BGBOS 605 9W LED) = 10 nos. 18 W LED Tube light (IP 65) - 6 nos.	
Cleveland memorial & stadium	L = 100 M X W = 3.5 M	Decorative post top lantern ARIAN - BCGT W4 LED WW , 45 W LED post top on 5 mtrs black pole 10 Mtrs apart in one side configuration = 40 nos.	
Event/FAIR GROUND			
	(105 X 50)50 lux average considering safety and security	4 nos. 16 M Umbrala High mast with 8 nos. 350 W LED flood for adjasant area lighting	
OPEN AMPHI THEATER			
Stage		2 nos. Pole with 4 nos. 350 W LED Flood for stage lighting	
Stair & Spectator area	8 nos. stair / Top stair = 70 M ark	32 nos. 4 W step light for stair & 12 nos. 27 W Post top lantern -7 mtrs apart	 
CLEAVELAND MEMORIAL			
Tree & Plant area		9 W Focus spike light = 16 nos. / 9W LED ground embedded light BLWUP 9W LED WW for plant = 10 for plant lighting	 
Pathway & Memorial boundary	L = 100 M X W = 3.5 M	Decorative 9 W LED bollard (FLUTE BGBOL 605 9W LED) 10 Mtrs apart in staggered configuration = 20 nos.	
Cafeteria		18 W LED Tube light for indoor and outdoor application with cover to IP 65 protection - 6 nos.	
memorial façade		LED flood for volume light / Strip light for building edge / projection light for pillar & other area for heightling . All lights are programmable type RGB dynamic for architechral lighting application.	
NEHRU MEMORIAL			
Steps	Septs with Max radius 21 M	9 W LED Focus spike light = 20 nos. for plant / 9W LED ground embedded light BLWUP 9W LED WW for plant = 20 for tree	 
Stair	12 nos. stair	4 W step light = 24 nos.	

Memorial block	L = 80 M dia	15 W LED projection light for columns = 16 nos. /Strip light for memorial structure edge = 20 mtrs / 48 W LED Flood for volume light - 1 no. All lights are RGB dynamic for architechral lighting application.	
Walk way 3.5M	L = 3.98 km / 3.6 M wide road	Decorative post top lantern ARIAN - BCGT W4 LED WW , 45 W LED post top on 3 mtrs black pole 15 Mtrs apart in one side configuration = 50 nos.	
Open Cafeteria	Bollards for open area & Tube light for covered area	Decorative 9 W LED bollard (TETRIS - BGBOS 605 9W LED) = 10 nos. 18 W LED Tube light (IP 65) - 6 nos.	
Pathway	2.5 M road around memorial (280 M) & connection (220 M)	Decorative post top lantern 25 W LED fittings 10 Mtrs apart in one side configuration = 50 nos.	
MULTI PURPOSE GROUND			
National Flag Mast		100 ft Flag mast with narrow beam archi range of Natural white LED flood	
Pathway around ground	1.2 km long 3.5 mtrs wide path way. Illumination level Avg 10 lux , min/avg = 0.3	5 M PU painted GI Octagonal pole with 45 W LED Street light in 15 M distance = 80 nos. .	
Station club inside area	L = 32 M, W = 32 M Illumination level Avg 150 lux for Task lighting.	Decorative indoor lighting of different wattage	
Pathway around building	L = 150 M , W = 3.5 M	Decorative 3.4 Mtrs post top lantern IMAGICA ASYM with 40 W LED fittings 20 Mtrs apart in one side configuration = 6 nos.	
Main entrance walk way	L = 180 M and W = 5 M	Decorative post top lantern 25 or 40 W LED fittings 30 Mtrs apart in staggered configuration = 14 nos.	
Building Façade		15 W RGB LED projection light for pillar - 12 nos. and 48 W RGB LED Volume light for veranda - 2 nos. . Light are for architechral lighting application	
Stage		2 nos. Pole with 4 nos. 350 W LED Flood for stage lighting	

Stair		12 nos. 4 W step light for stair	
PARKING LOT			
Beside main entrance		5 nos. 16 M Umbrella High mast with 8 nos. 350 W LED flood for adjasant area lighting	
Near stadium			
Multipurpose ground			
Secondary entrance			
TOILET BLOCK			
stadium		10 nos. 18 LED TL indoor and outdoor application	
Multipurpose ground		10 nos. 18 LED TL indoor and outdoor application	
Kid's playing area(60x70m)	Sitting -11 no's, Preparation of ground, sand Bedding, installation of equipment's	10 nos. 18 LED TL indoor and outdoor application	
ENTRANCE			
Main entrance		Façade lighting for entrance gate	
Secondary entry		Façade lighting for entrance gate	
Parking lot entry		Façade lighting for entrance gate	
ROAD SURFACE			
Trellis Walkway	With pergola	Will be closed at night	Lighting for Security Purp Decorative 3.4 Meter post lantern IMAGICA ASYM 40 W
walkway 3.6M	L = 3.98 km / 3.6 M wide road	Will be closed at night	
Sculpture Garden	Projector lighting for exhibition object	SITC of 40 nos. 15 W to 25 W Warm White / White LED Narrow beam Round Projector with accessories and connection cable & foundation	
	General lighting for Exhibition ground	SITC of 4 nos. 16 M Umbrella mast with raising lowering Head frame .350 W LED Flood including High mast lighting DB, power cable and all accessories & foundation.	
Others			
Open Gym, Children Play	Tree lighting	SITC of 30 nos. 54 W Warm White / White LED Narrow / medium / wide	

Area, General garden lighting & Furniture		beam Flood light with accessories and connection cable & foundation	
	Bush lighting	100 nos. SITC 9W Spike light	
	Garden area lighting	SITC of 50 nos. 1.2 M Cast Iron decorative bollard with decorative LED fixture with DB and connection cable & foundation	
	Gazebo	sitting / meditation with indirect illumination	
FAÇADE LIGHTING	Station Club	Decorative pole, Projector light & linear wall washer from architectural LED fixture range.	



Solar lights LED



Tree Uplighter



Step lighting (LED strip)



Solar bollard

Figure 1: Lighting Fixtures reference images

Indoor lighting:

Indoor lighting which would be used inside Sports Building, Station Club, Cleveland Memorial, Guard house, Toilets, Pump room, Craft kiosks and food stalls would have similar specifications as above and will be of LED type. It will comprise of LED tube lights (T5 batten), LED fans, LED bulbs, LED down lights etc.

STADIUM FLOOD LIGHTING:



REQUIREMENTS:

For lighting of a sports facility, design attitude should meet both visual performance & Visual comfort parameters of all groups of users, viz. Players, Officials, Spectators and the Media.

Players and Officials

They must be able to see clearly all the activities in the field to perform their best.

Spectators

The spectators should be able to follow the performances of the players and the action of the game with the minimum effort. Also the viewing should be agreeable and appealing i.e. not only the playing area, the immediate surrounding should also be visible in a rhythm with the game. Also the safety criteria of the spectators while entering or exiting the stadium or in case of any unwanted emergency should also be taken care of.

Media

Colour television broadcasting has become an indispensable part of any sports activity of National or International standard. The Lighting should provide conditions that guarantee of good colour picture quality because that is related to lots of commercial interest of the concerned authority. Also the lighting should be adequate for taking close-ups for both the players and spectators.

The following parameters are vital for the right lighting ambience:

- a. **Quantitative:** Adequate Horizontal Lighting level to create a good Visual field for Players, Spectators Good vertical lighting to meet CTV transmission requirement

- b. Qualitative**
- c. Uniform lighting**
- d. Glare control**
- e. Horizontal Illuminance:** As the illuminated playground itself forms a major part of the field of view of players and spectators it is the horizontal illumination level [Lux level] that mainly serves all the important adaptation state of the eyes. It is the basic backgrounds of the playing area satisfying which the other critical visual parameters are met.
- f. Illuminance uniformity:** Good illuminance uniformity in both the horizontal and vertical planes is important as it ensures freedom of adaptability of eyes over the field by both the players and spectators. It is important to have good uniformity along with gradient, to minimize camera adjustments.

U1 – Ratio of lowest to the highest illuminance.

U2 – Ratio of lowest to the average illuminance.

Even when the uniformity as defined above is acceptable for a particular design, changes in illuminance can be disturbing if they occur over too short a distance. This problem is most likely to arise when panning a television camera. Where TV/Film coverage is concerned, the illuminance uniformity at a given grid point has to be expressed as a percentage change from the average illuminance in the eight adjacent grid points. This is commonly called the uniformity gradient.

- g. Glare restriction:** Glare, brightness nears or enters the field of view, has a disturbing effect on the visual comfort of both the players and spectators. Glare can be minimized by paying careful attention to the choice of floodlights and by ensuring that they are properly sited and aimed bearing in mind the main directions of viewing. Glare should not only be considered for the players and spectators or who have been very close to the illuminated ground, but for also the people outside the facility who might be disturbed by the stray light from the installation. For example traffic adjacent to the playground or people living in the vicinity. A straightforward parameter to quantify the degree of such disturbances is directly related to the optical qualities of the floodlights employed and proper aiming and site of them.
- h. Modelling and shadows:** Modelling is the ability of lighting to reveal form and texture and is particularly important in providing a pleasant overall impression of the players, ball and spectators all around the area. The effectiveness of modelling is dependent upon the directions from which the light comes and the number and type of light sources used. Good quality television pictures demand good modelling from the lighting.
- i. Colour Appearance and Colour Rendering**
 - Good colour perception is important in most sports. Two most important aspects of colour have to be distinguished:

- The colour appearance of the light. This is the colour impression of the total environment as created by the lamp.
- The colour rendering of the light, this is the ability of the light to reproduce the colours of an object faithfully.
Both the Colour appearance and Colour Rendering is achieved by proper spectral distribution of the lamp.

Design Philosophy

Basic Considerations are:

Lighting equipment- Use appropriate Lamp and Luminaire combination

Standard: Follow standards, Specifications for Lighting Level, Ballast –wattage delivery, etc.

Application: Use appropriate lighting design tools, and ensure that accurate data is used

Usage of L: Light Regulation by selective switching for different levels of sports.

Design Requirements

The design requirements are clearly spelt out in the tender. The illumination parameters for various class of play are well defined. The quantitative as well as qualitative lighting parameters are spelt in the tender and lighting is to be designed to achieve these results at optimum Total Cost of Ownership.

Lighting should provide is visual comfort and good visibility to the players, spectators and TV crew for international event broadcasting.

BASIS OF DESIGN:

The design has been done on basis of the technical specification mentioned in the standard for cricket ground. Additionally, we have recommended two other switching steps for flexibility of usage of the venue i.e. for football & hockey ground.

Cricket ground lighting Specifications: -

Parameters	Requirement
Average Horizontal Illumination (Lux)	750 Lux & 500 lux
Uniformity (U1)-Min/Max	>=0.7
Uniformity (U2)-Min/Avg	>=0.6
Glare Rating	<50
Light Source Type	<=1350 W LED luminaire
Colour Temperature	5700K
Colour Rendering Index	>70
Project Maintenance Factor	0.8

Football ground lighting Specifications: -

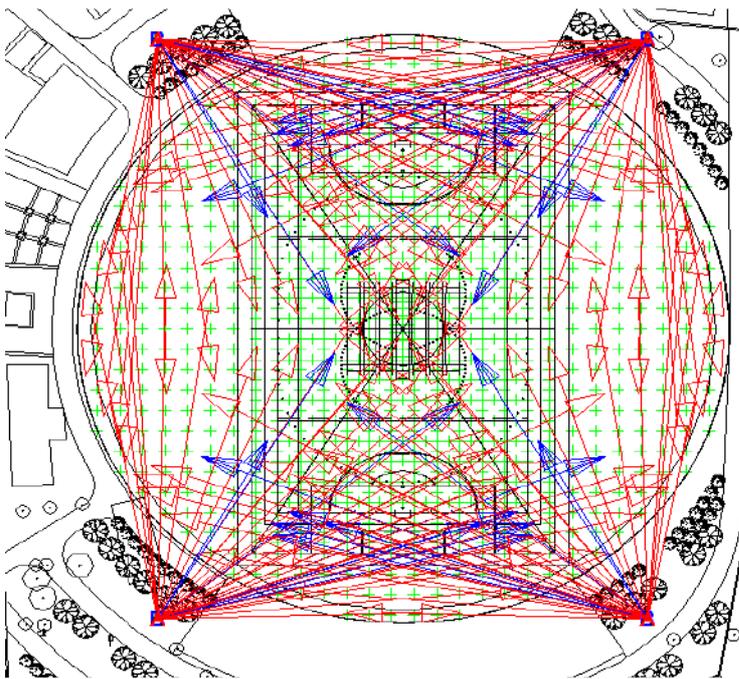
Parameters	Requirement
Average Horizontal Illumination (Lux)	500 Lux
Uniformity (U1)-Min/Max	>=0.7
Uniformity (U2)-Min/Avg	>=0.6
Glare Rating	<50
Light Source Type	<=1350 W LED luminaire

Colour Temperature	5700K
Colour Rendering Index	>70
Project Maintenance Factor	0.8

Hockey ground lighting Specifications: -

Parameters	Requirement
Average Horizontal Illumination (Lux)	500 Lux
Uniformity (U1)-Min/Max	≥ 0.7
Uniformity (U2)-Min/Avg	≥ 0.6
Glare Rating	< 50
Light Source Type	≤ 1350 W LED luminaire
Colour Temperature	5700K
Colour Rendering Index	>70
Project Maintenance Factor	0.8

Typical Layout of the Stadium:



Calculation Grid:

The lighting calculations are done at 5m x 5m grid as per CIE 169:2005.

Glare Calculations:

The glare calculation done for critical observer positions as per stated in CIE 169. The maximum glare rating achieved for the above points are less than 50.

Design Results:-

(II)luminance Calculations:

Calculation	Switching Mode	Type	Unit	Ave	Min/Ave	Min/Max
Football	2	Surface Illuminance	lux	537	0.70	0.60
Hockey	1	Surface Illuminance	lux	508	0.72	0.60
Cricket	3	Surface Illuminance	lux	592	0.77	0.60
Cricket Pitch	3	Surface Illuminance	lux	764	0.98	0.97

Summary of Lighting Design:-

- 4 nos. 35m stadium masts at top of headframe.
- Total Lighting Load Max 213 kW

TECHNICAL SPECIFICATIONS:

Luminaires:

- The floodlight luminaires shall be of special design for sports lighting application and suitable for LED light source. Each single LED Light should have maximum 1350W system with lumen output of minimum 1,57,000 lumen.
- The Luminaire and driver unit housing, floodlight’s electrical connection box and mounting bracket should be made of PDC moulded aluminium. The end caps should be made of pressure die cast aluminium. All the plastic and cables in the luminaire should be UV protected.
- Luminaire should have polycarbonate lens for dedicated rotational/symmetrical optic with reduced glare properties. Various optics should be available to meet the design criteria & optimize the design for an efficient system. (Minimum 7 symmetrical optics for optimum/efficient design from extra-narrow to extra wide (2x6° to 2x19°)) with zero ULOR (Upward Light Output Ratio). These flood lights should be suitable for operating temperature range of -40°C up to +45°C.
- The floodlight shall be a state-of-the-art design allowing easy mounting Luminaire should have a sturdy U-shaped mounting bracket with foot-print suitable for 3-point fixation by means of M20 bolts, there should be a possibility of vertical aiming from the horizontal: -90° / +90° and standing-up or hanging-down mounting. It should be supplied with electrical connection box pre-fixed enabling wiring between floodlight and driver box.
- The Floodlight fixture shall be minimum IP66 suitable for all weather outdoor application with an impact resistance of IK 08.
- Luminaire should have a Class A serviceability, luminaire is equipped with serviceable parts (when applicable) be it LED board, driver, control units, surge protection device, optics, front cover and mechanical parts from serviceability of the products in future.
- The LED Light Fixture shall have UL/ENEC & CE certification and must also be certified as stated in IEC60598 for outdoor luminaires. Maintenance of lumen output L80B50 shall be 50000 Hrs at released outdoor / indoor ambient. SDCM (Standard

Deviation Colour Matching) shall be maximum 5 or better. Luminaire surge protection should be 10kV standard. The power factor should be >0.95 at full power.

- The luminaire should have CRI 70, TLCI (Television lighting consistency indices) per color code should be 49. The luminaire should have percent flicker factor <1%. The corresponding luminaire should have also ranges in CRI 80 in CRI 90.

MEASUREMENT & VERIFICATION:

One time post installation measurement and verification will be carried out as per the followings:-

- The measurement will be done after 5 burning hours of the luminaire and the power for the same needs to be provided by the customer.
- The measurement will be carried out as per 5m x5m grid as shown in our lighting design.
- Voltage and current should be measured along with lighting levels as lighting levels is dependent on the available voltage.
- Rated supply voltage should be made available during the time of measurement.
- The measurement should be carried out on a clear night sky without dust/fog and smog as all these influences the lighting levels.

Details of signages, Furniture’s with specifications

An identity and a sense of place are created, if landscape furniture is properly integrated in the design of a public space. The furnishings of urban outdoor spaces have been designed by keeping in mind the different users like the needs of differently abled, children, and the elderly and also to enable triangulation. The furniture’s has been so designed that everybody in the park can utilise well to enjoy or to relax or to gossip. A different type of “cast in situ” benches has been uses to give a natural feel of the place. This has another benefit of designing benches and seats which are robust and maintenance free.

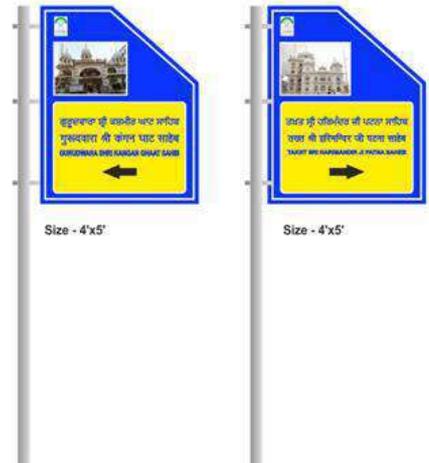
- **Signage’s:** The signage’s will be embedded and camouflaged with surrounding materials. The signages will be integrated into its structures like benches, pillars of kiosks or boundary walls.
- **Dustbins:** Dustbins are to be provided at places as required which will be harmonized with design of the areas. These will be provided more in nowhere there is more concentration of visitors such as food and craft area.



Stepped planter and seat



Dust bin



Signage



Figure 2: Garden Furniture

Detail of dustbins:

The dustbins would be of Bamboo or timber made as cast in situ to be as per the landscape of the site. The samples and design shall be approved by BSCL before execution.



Figure 3: Details of Dustbin and Signage

The modern signage would be metal finish cast in situ to be as per the landscape of the site. The samples and design shall be approved by BSCL before execution.

Details of Plants

The palette of plants chosen and displayed help create a sense of place, they evoke feelings, capture a mood, as well as beautifying and enhancing the outdoors. Among all of these hardscape work, one of the most important elements in successful public urban green space is PLANTS. Plants have the power to soften and civilize public urban space.

The proportions of structural plants including trees, evergreens, shrubs and grasses against the softer perennial plants need to be correct to give shape to the garden all year round. A focus on year-round colour and interest is a focus of all our schemes, with typical favourites in shades of Purples, Blues and Whites, or specific colour-themed planting.

Planting is designed such a way that can perform as a function of shading in hot summer, adding fragrance into the space, adding colour to the space. Different plants have been used to create sense of enclosure in some places, define boundaries and create canopies for other shade loving plants.

Hedges been created to have a soft material for dividing internal spaces within a garden. Tree and shrubs along boundary wall are proposed to create visual barrier for the surrounding settlements and chaotic areas.

The Big structured canopied trees are used to provide shade for sitting areas as no hard structures has been propped as a shading structure. Plants along the water body is very useful in maintaining dense beneficial vegetation around water which is extremely important for improving water quality, preventing erosion and controlling nuisance geese. Establishing buffer zones takes minimal effort and requires little maintenance. In the long run, it will also reduce the likelihood of excessive pond algae and other water quality issues that come from nutrient loading, thereby reducing the need for constant herbicide treatments, and lowering long-term costs associated with managing your water body.

These specific plants are proposed to have a self-maintenance and also for aesthetic purpose.

Table 1: List of Proposed Plants

Trees					
S. No.	Ref. Pic	Botanical Name	Common Name	Height	Remarks
1		Ailanthus excelsa	Maharukh	8'-10'	
2		Azadirachta indica	Neem	8'-10'	
3		Dalbergia sissoo	Shisham	8'-10'	
4		Peltophorum pterocarpum	Copper Pod	8'-10'	
5		Tamarindus indica	Imli	8'-10'	
Ornamental Tree					
1		Lagerstroemia speciosa	Crape Myrtle	8'-10'	

2		Cassia fistula	Amaltas	8'-10'	
3		Jacaranda mimosifolia	Neeli Gulmohar	8'-10'	
4		Bauhinia variegata	Kachnar	8'-10'	
Trees for Internal Pathways					
1		Plumeria alba	Safed Champa	8'-10'	
2		Ficus elastica	Rubber Tree	8'-10'	
3		Ficus rumphii 'variegata'	Pakur Tree	8'-10'	
4		Pseudobombax ellipticum (Bombax ellipticum)	Shaving brush tree	8'-10'	
Palm					
1		Wodeytia bifurcate	Fox Tail Palm	10'	

2		<i>Caryota urens</i>	Fish Tail Palm	10'	
3		<i>Washingtonia filifera</i>	Desert Fan Palm	8'-10'	
4		<i>Bismarckia nobilis</i>	Silver Bismarck Palm	5'-6"	
Shrub					
		<i>Calliandra haematocephala</i>	Powder Puff	3'-4'	
1		Agave variety (tequilana, Americana)	blue agave, American aloe etc		5 years old
2		Cactus Variety			5 years old
3		<i>Sansevieria</i> (different varieties)	Snake Plant		5 years old
4		<i>Adenium</i> varieties	Desert Rose		5 years old
5		<i>Euphorbia milii</i>	Euphorbia		5"X7" polybag

6		Cycus variety	Cycus	6 leaves	24-inch trunk height
7		Clerodendrum inerme		3’-4’	small polybag 5"x6"
8		Ficus panda		3’	

Table 0.2: List of other Trees that can be considered

S. No.	Common Name	Botanical Name	Height (mm)	Girth (mm)
Trees				
1	Fig tree	Ficus benjamina	1500	150
2	Amaltas	Cassia fistula	1500	150
3	Yellow trumpet tree	Tabebuia Argentea	1500	100
4	Indian willow	Salix tetrasperma	1500	100
5	Rosy trumpet tree	Tabebuia impetiginosa	1500	100
6	Madagascar almond	Terminalia mentaly	1500	100
7	Pride of India	Lagerstroemia speciosa	1500	100
8	Umbrella tree	Brassia actionophyla	1500	100
9	Neeli gulmohar	Jacaranda mimosfolia	1500	100
10	Sita Ashok	Saraca indica	1500	100
11	Kachnar	Bauhinia variegata	1500	100
12	Java ki Rani	Cassia javanica	1500	100
Shrubs				

S. No.	Common Name	Botanical Name	Height (mm)	Girth (mm)
1	Schefflera	Schefflera arboricola	300	-
2	caliandra		300	-
3	Techoma	Techoma capensis	300	-
4	Lantana	Lantana camara	300	-
5	Plumbago	Plumbago capensis	300	-
6	Crape myrtle	Lagrestroemia indica	300	-
7	Poinciana	Poinciana pulcherima	300	-
8	Draceana	Draceana colorama	300	-
9	Japanese bamboo	Pseudosasa japonica	300	-
10	Areca palm	Dypsis lutescense	300	-
11	Ixora	Ixora coccinia	300	-
12	Firebush	Hamelia patens	300	-
13	Golden shrim plant	Pachystachys lutea	300	-
14	Firecracker	Russelia equisetiformis	300	-
15	Fountain grass	Pennisetum setacium	300	-
16	Bird of paradise	Strelizia reginae	300	-
17	Lobster-claws	Heliconia	300	-
18	Umbrella papyrus	Cyperus alternifolius	300	-
19	Adam's needle	Yucca	300	-
20	Sago palm	Cycus revoluta	300	-
21	Canna lily	Canna indica	300	-
22	Lily	Hymenocalis littoralis	300	-
23	Ipomea	Ipomea alba	300	-

S. No.	Common Name	Botanical Name	Height (mm)	Girth (mm)
24	Alpinia	Alpinia zerumbet	300	-
25	Lily	Lily amhyrilis	300	-
26	Lily	Hymenocalis littoralis	300	-
27	Sider lily	Crinum lily		
1	Alpinia	Setcresia purpurea	200	-
2	Ruellea	Ruellea rosea	200	-
3	Rhoheo	Rheo	200	-
4	Iresene	Iresene herbstii	200	-
5	Alternenthra	Alternenthra red	100	-
6	peace lilies	Spathyphylum	200	-
7	Blue flax-lily	Dianella tasmanica	200	-
8	Mondo grass	Ophiopogon japonicus	200	-
9	Fern	Nephrolepis exaltata	200	-
10	Liriope	Liriope mascari	200	-
11	Elephant ear	Caladium	200	-
12	Philodendron	Philodendron	200	-
13	Syngonium	Syngonium	200	-
List of creepers				
1	Madhumalti	Quisqualis indica	300	-
2	flamevine	Bignonia venusta	300	-
3	Rakhi creeper	Passiflora violacia	300	-
4	Sehra bel	Thunbergia mysorensis	300	-
5	Garlic creeper	Adenocalyma	300	-
6	glory tree	Clerodendron splendens	300	-



Tabebuia impetiginosa



Tabebuia argentea



Figure 4: Proposed trees on site

General Specification of Work			
1	Station Club (L = 32 M, W = 32 M)	There is proposal of removing the whole roof slab and casting it again as the condition of existing slab is dilapidated. The dance floor which is again in broken state is proposed to be removed as original. The proposal includes renovating interiors including plastering, painting, wall paneling, false ceiling, tiling, providing fixture in toilet, lighting and electrical works. The proposal also includes development of water fountain outside the Station Club, External Lighting and Path development. The finish of proposed path is Granite Cubes	
2	Renovation of campus compound wall	The overall length of campus boundary wall around 3.5 Km of which external boundary wall is 2.5 Km and internal boundary wall is 1.0 Km. The proposal includes demolition of existing boundary wall and construction of high end boundary wall. With Stone Cladding & Electrical LED Bulb Fitting on Every Column	

3	Landscape Feature and Furniture	Although the whole compound is proposed to be landscaped. However certain landscape elements are proposed in Sandy’s Compound like Gazebo, Mounds, Trellis Walkway, Walk and bridges. The furniture includes Sitting Benches and Dustbins. The compound is also equipped with Toilets along with Drinking water facility.	 <p>Trellis Walkway Pic</p>
4	Rehabilitation of Cleveland Memorial	It will be developed as an open area with basic facilities like Toilet block and drinking water facility. The proposal includes: 1. Building renovation 2. Retrofitting of Boundary Wall 3. Special Lighting for Memorial (Indoor and Outdoor) 4. Ticket cum Guard Room	
5	Renovation of open-air theatre(1200sq m)	Developed into a fine place for hosting different activities including drama, musicals and others. The proposal includes landscaping, surface treatment and extension of facilities like drinking water and toilet.	
6	Sculpture Court cum Open Art Gallery(1360sqm)	A small sculpture court is proposed where the history of Bhagalpur will be depicted through sculpture. It will also have other theme based sculptures like modern, historic, etc. The court will have sitting benches along the pathway for people to sit. It will also have open art gallery space where people can come and display (themed temporary art exhibitions) their creativity through models and paintings. The area will be enclosed with wooden fencing of 900mm height with single entrance	
7	Walkways (3.98km)	The walkways are proposed to be 3.6 m wide having Sandstone finish The existing pathway on the periphery of main ground, currently of concrete, is proposed to be developed as Walkway. The walkway will have shaded seating benches at 400 m interval.	
8	Kids Play Area(70x60M)	It will be have sand bed for kids to play with sitting stone benches where one can sit and enjoy the surroundings, toilet facility with feeding rooms for women and drinking water facility.	
9	Cafeteria and Food Plaza	The food plaza/Cafeteria is proposed to have permanent furniture made up of bricks and concrete with patio umbrellas.	

10	Swimming Pool(50x25M)	<p>The swimming pool is proposed with allied services; toilets, change rooms, store room, lockers, balancing tank, pump room and other administrative facility required for operation of the sports. World Championship pools must be 50 meters (160 ft) (long course) long and 25 meters (82 ft) wide, with ten lanes labelled zero to nine (or one to ten in some pools; zero and nine (or one and ten) are usually left empty in semi-finals and finals); the lanes must be at least 2.5 meters (8.2 ft) wide.</p> <p>They will be equipped with starting blocks at both ends of the pool and most will have Automatic Officiating Equipment, including touch pads to record times and sensors to ensure the legality of relay takeovers. The pool must have a minimum depth of two meters.</p>	
11	Renovation of Existing Lawn Tennis	2 no’s With All Facility Provided as per ITF Standard Lighting, Net ,Marking Surface Treatment	
12	Gym Renovation	<p>The existing Gym Building is proposed to be renovated with new flooring and false ceiling along with proposal of construction of one additional floor which includes construction of remaining portion on first floor and casting of roof slab. The proposal also includes façade uplifting of the building. It will be an Air-conditioned Gym. It will act as an athletic and fitness centers for members and sports personnel of the sports Complex as well as other members. Toilet, change room, locker and drinking water facilities is proposed in the Gym with facilities of Locker. Gym is proposed with new gym equipment. Gym Equipment List- Equipment/Machine Nos</p> <p>Commercial Motorized Trade Mill -7,Commercial Cross Trainer -7,Commercial Cycle -10,Commercial Smith Machine- 2,Commercial Cable Cross over- 26, Commercial Lattice Set -2,Big Gym Ball -10,8 Medicine Ball 1 to 10 Kg- 10,Rubber Mat -50 sqm,Bench Press-Inclined and declined - Both 2,Flat Bench (Adjustable) -3,Small Tools -6,12 Orbit Elliptical Machine- 6,Steam Bath (Sauna Bath)-2,Generator Recumbent Bike- 6, Vibration Plate (Crazy Massager)- 6,Multi Gyms- Abdominal Crunch -6, 45 Degree Leg Press -2,Leg Extension/Leg Curl-2, Rowing Machine -5,Locker -50,19 Foam roller -6,20 Ab Wheel -6,Butterfly -2,Arm Curl -2,Mirror (3mX 2m)- 5,21 Dumble 5 Kg, 7.5 Kg, 10 Kg, 15 Kg, 20 Kg, 25 Kg, 30 Kg, 35Kg & 40 Kg 2 Pairs Each</p>	
13	Volley Ball Court Renovation	Renovation of two existing Volley Ball Courts along with seating area is proposed in the proposed sports complex. A proposed volleyball court is 9 m × 18 m (29.5 ft × 59.1 ft), divided into equal square halves by a net with a width of one meter (39.4 in). The top of the net is 2.43 m (7 ft 11 11/16 in) above the center of the court for men's competition, and 2.24 m (7 ft 4 3/16 in) for women's competition, varied for veterans and junior competitions. The minimum height clearance for indoor volleyball courts is 7 m (23.0 ft), although a clearance of 8 m (26.2 ft) is recommended. The team	

		courts are surrounded by an area called the free zone which is a minimum of 3 meters wide and which the players may enter and play within after the service of the ball. All lines denoting the boundaries of the team court and the attack zone are drawn or painted within the dimensions of the area and are therefore a part of the court or zone.	
14	Basketball Court	The basketball court is the playing surface, consisting of a rectangular floor, with baskets at each end. Outdoor surfaces are generally made from standard paving materials such as concrete or asphalt. Under International Basketball Federation (FIBA) rules, the court is 28 by 15 meters (91.9 by 49.2 ft). The baskets are always 10 feet (3.05 m) above the floor (except possibly in youth competition). Basketball courts have a three-point arc at both baskets. The FIBA three-point line is 2.95 ft (0.90 m) from the sideline in a zone starting at the baseline and ending when it crosses the 22.1 ft (6.75 m) arc. The 21.65 ft (6.60 m) distance exists only at the points on the three-point line that are directly to the left and right of the basket center.	
15	Cricket Field with its Drainage	The current stadium is proposed to be developed into Cricket cum Football Stadium with drainage network & Fencing. The size of playing area in the proposed stadium is 120m X 170m.	
16	Development of Badminton Stadium (4 court Existing renovated +3 new Proposed in Extended area with Air-conditioning facility)	The proposal for new Indoor Stadium Includes: New Indoor Stadium is proposed with seven Badminton (4 Existing+3New) courts with wooden floor. It will have seating space for spectators along with office spaces, storage rooms and toilet with change rooms. A small cafeteria and gym is also proposed inside the new Stadium. The stadium will have Courts with markings for both singles and doubles play, although badminton rules permit a court to be marked for singles only. The doubles court is wider than the singles court, but both are of the same length. The length, width Net Height as per IBF Standard.	
17	Landscaping and Drainage	Laying of natural grass turf is proposed in the open ground. The laying is proposed after proper surface levelling and dressing. Drainage channels is proposed on the periphery of the field which will channelize all the storm water to the water retention pond.	

All material must conform to relevant BIS specifications.

CODES & STANDARDS.

All the systems and equipment’s within the scope of this tender shall be of reputed proven makes, designed and manufactured in accordance with the stipulations of latest versions of Indian Codes.

When an equipment is offered conforming to standards other than those listed below, it shall be clearly brought in notice of engineer in charge.

S. No	IS Code	Description
1	IS:1646	Code of practice for fire safety of building (general), Electrical Installations.
2	IS:1648	Code of Practice for fire safety of buildings (general), Fire Fighting Equipment
3	IS:3034	Code of Practice for Fire of Industrial Buildings, Electrical Generating and Distributing Stations.
4	IS:884	First Aid Hose Reel for Fire Fighting (For Fixed Installations).
5	IS:2171	Portable Fire Extinguisher, Dry Powder Type
6	IS:2878	Portable Fire Extinguishers, CO2 type.
7	IS:1239	Part - I : Mild Steel Tubes (up to 150mm). Part II : Mild Steel tubulars and other wrought steel pipe fittings.
8	IS:778	Gunmetal gate, globe and check valves for general purposes.
9	IS:13095	Butter Fly Valve
10	IS:14846	Sluice Valve for water works purposes (50 to 1200mm size) – Specification.
11	IS:5312	Swing Check type Reflux (Non-Return) Valves.
12	IS:940	Portable Fire Extinguisher, Water CO2 Type.
13	IS:10204	Portable Fire Extinguisher, Foam Type.
14	IS:2190	Code of practice for selection, installation and maintenance of portable First - Aid Fire Appliances.
15	IS:1520	Horizontal Centrifugal Pumps for clear, cold and fresh water.
16	IS:5290	Landing / Hydrant Valve
17	IS:8423	Controlled Percolation Hose for firefighting.
18	IS:903	Fire Hose Delivery Couplings, Branch Pipe, and Nozzles & Nozzle spanner.
19	IS:2062	Structural Steel (Fusion / Welding Quality).
20	IS:325	Three Phase Induction Motor.
21	NBC	National Building Code, Chapter – IV (Amendment No.3, January 1997).
22	IS:2189	Code of practice for selection, installation and maintenance of Automatic Fire Detection and Alarm System.

23	IS:732	Code of practice for electrical wiring installations
24	IS:2217	Recommendations for providing first aid firefighting arrangements in public buildings.
25	IS:3844	Code of practice for installation of internal fire hydrant in multistoried buildings.
26	IS:3589	Mild Steel Tubes (200mm and above).

DESIGN STANDARDS & CODES

The Bihar Building construction Department (BCD) specifications must be adhered to as laid down in the schedule of rates.

IS Codes & Standards:

- (i) National Building Code 2016
- (ii) CPWD Specifications 2009 vol. I & II.
- (iii) Relevant IS Codes
- (iv) SP 35 – Plumbing Standard
- (v) WHO standard for water quality
- (vi) TERI GRIHA

APPLICABLE CODES AND STANDARDS

- IS 383 Coarse and fine aggregates from natural sources for concrete
- IS 456 Code of practice for plain and reinforced concrete
- IS 516 Methods of testing for strength of concrete
- IS 1199 Methods of sampling and analysis of concrete
- IS 1838 Performed fillers for expansion joints in concrete non-extruding and resilient type
- IS 1946 Code of practice for use of fixing devices in walls, ceiling and floors of solid Construction
- IS 2389 Methods of testing of aggregate for concrete’s
- IS 2505 Concrete vibrators, immersion type
- IS 2645 Integral cement water proofing compounds
- IS 3414 Code of practice for design and installation of joints in buildings
- IS 3558 Code of practice for use for immersion vibrators for consolidating concrete
- IS 4082 Recommendation on stacking and storage of construction materials at
- IS 7861 Code of practice for extreme weather concretizing
- IS 7861 Recommended practice for hot weather (part I) concretizing
- IS 8112 Ordinary Portland Cement grade 43
- IS 12269 Ordinary Portland Cement grade 53

VOLUME-III

SECTION 8

FORM OF BID

FORM OF BID

Description of the Works:

BID

To :

Address :

1.0 We offer to execute the Design, Plan and Build Works described above and remedy any defects therein in conformity with the Conditions of Contract, specification, drawings (Concept layout), Price Bid (Lumpsum format) and Addenda for the sum(s) of _____

2.0 We undertake, if our Bid is accepted, to commence the Works as soon as is reason- ably possible after the receipt of the Engineer's notice to commence, and to complete the whole of the Works comprised in the Contract within the time stated in the document.

3.0 We agree to abide by this Bid for the period of days from the date fixed for receiving the same, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

4.0 Unless and until a formal Agreement is prepared and executed this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.

5.0 We understand that you are not bound to accept the lowest or any tender you may receive.

Dated this _____ day of _____ 2019

Signature _____ in the capacity of _____ duly

authorized to sign bids for and on behalf of (In block capitals or typed)

Address

Witness

Address

Occupation

SECTION 9

PRICE BID

PRICE BID

Preamble

- 1.0 The Price Bid shall be read in conjunction with the Instructions to Bidders, Conditions of Contract, Technical Specifications and Drawings (Concept Layout).
- 2.0 The numbers of dwelling units and buildings together related infrastructure and are given to provide a common basis for bidding. The payment will be based upon the actual quantities in respect of dwelling unit completed and carried out, as measured by the Contractor in sqm of carpet area and verified by the Engineer and valued at the rates and prices tendered in the Price Bid, within the terms of the Contract.
- 3.0 The rate tendered in the Price Bid shall, except in so far as it is otherwise provided under the Contract, including all planning, designing, preparing of structural drawings, getting the drawings vetted from Indian Institute of Technology /National Institute of Technology (NIT)/Govt. Engineering College, constructional plant, labour, supervision, materials, erection, maintenance, insurance, profit, taxes and duties, together with all general risks, liabilities and obligations set out or implied in the Contract.
- 4.0 The rates or prices shall be quoted entirely in Indian Currency.
- 5.0 The rates or prices per sqm of carpet area shall be entered in the price bid which will be taken to have included in the cost of water supply/ plumbing, internal and external electricity/lighting, construction of overhead tanks/ sumps at ground level, barbed wire fencing, internal roads, landscaping work, etc within the premises/ land under Smart City Limited is to come up in Bihar.
- 6.0 The whole cost of constructing the housing scheme as mentioned in above para shall be included as there will be no item provided for which the rate can be given and the cost quoted shall be deemed to be inclusive of costs of all the related Items of Work.
- 7.0 General directions and descriptions of work and materials are not necessarily repeated or summarized in the Price Bid. References to the relevant sections of the contract documentation shall be made before entering rates or price in the Price Bid.
- 8.0 The method of measurement of completed work shall be on carpet area basis for which payment shall be made as per milestone indicated in the bid documents.
- 9.0 Errors will be corrected by the Employer for any arithmetic errors pursuant to Clause 29 of the Instructions to Bidders.
- 10.0 Rock is defined as all materials which, in the opinion of the Engineer, require blasting, or the use of metal wedges and sledgehammers, or the use of compressed air drilling for its removal, and which cannot be extracted by ripping with a tractor of at least 150 kW with a single rear mounted heavy duty ripper.

PRICE BID

I/we hereby tender to execute the whole of the work described in the:

Name of the Work: “Design, Development, Construction of Open Air Theatre, Sports Complex (Cricket/Football/Badminton etc.), Swimming pool, Walkways, Amenities, High Mast Lighting facility, Street Lighting & Electrification Works, Utility services and Renovation works at Sandy’s Compound including Operation & Maintenance for a period of Three (03) Years and Defects Liability Period of for a period of Two Years under Bhagalpur Smart City Mission, Bhagalpur on Engineering, Procurement & Construction basis”.

Scope of work include Surveying, Geo-technical investigation, Architectural Planning & Design, Engineering, Procurement, preparation of detailed structural design & drawing, for the Development of Sandy’s Compound (total land area of 81.60 Acres approx.) after obtaining approval from competent authority including Construction of Walkways, New & existing Badminton Court Building, Open Air Theatre, Swimming Pool, Cricket Field & Drainage, Gate Complex (Entrance/Exit) including Security Guard Room, Vehicle Parking sheds, Special Entrance/Exit gates, Toilet blocks, Multi-purpose Ground, Sculpture court, Basket Ball & Lawn Tennis Court, Renovation of Station Club building, Boundary wall, Cafeteria, Kids play area, Nehru Memorial, Gym Building, Cleave land memorial including Water supply & Sanitation, Sewer network, Internal & External Electrification works including High mast Lighting & street lighting facility, storm water drainage, rain water harvesting, landscaping and internal roads etc., on EPC basis (complete in all respect internal and external finish) and Operation & maintenance of Sandy’s Compound for a period of Three (3) Years and two (2) years of defect liability period .

PRICE BID FORMAT

SL.NO.	DESCRIPTION OF ITEM OF WORK (A)	Amount (In Rupees) Inclusive of All tax including GST
1	Construction of Walk Way	
2	Construction of Guard Room Cum Ticket Counter	
3	Electrification of Guard Room	
4	Construction of Cafeteria	
5	Landscaping & Development	
6	Development of Kids Play Area(70x60m)	
7	Renovation of Nehru Memorial(32x32m)	
8	Renovation of Station Club	
10	Construction of Specific/Emergency Gate	

9	Construction of Entrance gate	
11	Construction of Swimming Pool(25x50M)	
12	Swimming Pool Mech and Other	
13	Construction of Entrance Plaza with paver parking	
14	Renovation of Open Air Theatre	
15	Development of Basket Ball Court	
16	Construction of Trellis walkway	
17	Renovation of Existing Badminton court(4 courts)	
18	Construction of New Badminton Court Building(3 courts)Including all supply arrangement of AC.	
19	Renovation` of Gym Building(G+1)	
20	Renovation of Lawn Tennis Court	
21	Development of Cricket Field and its Drainage	
22	Renovation of Cleveland Memorial	
23	Construction of Toilet Blocks	
24	Development of Multipurpose ground (275x325m)with 2.75km Drain)	
25	Development of Sculpture court	
27	Construction of Boundary wall (External)	
28	Construction of Boundary wall (Internal)	
29	Supply & Providing Lighting facility for Sport’s Complex	
30	Supply & providing of General Lighting facility	
	SUB TOTAL (F)	
31	Operation & Maintenance of Sandy’s Compound for Three year period (Inclusive of all) 3 years Lump sum (to be quoted for 3 years) (G)	
	GRAND TOTAL (H) = (F+G) inclusive of all taxes and GST	

(In Figures): ----- (In Words) Rupees: (-----) And
 should this tender be accepted, I/we do hereby agree and bind myself/ ourselves to abide by and fulfill all the conditions annexed to the said specifications in default thereof to or forfeit and pay to BSCL, the penalties of sums of money mentioned in the said condition viz: -----

Note:- 1. The Quantity mentioned under description is only indicative and not final and it cannot be considered as basis of any claim. This quantity is subject to increase or decrease by 20%.

Note:-2. Rate quoted for Item of works will be on lump-sum basis as one Item and inclusive of all taxes and GST)

Note:-3 The rate quoted by the bidder shall be inclusive of all taxes and including GST.

Note: 4 - The BOQ Quantity which is attached at Section 13, Volume 6 is indicative but not exhaustive and not limited to as mentioned.

Dated: -

Note: Price Bid is available online on the website <http://www.eproc.bihar.gov.in>. Bidder shall Fill Price Bid as per instruction given in Instruction to Bidder through online.

SECTION 10

SECURITIES AND OTHER FORMS

BID SECURITY (BANK GUARANTEE)

WHEREAS, [name of Bidder] (hereinafter called "the Bidder") has submitted his Bid dated [date] for the construction of [name of Contract hereinafter called "the Bid"].

KNOW ALL PEOPLE by these presents that we _____ [name of Bank] of _____

[Name of country] having our registered office at (hereinafter called "the Bank") are bound unto _____

[Name of Employer’s Representative] (Here in after called "the Employer’s Representative") in the sum of * for which payment well and truly to be made to the said Employer’s Representative the Bank itself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this _____ day of 2019

THE CONDITIONS of this obligation are:

1.0 If after Bid opening the Bidder withdraws his bid during the period of Bid validity specified in the Form of Bid;

OR

2.0 If the Bidder having been notified to the acceptance of his bid by the Employer during the period of Bid Validity:

3.0 fails or refuses to execute the Form of Agreement in accordance with the Instructions to Bidders, if required; or

4.0 fails or refuses to furnish the Performance Security, in accordance with the Instructions to Bidders; or

5.0 Does not accept the correction of the Bid Price pursuant to Clause 27.

We undertake to pay to the Employer up to the above amount upon receipt of his first written demand, without the Employer having to substantiate his demand, provided that in his demand the Employer will note that the amount claimed by him is due to him owing to the occurrence of one or any of the three conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including the date _____** days after the deadline for submission of Bids as such deadline is stated in the Instructions to Bidders or as it may be extended by the Employer, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this guarantee should reach the Bank not later than the above date.

DATE

SIGNATURE

WITNESS

SEAL

[Signature, name and address]

6.0 The Bidder should insert the amount of the guarantee in words and figures denominated in Indian Rupees. This figure should be the same as shown in Clause 16.1 of the Instructions to Bidders.

7.0 45 days after the end of the validity period of the Bid. Date should be inserted by the Employer before the Bidding documents are issued.

PERFORMANCE BANK GUARANTEE

To

_____ [name of Employer’s Representative]

_____ [address of Employer’s Representative]

WHEREAS, _____ [name and address of

Contractor](hereafter called "the Contractor") has undertaken, in pursuance of

Contract No. _____ dated _____ to execute

_____ [name of Contract and brief description of Works] (hereinafter called "the Contract").

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligation in accordance with the Contract;

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

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you on behalf of the Contractor, up to a total of _____

[Amount of guarantee]* (in words), such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of _____ [amount of guarantee] as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

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

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed there under or of any of the Contract

documents which may be made between your and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until 28 days from the date of expiry of the Defect Liability Period. Signature and Seal of the guarantor

Name of Bank

Address

Date

*An amount shall be inserted by the Guarantor, representing the percentage the Contract Price specified in the Contract including additional security for unbalanced Bids, if any and denominated in Indian Rupees.

BANK GUARANTEE FOR ADVANCE PAYMENT

PERFORMANCE BANK GUARANTEE

To

_____ [name of Employer’s Representative]

_____ [address of Employer’s Representative]

_____ [name of Contractor]

Gentlemen:

In accordance with the provisions of the Conditions of Contract, sub-clause 14.2 ("Advance Payment") of the above-mentioned Contract, [name and address of Contractor] (herein after called "the Contractor") shall deposit with [name of Employer’s Representative] a bank guarantee to guarantee his proper and faithful performance under the said Clause of the Contract in an amount of

[amount of Guarantee]* [in words].

We, the [bank of financial institution], as instructed by the Contractor, agree unconditionally and irrevocably to guarantee as primary obligator and not as Surety merely, the payment to [name of Employer’s Representative] on his first

demand without whatsoever right of obligation on our part and without his first claim to

the Contractor, in the amount not exceeding _____ [amount of guarantee]* [in words]. _____

We further agree that no change or addition to or other modification of the terms of the Contractor or Works to be performed there under or of any of the Contract documents

which may be made between _____ [name of Employer’s Representative] and the Contractor, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall remain valid and in full effect from the date of the advance

payment under the Contract until [name of Employer’s Representative] receives full repayment of the same amount from the Contractor.

Yours truly,

Signature and Seal: _____

Name of Bank / Financial Institution: _____

Address: _____

*An amount shall be inserted by the Bank or Financial Institution representing the amount of the Advance Payment, and denominated in Indian Rupees.

LETTER OF ACCEPTANCE

(Letter head paper of the Employer’s Representative)

(Date) _____

To

(Name and address of the Contractor)

Dear Sirs,

This is to notify you that your Bid dated _ _ for

Execution of _____

the _____ (name of the contract and identification

number, as given In the Instructions to Bidders) for the Contract

Price of Rupees _____ (_____)

_____ (amount in words and figures), as corrected and modified in accordance with the Instructions to Bidders¹ is hereby accepted by our agency.

You are hereby requested to furnish Performance Security, in the form detailed in Para

32.1 of ITB for an amount equivalent to Rs. _____ within 21 days of the receipt of this letter of acceptance valid up to 28 days from the date of _____ expiry of defects Liability Period i.e. up to _____ and sign the contract, failing Which action as stated in Para 32.4 of ITB will be taken.

Yours faithfully,

Authorized Signature

Name and title of Signatory

(Employer’s Representative)

¹. Delete "corrected and" or "and modified" if only one of these actions applies. Delete as corrected and modified in accordance with the Instructions to Bidders, if corrections or modifications have not been affected.

ISSUE OF NOTICE TO PROCEED WITH THE WORK

(Letter head of the Employer’s Representative)

(Date) _____

To

(Name and address of the Contractor)

Dear Sirs,

Pursuant to your furnishing the requisite security as stipulated in ITB Clause 32.1 and signing of the Contract for the construction of

_____ at Bid Price of Rs. _____

You are hereby instructed to proceed with the execution of the said works in accordance with the contract documents.

Yours faithfully,

(Signature, name and title of
Employer’s Representative)

AGREEMENT FORM

Agreement

This agreement, made the _____ day of _____ between _____

(name and address of Employer) [hereinafter called "the Employer] and _____

_____ (name and address of contractor) hereinafter called "the

Contractor" of the other part.

Whereas the Employer is desirous that the Contractor execute

_____ (name and identification number of _____ Contract) (hereinafter called "the _____ Works") and the Employer has accepted the Bid by the Contractor for the execution and completion of such Works and the remedying of any defects therein, at a cost of Rs. _____.

NOW THIS AGREEMENT WITNESSETH as follows :

1. In this Agreement, words and expression shall have the same meanings as are respectively assigned to them in the conditions of contract hereinafter referred to and they shall be deemed to form and be read and construed as part of this Agreement.

2. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any defects therein in conformity in all aspects with the provisions of the contract.

3. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying the defects wherein Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

4. The following documents shall be deemed to form and be ready and construed as part of this Agreement viz.

- a. The Contract Agreement
- b. Letter of Acceptance, notice to proceed with the works
- c. Contractor’s Bid
- d. Contract Data
- e. Conditions of Contract including Special Conditions of Contract
- f. Employer’s Requirements
- g. Technical Specifications
- h. Concept Drawings & Data along with Tender documents
- i. Any other document listed in the Contract Data as forming part of the Contract

In witnessed whereof the parties there to have caused this Agreement to be executed the day and year first before written.

The Common Seal of _____ was hereunto affixed in
the presence of : _____

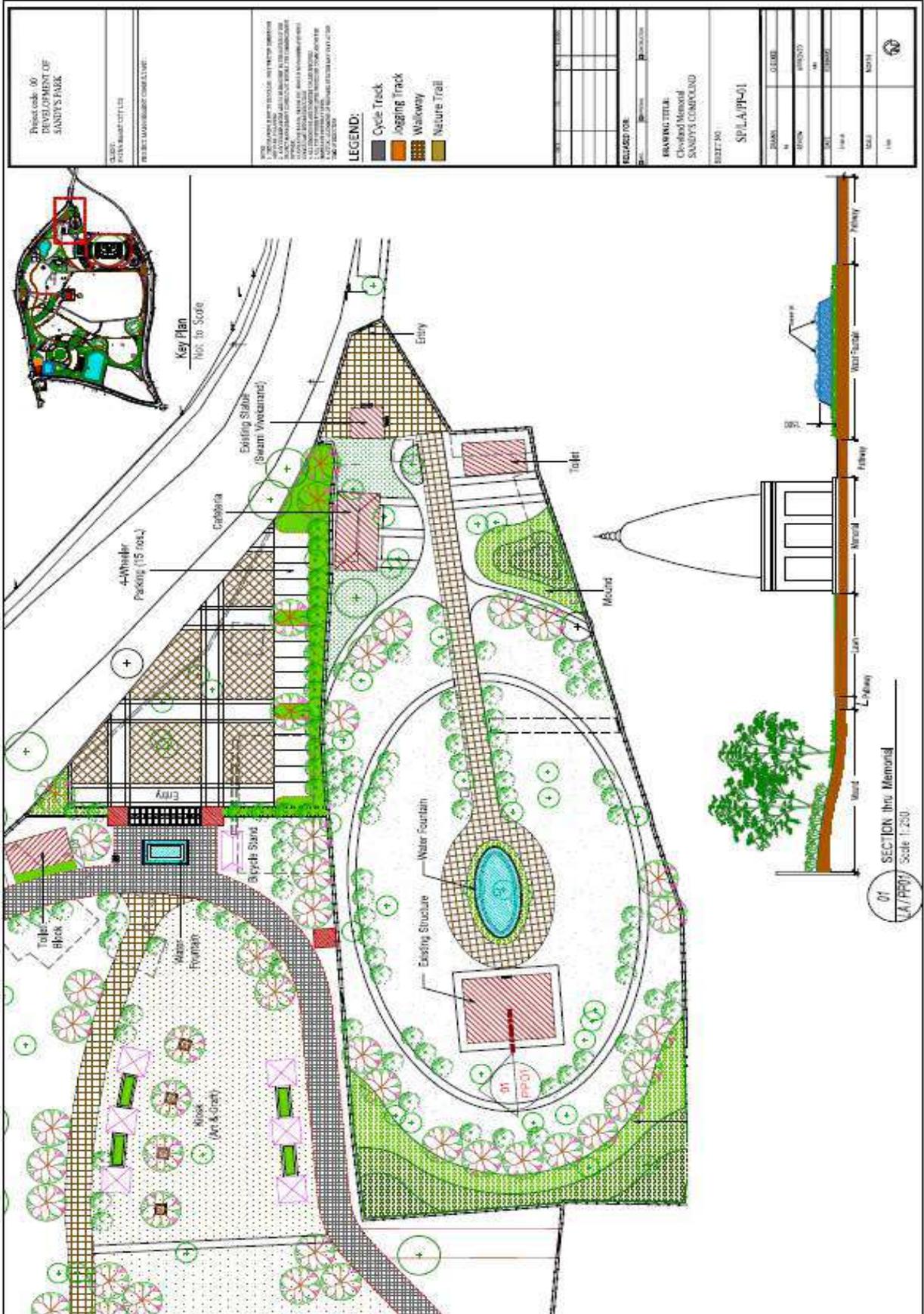
Signed, Sealed and Delivered by the said

in the presence of:

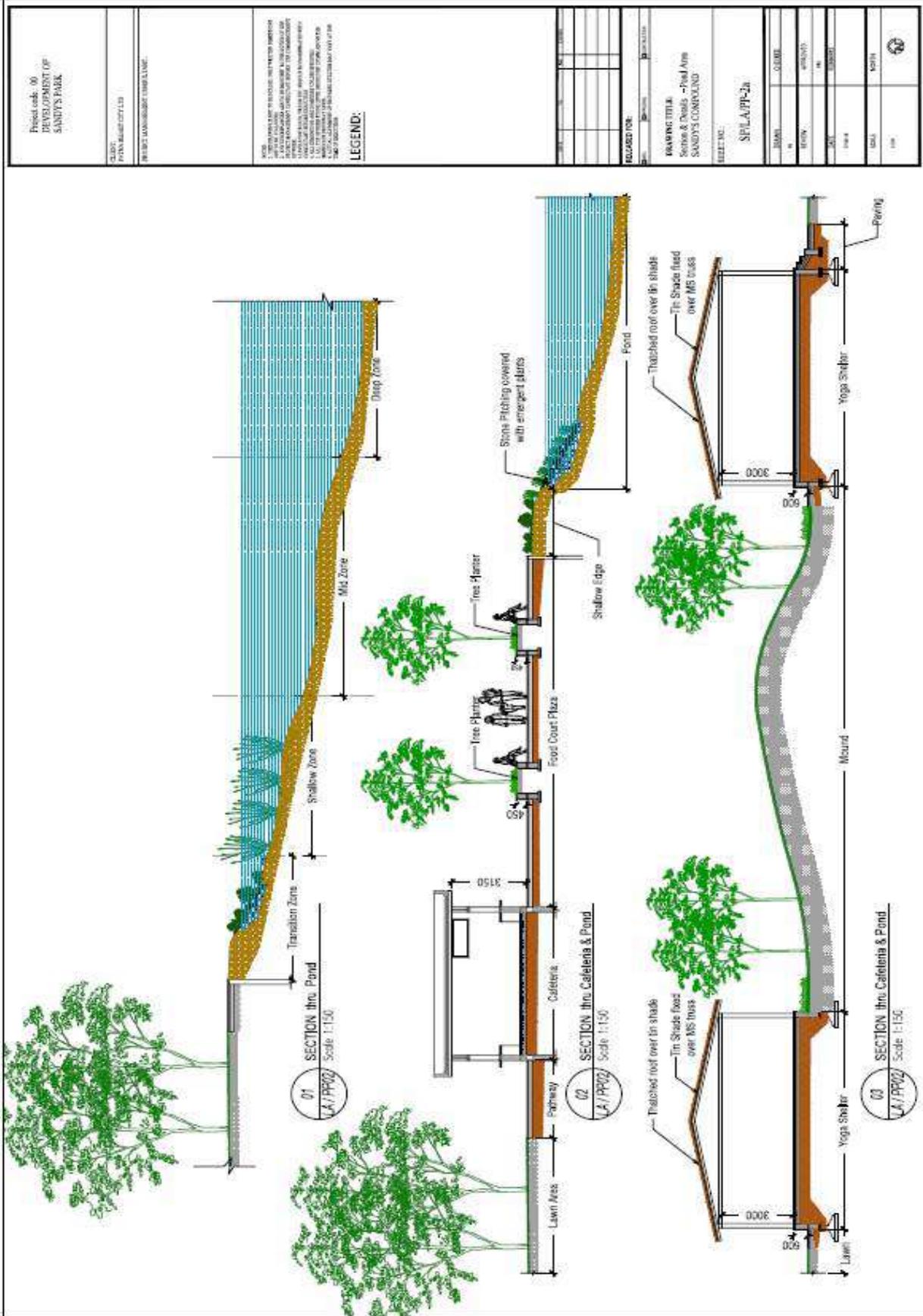
Binding Signature of Employer’s Representative

Binding Signature of Contractor

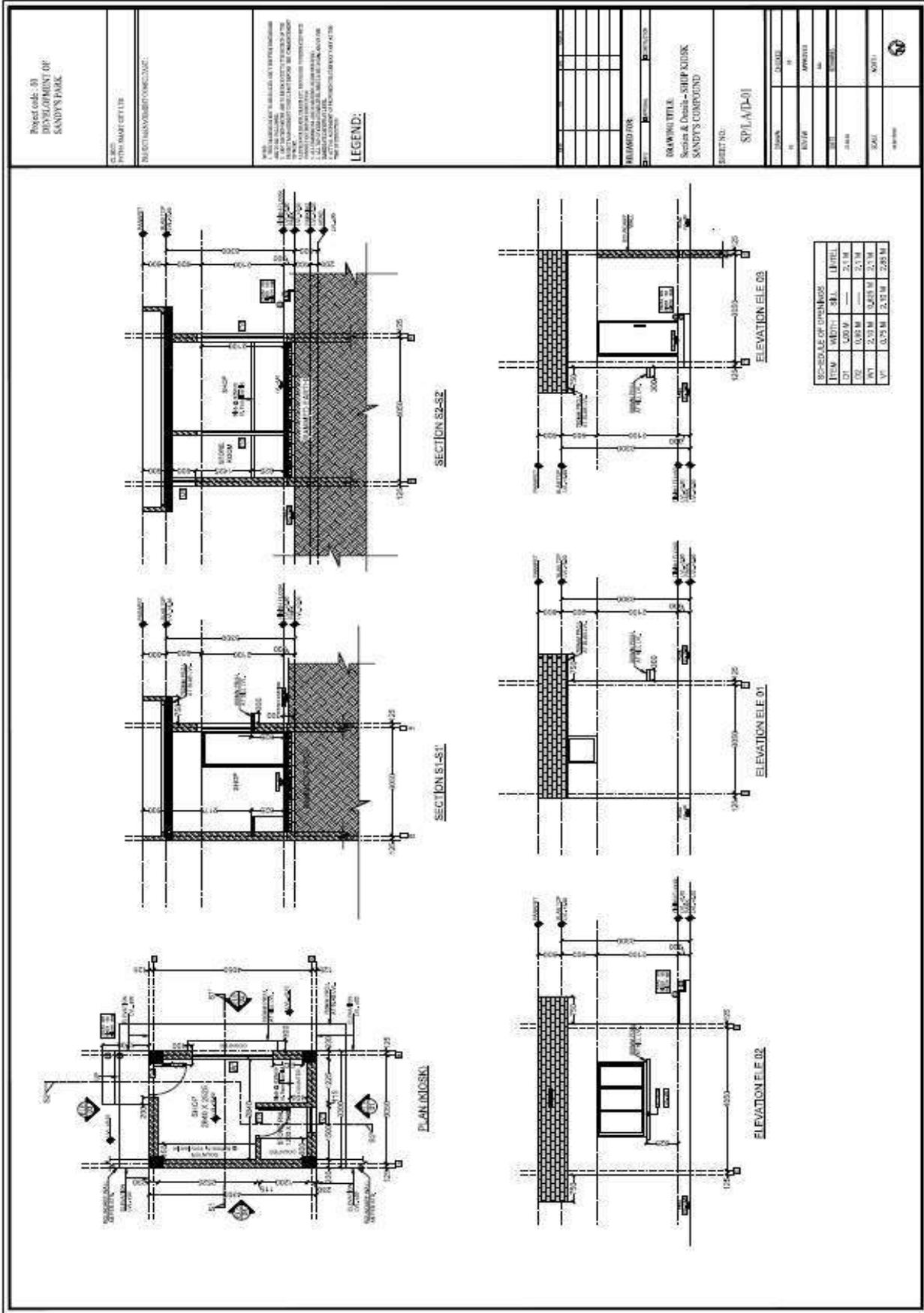
VOLUME-I
SECTION 11
DRAWINGS

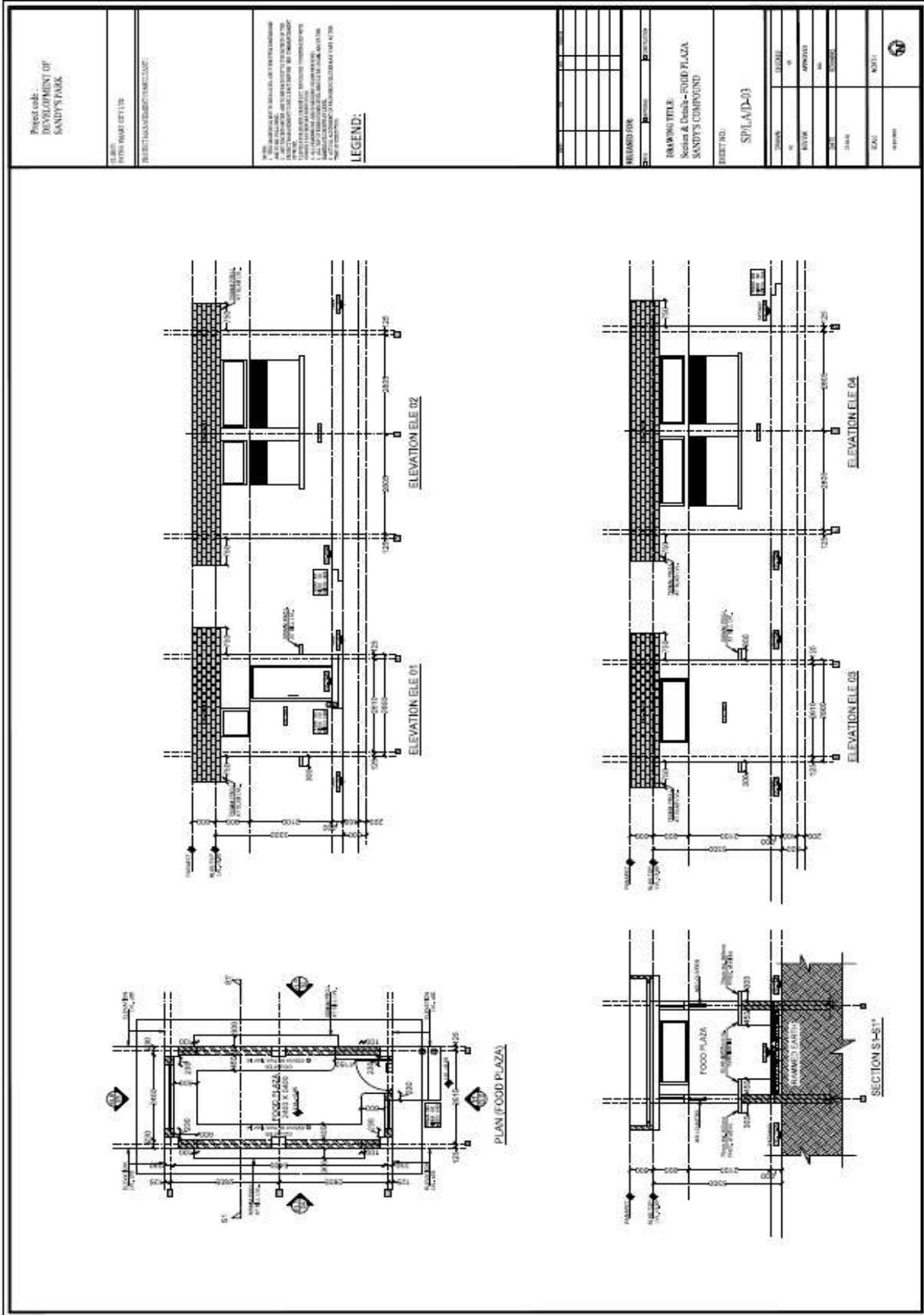












Project code:
DEVELOPMENT OF
SANDY'S PARK

CL 000
P/1701 (PRINT) 07/11/18

REVISIONS

THIS DRAWING IS SUBJECT TO THE GENERAL CONDITIONS OF CONTRACT AND THE SPECIFICATIONS AND DRAWINGS OF THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE RELEVANT AUTHORITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE RELEVANT AUTHORITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE RELEVANT AUTHORITIES.

LEGEND:

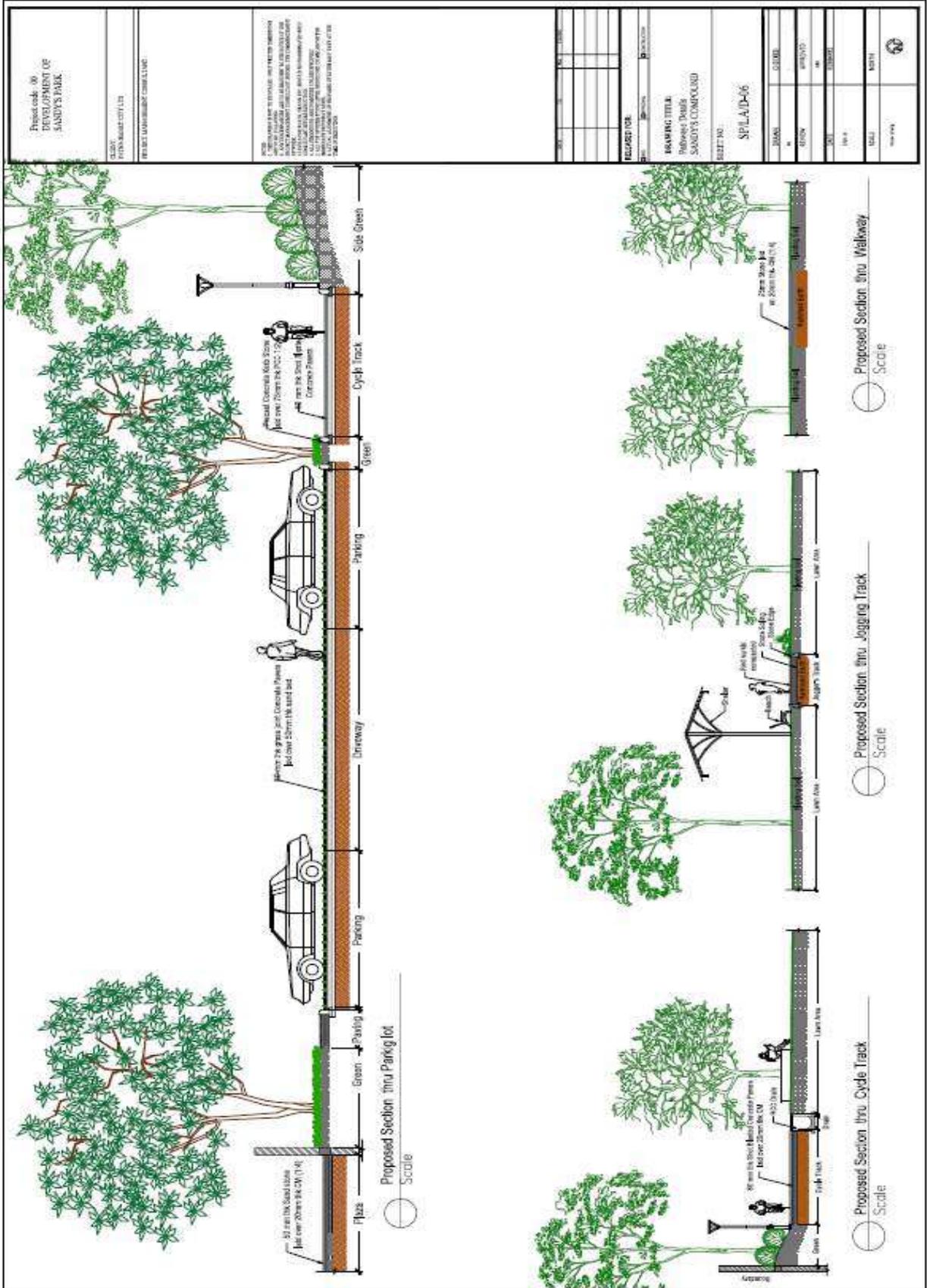
REVISIONS

DRAWING TITLE
Scales & Details – FOOD PLAZA
SANDY'S COMPOUND

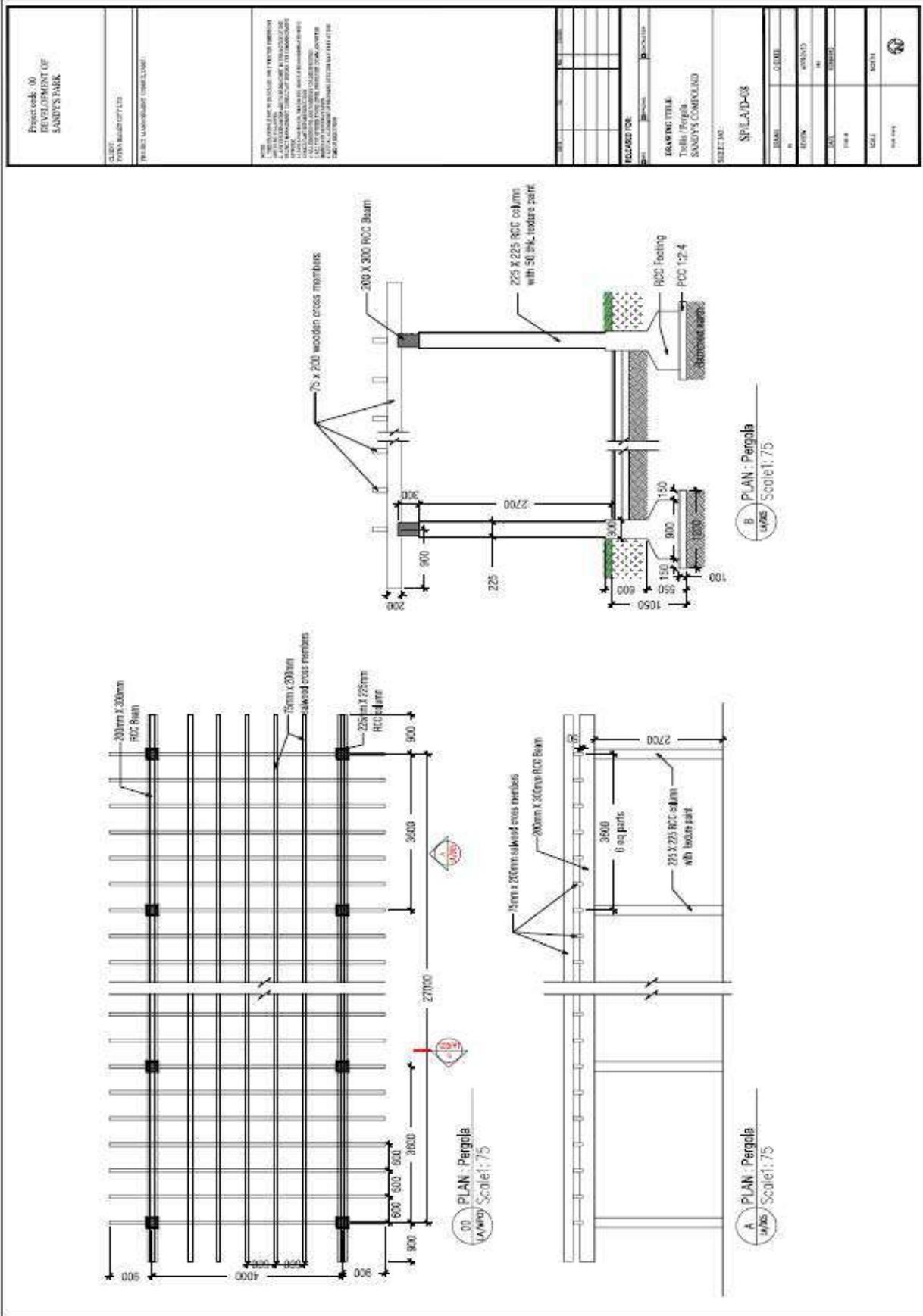
SHEET NO.
S/PLA/D-03

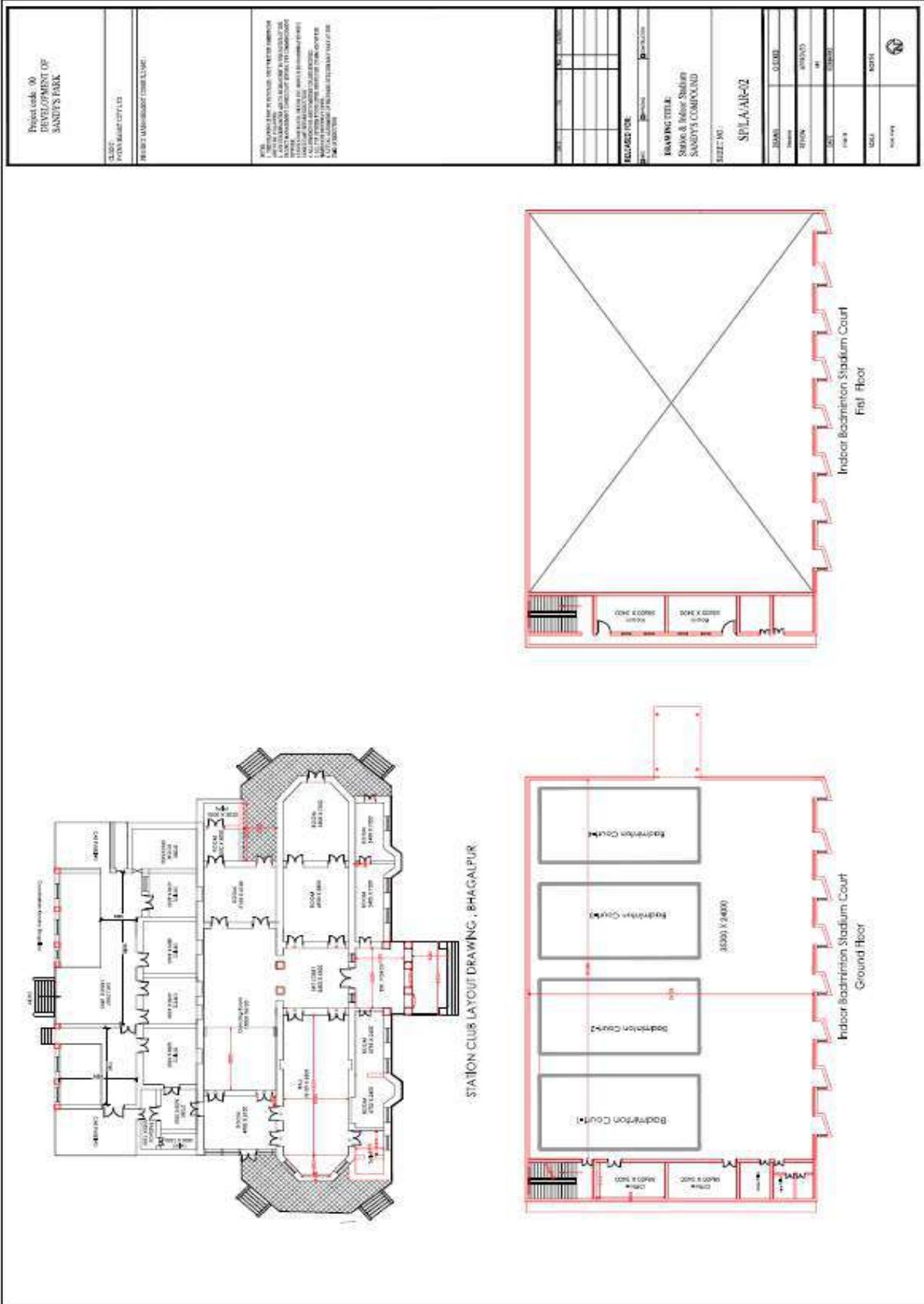
DATE	NO.	BY	APP'D
18/07/18	01	MM	MM
18/07/18	02	MM	MM
18/07/18	03	MM	MM
18/07/18	04	MM	MM
18/07/18	05	MM	MM
18/07/18	06	MM	MM
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18/07/18	09	MM	MM
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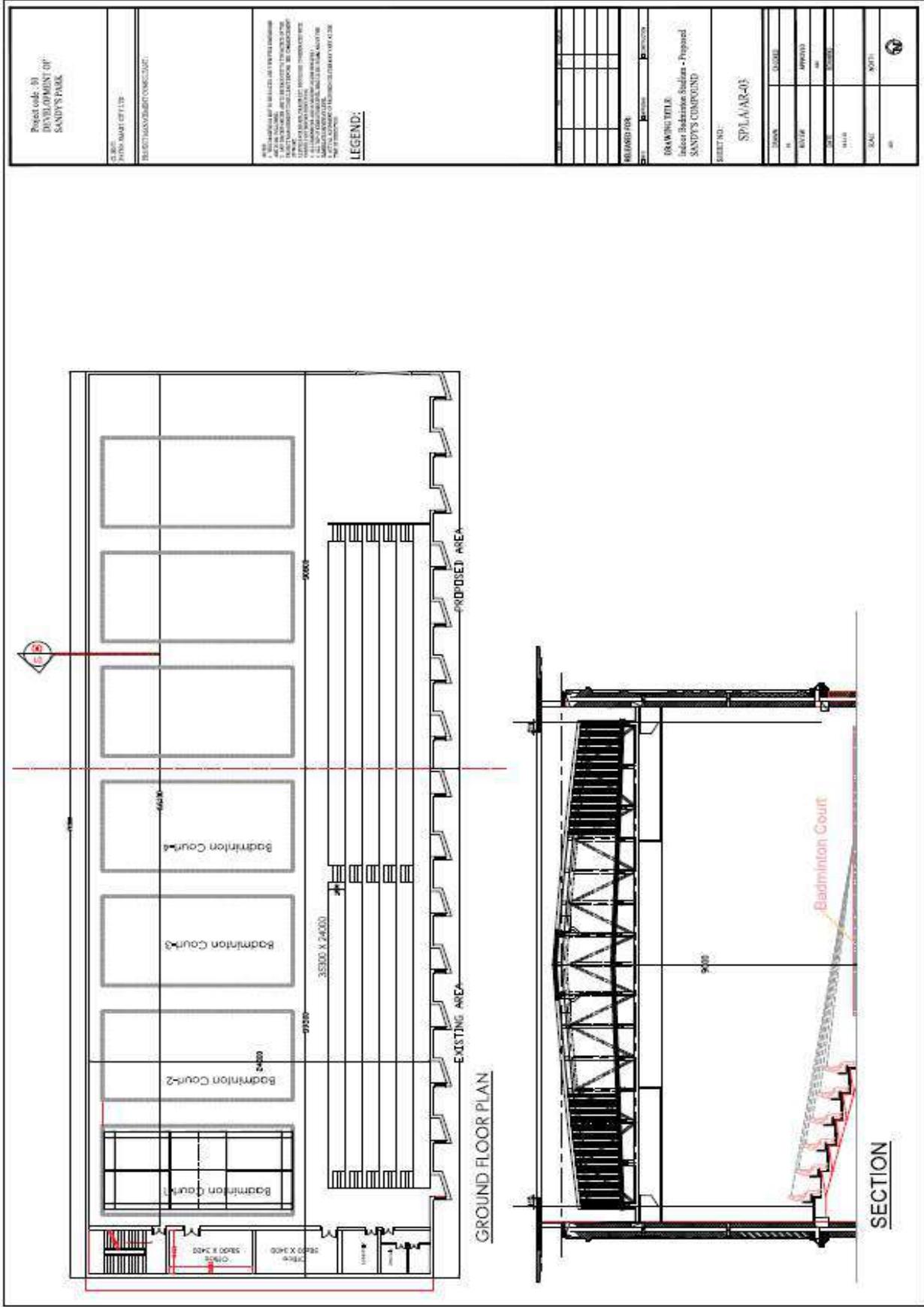


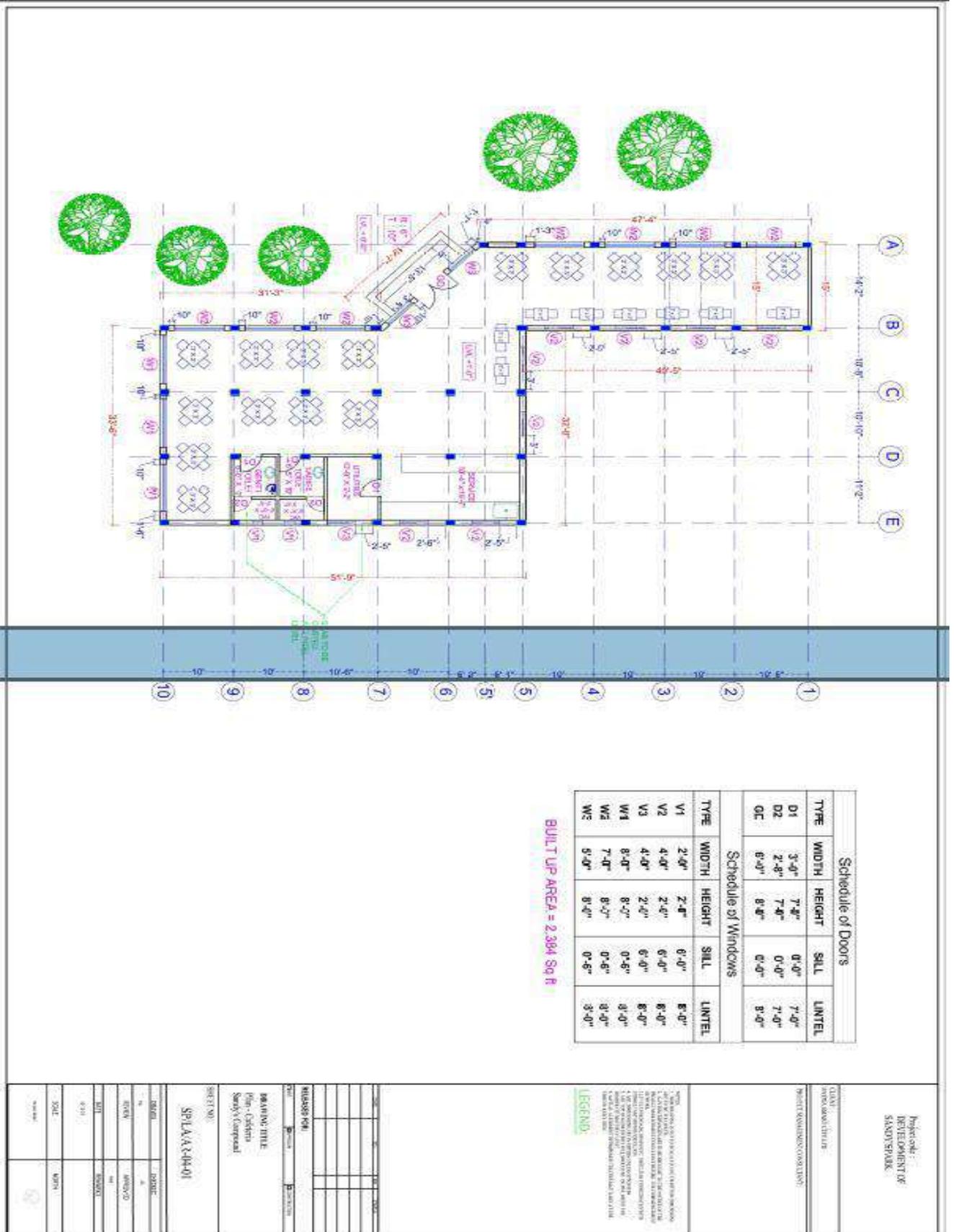


Project code: 06 DEVELOPMENT OF SANDY'S PARK	
CLIENT: PITCHAKARNIT CITY LTD	PROJECT LOCATION: CHANG ALIANG
<p>THIS DRAWING IS FOR INFORMATION ONLY. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS ON SITE BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE RELEVANT AUTHORITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE RELEVANT AUTHORITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE RELEVANT AUTHORITIES.</p>	
DATE: 15/05/2024	SCALE: 1:100
DESIGNED BY: [Name]	CHECKED BY: [Name]
DRAWING TITLE: Reference Details SANDY'S COMPOUND	
SHEET NO: SPLA-D-06	
NO. OF SHEETS: 06	NO. OF SHEETS: 06
DATE: 15/05/2024	DATE: 15/05/2024
SCALE: 1:100	SCALE: 1:100
PROJECT NO: 06	PROJECT NO: 06









Schedule of Doors					
TYPE	WIDTH	HEIGHT	SILL	LINTEL	
D1	3'-0"	7'-8"	0'-0"	7'-0"	
D2	2'-8"	7'-8"	0'-0"	7'-0"	
GC	6'-0"	8'-0"	0'-0"	8'-0"	

Schedule of Windows					
TYPE	WIDTH	HEIGHT	SILL	LINTEL	
V1	2'-0"	2'-8"	0'-0"	8'-0"	
V2	4'-0"	2'-0"	0'-0"	8'-0"	
V3	4'-0"	2'-0"	0'-0"	8'-0"	
W1	8'-0"	8'-0"	0'-6"	8'-0"	
W2	7'-0"	8'-0"	0'-6"	8'-0"	
W3	6'-0"	8'-0"	0'-6"	8'-0"	

BUILT UP AREA = 2,394 Sq Ft

Project: DEVELOPMENT OF SANDYSPARK

CLIENT: SANDYSPARK

PROJECT NUMBER: 201401

NOTES:
 1. THIS DRAWING IS TO BE USED FOR THE DESIGN OF THE BUILDING.
 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITIES.
 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITIES.
 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITIES.
 5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITIES.

LEGEND:

REVISION	DATE	BY	DESCRIPTION

DRAWING TITLE
 Plan - Sandy's Compound

SHEET NO.
 SPL.A344-01

NO.	REVISION	DATE	BY	DESCRIPTION

VOLUME-V

SECTION 12

DOCUMENTS TO BE FURNISHED BY BIDDER

Refer to Addendum to ITB

Format - 1

(For BHAGALPUR SMARTC CITY LIMITED, BHAGALPUR, BIHAR)

Name of the work	
Tender Ref. No.		
Name of the Procurement Officer	
Sl. No.	Name and address of responsive bidders in technical evaluation	
1		
2		
3		
4		
	Name and address of the non-responsive bidders	Reason for their non-responsiveness

1		
2		
3		

Signature of the tender approving authority

Format - 2

(For BHAGALPUR SMARTC CITY LIMITED, BHAGALPUR, BIHAR)

Name of the work	
Tender Ref. No.		
Name of the Procurement Officer	
Sl. No.	Name and address of the successful bidder In financial evaluation	Amount of award of work
1		
Sl. No.	Name and address of the unsuccessful bidders	Reason for unsuccessful bid
1		

2		
3		

Signature of the tender approving authority

* * * * *

VOLUME-VI

SECTION 13

Description of Items

For Reference Purpose Only

Bhagalpur Smart City Limited			
TENTATIVE ITEMS of Open Space (Sandy's Compound) (for Reference Purpose only)			
Sl. No	Description of item	Unit	Qty.
1	Walk way		
1	Cutting of Trees, including Cutting of Trunks, Branches and Removal (Cutting of trees, including cutting of trunks, branches and removal of stumps, roots, stacking of serviceable material with all lifts and up to a lead of 1000 mtrs and earth filling in the depression/pit.) Girth from 300 mm to 600 mm	Nos.	65.00
2	Earth work in excavation over areas (exceeding 30 cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth , lead up to 50 m and lift up to 1.5 m; disposed earth to be levelled and neatly dressed	Cum	4537.20
3	Supplying and Filling in plinth with local sand and under floors including, watering, ramming consolidating and dressing complete.	Cum	1134.30
4	Providing designation 100 A one brick flat soling joints filled with local sand including cost of watering, taxes, royalty all complete as per building specification and direction of E/I	Sqm	15124.00
5	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering-all work up to plinth level. 1:3:6 (1 Cement: 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	Cum	2268.60
6	40 mm thick rough chisel dressed stone flooring over 20 mm (average) thick base including pointing with C.M 1:2 (1 cement :2 stone dust) with an admixture of pigment to match the shade of the stone with base 1:1:1 (1 lime : 1surkhi : coarse sand or 1:5 (1 cement : 5 coarse sand) Rend Sand Stone	Sqm	14328.00
7	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering-all work up to plinth level. 1:2:4 (1 Cement: 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	Cum	119.40
8	Sitting Arrangements	Nos.	50.00
2	Item of Guard Room Cum Ticket Counter		
1	Earth work in excavation over areas (exceeding 30 cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead up to 50m and lift up to 1.5m ; disposed earth to be levelled and neatly dressed. All kinds of soil	cum	22.50
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth: consolidating each deposited layer by ramming and watering lead.	cum	14.46
3	Supplying and filling in plinth with local sand and under floors including, watering, ramming consolidating and dressing complete.	cum	4.39
4	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level. 1:3: 6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size)	cum	2.66

5	Providing 125 mm thick brick work in CM (1:4) in superstructure including curing, taxes and royalty all complete as per building specification and direction of E/I (with fly ash Brick).Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	13.59
6	Providing and laying in position machine batched, machine mixed and machine vibrated design mix cement concrete of specified grade for reinforced cement concrete structural elements, excluding the cost of centering, shuttering, finishing and reinforcement, M-20 grade reinforced cement concrete All work up to plinth level	cum	1.86
7	Reinforcement for RCC work including straightening. Cutting, bending, placing in position and binding all complete. Thermo-Mechanically Treated bars TMTC-500-10 mm dia.	kg	146.09
8	Centering and shuttering including strutting, propping etc. and removal of form for: Walls (any thickness) including attached pilasters. Butteresses, plinth and string courses etc.	sqm	17.49
9	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - all work up to plinth level.1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size)	cum	0.73
10	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622 (Thickness to be specified by the manufacture) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer -in-Charge in skirting, risers of steps and dados over 12 mm thick bed of cement Mortar 1:3 (1cement : 3 coarse Sand) and jointing with grey cement slurry @ 3.3 kg per sqm including pointing in white cement mixed with pigment of matching shade complete.	Sqm	28.50
11	Kota stone slabs 25 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement : 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	Sqm	1.52
12	12 mm cement plaster of mix 1:4 (1 cement : 4 coarse sand)	sqm	67.99
13	15 mm cement plaster on rough side of single or half brick wall of mix. 1:4(1 cement: 4 coarse Sand)	sqm	39.26
14	6 mm cement plaster to ceiling of mix. 1:4 (1 cement : 4 coarse sand)	sqm	9.99
15	Finishing Wall with water proofing cement paint of approved brand and manufacture and of required shade to give an even shade New work (three or more coats)	sqm	117.24
16	Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc consisting of following operations : With average thickness of 120mm and minimum thickness at Khurra as 65 mm.	sqm	9.99
17	Providing and fixing ISI marked flush door shutters decorative type core of block board construction with frame of 1st class hard wood and well matched teak ply veneering with vertical grains or cross or cross bands and face veneers on the both faces veneers on the both face of shutters. 30mm thick including stainless steel butt hinges with necessary screws	sqm	3.72
18	Providing wood work in frames of doors, windows, clearstory windows and other frames, wrought framed and fixed in position Second Class teak wood	cum	0.20
19	Providing 40 x 5 mm flat iron hold fast 40 cm long including fixing to frame with 10 mm dia polyethylene bots, nuts and wooden plugs and embedding in	each	18.00

	cement concrete block 30x10x15 cm 1:3:6 mix (1 cement: 3 coarse sand: 6 graded stone aggregate 20 mm nominal size)		
20	Providing and fixing aluminum sliding door bolt anodized (anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour and shade with nuts and screws etc. 300 x 16 mm	each	1.00
21	Providing and fixing aluminum handles anodized (anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour and shade with necessary screws etc. complete : 125 mm	each	6.00
22	Providing and fixing aluminum hanging floor door stopper anodized (anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour and shade with necessary screws etc. complete. Twin rubber stopper	each	2.00
23	Providing and fixing aluminum sliding tower bolt anodized (anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour and shade with nuts and screws etc. 300 x 10 mm	each	1.00
24	Providing and fixing glazed shutters for doors, windows and clerestory windows using 10kg/square polyethylene (4mm thick) glass panes including black enamled M.S butt hidge with necessary screws. 30 mm thick	sqm	0.90
25	Providing and fixing circular cast iron box for ceiling fan clamp 140 mm internal dia, 73 mm height, 5 mm thick rim bottom and top lids, 1.5 mm thick M.S sheet with its top surface hacked for proper bonding top lid shall be screwed into the cast iron box by means of 3.3 mm dia round headed screws, one; of at the corners. Clamps shall be made of 12mm dia M.S. bar bent to shape as per standard drawing.	each	2.00
26	With ready mixed pink or grey primer of approved brand and manufacture on woodwork (hard and soft wood)	sqm	8.78
27	Painting with synthetic enamel paint of approved brand and manufacture to give an even shed. Two or more coats on new work	sqm	8.78
28	providing and placing on terrace (at all floor levels) polyethylene water storages tank, ISI :12701 marked, with cover and suitable looking arrangement and making necessary holes for inlet , Outlet and over flow pipes but without fittings and the base support for tank.	Litre	1000.00
29	Providing and fixing mirror of superior glass (of approved quality) and of required shapes and size with plastic molded frame of approved make and said with 6mm thick hard. Oval shape 450 x 350 mm Mirror	Nos.	4.00
30	Carriage		
	Brick	Thousand	5832.79
	Local Sand	Cum	4.58
	Coarse Sand	Cum	8.62
	Stone Chips	Cum	4.10
	Cement	Cum	8.93
	Steel	Cum	0.02
3	Electric work Wiring and Light of Guard Room		
1	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FR PVC insulated copper conductor single core cable in surface/ recessed medium class PVC conduit, with modular switch, modular plate, suitable size G.I. box etc as required. Group C	Nos.	10.00

2	Wiring for light/ power plug with 2X4 sq. mm FR PVC insulated copper conductor single core cable in surface/ recessed medium class PVC conduit along with 1 No 4 sq. mm FR PVC insulated copper conductor single core cable for loop earthing as required.	Polyethylene	50.00
3	Wiring for circuit/ sub main wiring along with earth wire with the following sizes of FR PVC insulated copper conductor, single core cable in surface/ recessed medium class PVC conduit as required, 2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire	Polyethylene	50.00
4	Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/ recess including cutting the wall and making good the same in case of recessed conduit as required. 25 mm	Polyethylene	20.00
5	Supplying and fixing following modular switch/socket on the existing modular plate & switch box including connection but excluding modular plate etc. as required. 5/6 amps switch	Each	2.00
6	Supplying and fixing following modular switch/socket on the existing modular plate & switch box including connection but excluding modular plate etc. as required. 3 pin, 5/6 amps socket outlet	Each	2.00
7	Supplying and fixing following modular switch/socket on the existing modular plate & switch box including connection but excluding modular plate etc. as required. Telephone socket outlet	Each	1.00
8	Supplying and fixing stepped type electronic fan regulator on the existing modular plate/ switch box including connections but excluding modular plate etc. as required.	Each	1.00
9	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess including providing and fixing 3 pin 5/6 A modular socket outlet and 5/6 A modular switch, connections, painting etc. as required.	Each	1.00
10	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess including providing and fixing 6 pin 5/6 & 15/16 Aamps modular socket outlet and 15/16 amps modular switch, connections, painting etc. as required.	Each	2.00
11	Supplying and fixing 2 pin, 6 amp ceiling rose on the existing junction box/ wooden block including connection etc as required.	Each	7.00
12	Supplying and fixing following way, single pole and neutral, sheet steel, MCB distribution board, 240 V, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator), 2+ 6 way, Double door	Each	1.00
13	Supplying and fixing following rating, 240/415 volts, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required. 6/32 amps, Single pole	Each	5.00
14	Supplying and fixing TPN sheet steel enclosure on on surface/ recess along with 63 amps 415 volts, "C" curve TPN MCB complete with connections, testing and commissioning etc. as required.	Each	1.00
15	Earthing with G.I. earth pipe 4.5 meter long, 40 mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoal/ coke and salt as required.	set	1.00
16	Providing and fixing 25 mm X 5 mm G.I strip on surface or in recess for connections etc. as required.	no	10.00

17	Supplying and fixing single wall/ ceiling mounted 20/22 watt LED type batten fitting complete with electronic driver and LED tube etc directly on wall/ ceiling including connection with 1.5 sq. mm FR PVC insulated copper conductor cable and earthing the body etc. as required.	Each	5.00
18	Supplying and fixing single 40/45 watt LED type street light with die cast aluminum housing for ingress protection of IP65 and complete with all accessories etc, on pole/building including connection with FR PVC insulated copper conductor cable and earthing the body etc. as required.	Each	1.00
19	Laying of one number PVC insulated and PVC sheathed/ XLPE power cable of 1.1 KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required. up to 35 sq. mm	mtr	70.00
20	Supply and installation of Regular/ standard model A.C ceiling fan of 1200 mm sweep including wiring the down rods of standard length (up to 30 cm) with 1.5 sq. mm FR PVC insulated copper conductor etc. as required.	Nos.	1.00
21	3.5 core, 25 sq. mm, XLPE/PVC insulated PVC. sheathed (Heavy duty) Armoured electric cable with aluminum conductor	MTR	70.00
22	Providing and fixing M.S. fan clamp type I or II of 16 mm dia M.S. bar bent to shape with hooked ends in R.C.C. slabs, beams during laying including painting the exposed portion of loop, all as per standard design complete.	Each	1.00
23	Providing and fixing charged ABC type fire extinguisher including the cost of fixing with nut, bolts etc as required. 5 Kg	Nos.	1.00
24	P&F of IP51 direct or CT operated, 1x240/ 3x240 volts, 50 Hz static watt-hour polyethylene (kwh) having resolution 0.1/ 0.01 kwh, 1/ 0.5 accuracy class, LED indicators for tamper operation (Reverse &/or earth connection), pulsating LED indicator for polyethyneology, electromechanical counter, cover plate for body and terminal sealing, including making connection, testing etc. as required. up to 60 ampere three phase polyethylene	Each	1.00
Total Amount			
4	Cafeteria in Sandys PARK (Civil)		
1	Demolishing R.C.C. work including stacking of steel bars and disposal of unserviceable material within 50 meters lead:	cum	93.28
2	Extra for cutting reinforcement bars in R.C.C. or R.B. work (Payment shall be made on the cross sectional area of R.C.C. or R.B. work)	per RCC	40.00
3	Demolishing brick work including stacking of serviceable material and disposal of unserviceable material within 50 polyethylene’s lead: In cement mortar	cum	619.72
4	Disposal of building rubbish / malba / similar unserviceable, dismantled or waste materials by mechanical means, including loading, transporting, unloading to approved municipal dumping ground or as approved by Engineer-in-charge, beyond 50 m initial lead, for all leads including all lifts involved.	cum	713.52
5	Surface dressing of the ground including removing vegetation and inequalities not exceeding 15 cm deep and disposal of rubbish, lead up to 50 m and lift up to 1.5 m All kinds of soil.	100sqm	3.46
6	Earth work in excavation in foundation trenches or drains (not exceeding 1.5m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50m. All kinds of soil	Cum	328.56

7	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering lead.	Cum	193.74
8	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering lead. Extra for every additional lift of 1.5 m or part thereof in : All kinds of soil	Cum	28.85
9	Supplying and Filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete.	cum	252.20
10	Supplying chemical emulsion in sealed containers including delivery as specified. Chlorpyriphos/Lindone emulsifiable concentrate of 20%	litre	485.84
11	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering-All work up to plinth level:		
	1:2:4(1 Cement:3 coarse sand: 6 graded stone aggregate 20mm nominal size)	cum	22.16
	1:4:8(1 Cement: 4 coarse sand:8 graded stone aggregate 40 mm nominal size)	cum	26.10
12	Centering and shuttering including strutting, propping etc. and removal of form work for: Foundations, footings, bases for columns	Sqm	74.90
13	Providing and laying damp-proof course 50mm thick with cement concrete 1:2:4(1 cement: 2 coarse sand: 4 graded stone aggregate 20mm nominal size).	Sqm	22.65
14	Extra for providing and mixing water proofing material in cement concrete work in the proportion recommended by the manufacturers.	per 50 kg cement	7.25
15	Making plinth protection 50mm thick of cement concrete 1:3:6(1 cement:3 coarse sand:6 graded stone aggregate 20mm nominal size) over 75mm bed dry brick ballast 40mm nominal size well rammed and consolidated and grouted with fine sand including finishing the top smooth.	sqm	64.35
16	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and including retard setting of concrete, improve workability without impairing strength and admixtures in recommended proportions as per IS: 9103 to accelerate, reinforcement, durability as per direction of Engineer-in charge. Note:- Cement content considered in this item is @ 330 kg/cum. Excess or less cement used as per design mix is payable or recoverable separately.		
	All work up to plinth level	cum	78.20
	All work from plinth level up to floor V level	cum	83.14
17	Add for using extra cement in the items of design mix over and above the specified cement content therein.	quintal	129.07
18	Centering and shuttering including strutting, propping etc. and removal of form for:		
	Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	114.25
	Walls (any thickness) including attached pilasters. Butteresses, plinth and string courses etc.	sqm	1.00
	Suspended floors, roofs, landings, balconies and access platform.	sqm	225.50
	Shelves (Cast in situ)	sqm	12.11
	Lintels, beams, plinth beams, girders, bressumers and cantilevers.	sqm	388.84
	Columns, Pillars, Piers, Abutments, Posts and Struts.	sqm	285.27

	Small lintels not exceeding 1.5m clear span, moulding as in cornices, window sills, string courses, bands, copings, bed plates, anchor blocks and the like.	sqm	102.95
	Edges of slabs and breaks in floors and walls. Under 20cm wide	Meter	45.80
	Cornices and mouldings	sqm	3.34
	Weather shade, Chajjas, corbels, etc. including edges.	sqm	36.06
19	Extra for additional height in centering, shuttering where ever required with adequate bracing, propping etc. including cost of de-shuttering and de centering at all levels over a height of 3.5 m ,for every additional height of 1 meter or part thereof (Plan area to be measured)(Suspended floors, roots, landing, beams and balconies (Plan area to be measured)	sqm	249.50
20	Reinforcement for R.C.C work including straightening, cutting, bending, placing in position and binding all complete.		
	Thermo-Mechanically Treated bars TMTC-500-8mm dia	Kg	7568.80
	Thermo-Mechanically Treated bars TMTC-500-10mm dia	Kg	1376.17
	Thermo-Mechanically Treated bars TMTC-500-12mm dia	Kg	34440.43
	Thermo-Mechanically Treated bars TMTC-500-16mm dia	Kg	5045.96
	Thermo-Mechanically Treated bars TMTC-500-20mm dia	Kg	5504.68
21	Brick work with bricks of class designation 100A in foundation and plinth in: Cement mortar 1:6(1 cement:6 coarse sand)	cum	28.86
22	Brick work 7cm thick with F.P.S brick of class designation 100A in cement mortar 1:3(1 cement: 3 coarse sand) in superstructure.	sqm	18.24
23	Half brick masonry with bricks of class designation 100A in foundations and plinth in :Cement mortar 1:4 (1 cement: 4 coarse send)	sqm	83.37
24	Extra for half Brick masonry in superstructure above plinth level up to floor V level.	sqm	83.37
25	Extra for providing and placing in position 2 nos. 6mm dia, MS bars at every third course of half brick masonry (with F.P.S bricks)	sqm	83.37
26	Brick work with selected bricks of class designation 100A in exposed brick work including making horizontal and vertical rooves 10mm wide 12mm deep complete from ground level up to plinth level in cement mortars 1:6(1 cement: 6 course sand)	Cum	64.36
27	Extra for exposed brick work in superstructure above plinth level and up to floor level. $0.75 \times 1.5 = 1.13$	Cum	64.36
28	Providing wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position Second class teak Wood	Cum	0.21
29	Providing and fixing ISI marked flush door shutters conforming to IS: 2202 (Part I) decorative type, core of block board construction with frame of 1 st class hard wood and well matched teak 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters.35mm thick including ISI marked Stainless Steel butt hinges with necessary screws.	sqm	7.91
30	Extra for providing lipping with 2nd class teak wood battens 25mm minimum depth on all edges of shutters (over all area of door shutter to be measured)	sqm	7.91
31	providing 40x5 mm flat iron hold fast 40 cm long including fixing to frame with 10 mm diapolyethylene bolts, nuts and wooden plugs and embedding in cement concrete block 30x10x15 cm 1:3:6 mix (1 cement :3 coarse sand :6 graded stone aggregate 20 mm nominal size)	each	30.00
32	Providing and fixing aluminum sliding door bolts ISI Marked anodised (anodic coating not less than grade AC 10 as per IS:1868) transparent or dyed to required colour and shade with nuts and screws etc. complete: 250x16mm	Each	3.00

33	Providing and fixing aluminum tower bolts ISI Marked anodised (anodic coating not less than grade AC 10 as per IS:1868) transparent or dyed to required colour or shade with necessary screws etc. complete: 150x10mm	Each	10.00
34	Providing and fixing aluminum handles anodised ISI Marked (anodic coating not less than grade AC 10 as per IS:1868) transparent or dyed to required colour or shade with necessary screws etc. complete:125mm	Each	10.00
35	Providing and fixing aluminum hanging floor door stopper ISI Marked anodised (anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour and shade with necessary screws etc. complete. Twin rubber stopper	Each	5.00
36	Providing and fixing bright finished brass 100mm mortice latch and lock with six levers and a pair of anodised (anodic coating not less than grade AC 10 as per IS:1868) aluminum lever handles with necessary screws etc. complete (Best make of approved quality).	Each	3.00
37	Providing and fixing aluminum work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminum sections shall be smooth, rust free, straight, mitered and jointed mechanically wherever required including cleat angle, Aluminum snap beading for glazing / aneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) :For fixed portion Anodised aluminum (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately)	Kg	379.10
38	For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately) Anodised aluminum (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)	Kg	189.55
39	Providing and fixing glazing in aluminum 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 aluminum snap beading shall be paid in basic item):With glass panes of 4.0mm thickness (weight not less than 10.0 kg/sqm)	Sqm	53.71
40	Extra for using Toughened glass 12 mm thickness instead of glass panes of 4.0mm thickness (weight not less than 10.0 kg/sqm)	Sqm	53.71
41	Providing and fixing double action hydraulic floor spring of approved brand and manufacture conforming to IS: 6315, having brand logo embossed on the body / plate with double spring mechanism and door weight up to 125 kg, for doors, including cost of cutting floors, embedding in floors as required and making good the same matching to the existing floor finishing and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineer-in-charge. With stainless steel cover plate minimum 1.25 mm thickness	Each	2.00

42	Filling the gap in between aluminum frame & adjacent RCC/Brick/Stone work by providing weather silicon sealant over backer rod of approved quality as per architectural drawings and direction of Engineer-in-charge complete. Up to 5mm depth and 5mm width.	Meter	134.14
43	Providing and fixing aluminum round shape handle of outer dia 100mm with SS screws etc. complete as per direction of Engineer-in-charge Anodized (AC 15) aluminum	each	4.00
44	Providing and fixing 12 mm thick frameless toughened glass door shutter of approved brand and manufacture, including providing and fixing top & bottom pivot & spring type fixing arrangement and making necessary holes etc. for fixing required door fittings, all complete as per direction of Engineer-in-charge (Door handle, lock and stopper etc.to be paid separately).	sqm	4.47
45	Providing and fixing circular/hexagonal cast iron or M.S sheet box for ceiling fan clamp 140 mm internal dia, 73 mm height, 5 mm thick rim bottom and top lids, 1.5 mm thick M.S sheet with its top surface hacked for proper bonding top lid shall be screwed into the cast iron box by means of 3.3 mm dia round headed screws, one lock at the corners. Clamps shall be made of 12 mm dia M.S. bar bent to shape as per standard drawing.	Each	12.00
46	Providing and fixing 18 mm 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, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels. Granite of any colour and shade Area of slab over 0.50 sqm	sqm	14.99
47	Extra for fixing marble/granite stone over and above corresponding basic item, in facia and drops of width up to 150 mm with epoxy resin based (Araldite or equivalent) adhesive including cleaning etc. complete.	m	17.11
48	Extra for providing opening of required size & shape for wash basins/kitchen sink in kitchen platform. Vanity counters and similar location in marble/stone work including necessary holes for pillar taps etc. including rubbing and polishing of cut edges etc. complete.	each	2.00
49	Providing and laying flamed finish Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20mm(average) thick base of cement mortar 1:4(1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing , curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge :Flamed finish granite stone slab Jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent.	sqm	27.50
50	Providing and laying vitrified (Unpolished) 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 20 mm thick cement mortar 1:4 (1 cement: 4 coarse Sand) including grouting the joint with white cement and matching pigments etc., complete. Size of Tile 60x60 cm	sqm	181.99

51	Providing and laying Vitriified tiles in different sizes (thickness to be specified by manufacturer), with water absorption less than 0.08 % and conforming to I.S. 15622, of approved make, in all colours & shade, in skirting, riser of steps, over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand), including grouting the joint with white cement & matching pigments etc. complete. Size of Tile 60x60 cm	sqm	140.75
52	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS:15622(thickness to be specified by the manufacture) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge in skirting, risers of steps and dados over 12mm thick bed of cement Mortar 1:3(1 cement: 3 coarse Sand) and jointing with grey cement slurry @ 3.3 kg per sqm including pointing in white cement mixed with pigment of matching shade complete.20 to 25mm thick	sqm	31.62
53	Kota stone slab flooring over 20mm (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.	sqm	34.41
54	Providing designation 100A one brick flat soling joints filled with local sand including cost of watering, taxes, royalty all complete as per building specification and direction of E/I.	sqm	430.46
55	Making khurras 45x45 cm with average minimum thickness of 5 cm cement concrete 1:2:4(1 cement: 2 coarse sand: 4 graded stone aggregate of 20mm nominal size) over P.V.C sheet 1mx1mx400 micron, finished with 12mm cement plaster 1:3(1 cement: 3 coarse sand) and a coat of neat cement rounding the edge sand making and finishing the outlet complete.	Each	4.00
56	12mm cement plaster of mix: 1:6(1 cement: 6 coarse sand)	sqm	231.35
57	15mm cement plaster on the rough side of single or half brick wall of mix: 1:6(1 cement: 6 coarse sand)	sqm	231.35
58	20mm cement plaster of mix: 1:4(1 cement: 4 coarse sand)	sqm	302.46
59	6mm cement plaster to ceiling of mix: 1:4(1 cement: 4 coarse sand)	sqm	254.00
60	Extra for providing and mixing water proofing material in proportion recommended by the manufacturers.20mm cement plaster 1:4(1 cement: 4 sand)	sqm	302.46
61	Pointing on brick work with cement mortar 1:3(1 cement:3 coarse sand): Ruled pointing	sqm	272.55
62	Painting with silicon & acrylic emulsion based water thinnable sealer of approved brand and manufacture on wet or patchy portion of plastered surfaces :Two coats	sqm	597.80
63	Providing and applying white cement based putty of average thickness 2 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete	sqm	900.34
64	Applying one coat of cement primer of approved brand and manufacture on wall surface: Cement primer	sqm	597.50
65	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade. New work (Two or more coats applied @ 1.43 liter/10 sqm over and including base coat of water proofing cement paint applied @ 2.20 kg/10 sqm).	sqm	302.46
66	Applying priming coat: With ready mixed pink or Grey primer of approved brand and manufacture on wood work (hard and soft wood) French spirit polishing:	sqm	22.24
67	Two or more coats on works including a coat of wood filler.	sqm	141.07

68	Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc, consisting of following operations. (a) Applying and grouting a slurry coat of neat cement using 2.75 kg/sqm of cement admixed with proprietary water -proofing compound cleaning the surface before treatment, (b) Laying cement concrete using broken bricks / brick bats 25 mm to 100 mm size with 50 % of cement mortar 1:5 (1 cement: 5 coarse Sand) admixed with proprietary water proofing compound conforming to IS: 2645 over 20 mm thick layer of cement mortar of mix 1:5 (1 cement: 5 coarse Sand) admixed with proprietary water proofing compound conforming to IS 2545 to required slope and treating similarly the adjoining walls up to 300 mm height including rounding of junctions, or walls ad slabs. (c) After two days of proper curing applying a second coat of cement slurry admixed with proprietary water proofing compound conforming to IS: 2645. (d) Finishing the surface with 20 mm thick joint less cement mortar of mix 1:4 (1 cement: 4 coarse Sand) admixed with proprietary water proofing compound conforming to IS: 2645 and finally finishing the surface with trowel with neat cement slurry and making of 300 x 300 mm square. (e) The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test, All above operations to be done in order and as directed and specified by the Engineer-in-Charge. With average thickness of 120mm and minimum thickness at khurras point to be 65.	Sqm	242.14
69	Carriage of Materials with loading & unloading:-		
	Cement		41.25
	Steel	MT	23.03
	Bricks 100A(local lead 1K+7P)	% No.	65332.00
	Coarse sand 55 km(p) from Koilwar	cum	158.40
	Stone chips 185 KM(P) from Koderma	cum	184.16
	Local Sand (Lead local 1K+2P)	cum	258.81
70	Diluting and injecting chemical emulsion for Pre-Constructional/Post Constructional Anti-termite treatment and creating a continuous chemical barrier under and all around the column pits, wall trenches, basement excavation, top surface of plinth filling, junction of wall and floor along the external per polyethylene of building, expansion joints, over the top surface of consolidated earth on which apron is to be laid surrounding of pipes and conduits etc. complete as per specifications Chlorpyriphos Emulsifiable concentrate of 20% with 1% concentration.	sqm	242.92
71	Providing and fixing galvanised chicken wire mesh in 5" wide strip with average width of aperture 1.18mm and nominal dia of wire 0.556mm at junctions of RCC Column-with Brick work before plaster work.	Sqm	85.72
72	Providing & Applying Nitocote SN522 or approved equivalent Colour less silicone water repellent Protective coating on brick work, all complete as per manufacturer's instructions / recommendations.	Sqm	272.25
4a.	Cafeteria in Sandys PARK (PHE)		
	SANITARY INSTALLATION		
1	Providing and fixing white vitreous china battery based infrared sensor operated urinal of approx. size 610 x 390 x 370 mm having pre & post flushing with water (250 ml & 500 ml consumption), having water inlet from back side, including fixing to wall with suitable brackets all as per manufacturers specification and direction of Engineer-in-charge.	Each	1.00

2	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS 13983 with C.I brackets and stainless steel plug 40mm including painting of fittings and brackets, cutting and making good the walls wherever required: Kitchen sink with drain board 510x1040mm bowl depth 178mm	Each	1.00
3	Providing and fixing 600X450mm beveled edge mirror of superior glass complete with 6mm thick hard board ground fixed to wooden cleats with CP brass screws & washers complete.	Each	3.00
4	Providing and fixing PVC waste pipe for sink & wash basin including PVC waste fittings complete Semi rigid pipe 32 mm dia	Each	1.00
5	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC)pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge.		
6	Internal work - Exposed on wall		
	20 mm Nominal outer dia pipes	Meter	5.00
	25 mm Nominal outer dia pipes	Meter	25.00
	32 mm Nominal outer dia pipes	Meter	38.00
7	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC)pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Concealed work, including cutting chases and making good the		
	20 mm Nominal outer dia pipes	Meter	13.00
	25 mm Nominal outer dia pipes	Meter	7.00
8	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC)pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings This includes jointing of pipes & fittings with one step CPVC solvent cement trenching refilling & testing of joints complete as per direction of Engineer in Charge. External work 32 mm Nominal outer dia pipes	Meter	10.00
9	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC)pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings This includes jointing of pipes & fittings with one step CPVC solvent cement trenching refilling & testing of joints complete as per direction of Engineer in Charge.		
10	Providing and fixing brass stop cock of approved quality 20 mm Nominal bore	Each.	1.00
11	Providing and fixing gun metal gate valve with C.I. wheel of approved quality.		
	25 mm Nominal bore	Each.	3.00
	32 mm Nominal bore	Each.	4.00
12	Providing and fixing unplasticised PVC connection pipe with brass unions. 15 mm Nominal bore 45 cm length	Each.	3.00
13	Providing and fixing G.I. union in G.I. pipe including cutting and threading the pipe and making long screws etc.		
	20 mm dia. Nominal bore	Each.	1.00
	25 mm dia. Nominal bore	Each.	3.00
	32 mm dia. Nominal bore	Each.	4.00

14	Providing and fixing C.P. brass long nose bib cock of approved quality conforming to IS standards and weighing not less than 810 gms.15 mm Nominal bore	Each	4.00
15	Providing and fixing PTMT grating of approved quality and colour. Circular type 100mm nominal dia.	Each	2.00
16	Providing and placing on terrace polyethylene water storage tank ISI : 12701 marked with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank. (2000x1=2000)	Per litre	2000.00
17	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS: 13592 Type A including jointing with seal ring conforming to IS: 5382 leaving a 10 mm gap for thermal expansion.(i) Single socketed pipes. 110 mm diameter	Meter	20.00
18	Providing and fixing on wall face unplasticised Rigid PVC molded fittings/ accessories for unplasticised Rigid PVC rain water pipes conforming to IS: 13592 Type A including jointing with seal ring conforming to IS: 5382 leaving a 10 mm gap for thermal expansion.		
	Single push fit Coupler 110 mm	Each	5.00
	110 mm bend 87.5 0	Each	5.00
	110 mm Shoe (Plain)	Each	5.00
19	Providing and fixing unplasticised - PVC pipe clips of approved design to unplasticised - PVC rain water pipes by means of 50 x 50 x 50 mm hard wood plugs, screwed with M.S. screws of required length cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse Sand)and making good the wall etc. complete. 110 mm	Each	15.00
20	Providing and fixing to the inlet mouth of rain water pipe cast iron grating 15 cm dia polyethylene and weighing not less than 440 grams.	Each	5.00
21	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5m including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20cm in depth including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50m: All kinds of soil Pipes, cables etc. exceeding 80mm dia but not exceeding 300mm dia	Meter	53.60
22	Providing, laying and jointing glazed stoneware pipes class SP-1 'A' with stiff mixture of cement mortar in the proportion of 1:1(1 cement: 1 fine sand) including testing of joints etc. complete. 150mm dia polyethylene	Meter	3.60
23	Providing and laying cement concrete 1:5:10(1 cement: 5 coarse sand: 10 graded stone aggregate 40mm nominal size) all-round S.W pipes including bed concrete as per standard design. 150mm dia polyethylene S.W pipe	Meter	3.60
24	Providing and fixing square mouth SW gully trap grade A complete with CI grating brick masonry chamber with water tight CI cover with frame of 300X300mm size(inside) the wt. of cover to be not less than4.50kg. And frame to not less than 2.70 kg. as/standard design 180x150mmsize p type With F.P.S. bricks designation 75	Each	3.00
25	Providing and laying non -pressure NP2 class R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 including testing of joints etc. 150 mm dia R.C.C. pipe	Metr.	50.00

26	Constructing brick masonry manhole in cement mortar 1:4(1 cement: 4 coarse sand) R.C.C top slab with 1:2:4 mix (1 cement:2 coarse sand: 4 graded stone aggregate 20mm nominal size), foundation concrete 1:4:8 mix (1 cement: 4 coarse sand:8 graded stone aggregate 40mm nominal size) inside plastering 12mm thick with cement mortar 1:3(1 cement: 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement: 2 coarse sand:4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement complete as per standard design: Inside size 90x80cm and 45cm deep including C.I cover with frame (light duty) 455x610mm internal dimensions total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg) With common burnt clay F.P.S (non modular) bricks of class designation 75	Each	2.00
28	Extra for depth for manholes Size 90x80cm With F.P.S bricks class designation 75	Meter	0.40
29	Constructing brick masonry chamber for underground C.I inspection chamber and bends with 75 class designation bricks in cement mortar 1:4(1 cement: 4 coarse sand) C.I cover with frame (light duty) 455x610mm internal dimensions, total weight of cover with frame to be not less than 38 kg(weight of cover 23 kg and weight of frame 15 kg) R.C.C top slab itch 1:2:4 mix (1 cement: 2 coarse sand:4 graded stone aggregate 20mm nominal size) foundation concrete 1:5:10(1 cement: 5 fine sand:10 graded stone aggregate 40mm nominal size), inside plastering 12mm thick with cement mortar 1:3 (1 cement: 3 coarse sand) finished smooth with a floating coat of neat cement on walls and bed concrete etc. complete as per standard design:		
30	Inside dimensions 455x610mm and 45cm deep for single pipe line: With F.P.S bricks	Each	4.00
31	Extra for depth beyond 45cm of brick masonry chamber: For 455x610mm size With F.P.S bricks	Meter	0.60
32	Making soak pit 2.5 m dia polyethylene 3.0 polyethylene deep with 45x45 cm dry brick honey comb shaft with brick of class designation 75 and S.W. drain pipe 100 mm dia polyethylene, 1.8 m long complete as per standard design. With F.P.S. bricks	Each	1.00
	SEPTIC TANK (Size: 5.0 m x 1.4m x1.8m)		
33	Earth work in excavation in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m. including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil	Cum	32.88
34	Supplying and Filling in plinth with local sand and under floors including, watering, ramming consolidating and dressing complete.	Cum	1.68
35	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering-all work up to plinth level. 1:2:4 (1 Cement : 2 coarse sand: 4 graded stone aggregate 20 mm nominal size)	Cum	2.32
36	Providing designation 100 A one brick flat soling joints filled with local sand including cost of watering, taxes royalty all complete as per specification and direction of E/I.	Sqm	13.44
37	Brick work with bricks of class designation 100A in foundations and plinth in : Cement mortar 1:6 (1 cement: 6 coarse sand)	Cum	7.56
38	Half brick masonry with bricks of class designation 100A in foundations and plinth in : Cement mortar 1:4 (1 cement: 4 coarse sand)	Sqm	2.66

39	15 mm cement plaster 1:3 (1 cement: 3 coarse Sand) finished with a floating coat of neat cement on the rough side of single or half brick wall.	Sqm	44.41
40	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. up to floor five level excluding cost of centering, shuttering, finishin and reinforcement.1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20 mm nominal size)	Cum	0.23
41	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15, landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases up to floor five level excluding the cost of centering, shuttering, finishing and reinforcement with 1:2:4(1 cement:2 coarse sand:4 graded stone aggregate 20 mm nominal size).	Cum	1.82
42	Centering and shuttering including strutting, propping etc. and removal of form for.		
	Foundations, footings, bases of columns etc. for mass concrete.	Sqm	2.40
	Lintels, beams, plinth beams, girders, bressumers and cantilevers.	Sqm	2.38
	Columns, Pillars, Piers, Abutments, Posts and Struts	Sqm	1.40
	Suspended floors, roofs, landings, balconies and access platform.	Sqm	8.44
43	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete. Thermo-Mechanically Treated bars TMTC-500-8mm dia & 10mm	Kg	300.00
44	Supplying and fixing C.I. cover without frame for manholes 500 mm diapolyethylene C.I cover (medium duty) the weight of the cover to be not less than 58 kg.	Each	4.00
45	Providing M.S. foot rests including fixing in manholes with 20x20x10 cm cement concrete blocks 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) as per standard design With 20x20mm square bar	Each	10.00
	TUBEWELL		
46	Boring/drilling bore well of required dia for casing/strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/bore log, including hire & running charges of all equipment’s, tools, plants & machineries required for the job, all complete as per direction of Engineer -in-charge, up to 90 meter depth below ground level. All types of soil 300 mm dia	Mtrs.	90.00
47	Boring/drilling bore well of required dia for casing/strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/bore log, including hire & running charges of all equipment’s, tools, plants & machineries required for the job, all complete as per direction of Engineer -in-charge, beyond 90 meter & up to 150 meter depth below ground level. All types of soil 300 mm dia	Mtrs.	30.00
48	Supplying, assembling, lowering and fixing in vertical position in bore well, unplastitized PVC medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer -in-charge.		
	100 mm nominal size dia	Mtrs.	45.00
	150 mm nominal size dia	Mtrs.	30.00

49	Supplying, assembling, lowering and fixing in vertical position in bore well unplasticized PVC medium well screen (RMS) pipes with ribs, conforming to IS: 12818, including hire & labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer-in-charge.100 mm nominal size dia	Meter	30.00
50	Gravels packing in tube well construction in accordance with IS 4097 including providing gravel fine/medium/coarse, in required grading & sizes as per actual requirement, all complete as per direction of Engineer-in charge.	cum	7.08
51	Development of tube well in accordance with IS: 2800 (part I) and IS: 11189, to establish maximum rate of usable water yield without sand content (beyond permissible limit), with required capacity air compressor, running the compressor for required time till well is fully developed, measuring yield of well by V notch method or any other approved method, measuring static level & draw down etc. by step draw down method, collecting water samples & getting tested in approved laboratory, i/c disinfection of tube well, all complete, including hire & labour charges of air compressor, tools & accessories etc., all as per requirement and direction of Engineer-in-charge.	Hrs	36.00
52	Providing & fixing suitable size threaded mild steel cap or spot welded plate to the top of bore well housing/ casing pipe ,removable as per requirement, all complete for bore well of, 150 mm dia	each	1.00
53	Providing & fixing MS clamp of required dia to the top of housing/casing pipe of, removable as per tube well as per IS;2800(part-I), including necessary bolts & nuts of required size complete 150 mm dia	each	1.00
54	Providing & fixing Bail plug/ bottom plug of required dia to the bottom of pipe assembly as per IS;2800(part-I), 100mm dia	each	1.00
	Add Carriage of Materials with Loading & Unloading		
	Bricks lead of (1K+7P)	% No.	4441.00
	Stone chips (200KM P) from Koderma	cum	3.89
55	Coarse sand 50KM (1K+49P)) from Koilwar	cum	4.78
	Local sand(1K+2P)	cum	1.89
	Cement (5kmP)	Tone	2.09
	Steel (5kmP)	Tone	0.30
56	Providing & fixing wall hung w.c with UF soft close set over hinges assecerries set size 360x500x380 mm, Jaquar ,cat.no -LYS - WHT -38951. & Concealed Single piece slim concealed cistern cat.no -JCS - WHT -2400WS.with Flushing Control plate cat.no -JCP -CHR -372415.all complete. Specification and direction of Engineer-in-charge.	Each	2.00
57	Urinal partitions Jaquar cat.no- JSE-CHR-810US450X SIZE- H: 900 W: 450 Product ID - 511 6877 - 32280 746 868	Each	1.00
58	Providing & fixing under counter basin (Jaquar, FLS-WHT-5701), CP brass angular stop cock with wall flange(kubix-f) 15mm(jaguar KUP- 35053PM) CP brass Pillar cock with base flange(jaguar-KUP-35001PM) CP bottle trap,32 mm size-300X190 long wall connection pipe(jaguar-ald-769)etc. all complete.	Each	3.00
	Providing and fixing PVC Soil ,Waste & vent pipes all complete		
59	110 mm dia	meter	28.00
	40 mm dia	meter	8.00
	Providing and fixing fittings all complete as/specification & direction of E/I		
60	110 mm vent cowel	Each	1.00
	110 mm plain bend	Each	7.00

	110 mm door bend	Each	6.00
	110 X 110 mm dia plain tee	Each	2.00
	110 mm pipe clip	Each	3.00
	110 X110 mm dia p-trap	Each	6.00
	40 mm elbow	Each	10.00
	40 mm plain tee	Each	8.00
	Providing Paper holder	Each	2.00
	Providing Towel Ring	Each	2.00
	Soap dispenser	Each	3.00
	CP brass 2-way bib cock with wall flange(Kubix-F) 15mm	Each	2.00
	110 mm dia cp jali	Each	4.00
	Establishment of -2HP of submersible pump set of approved brand and make, all complete as per specification and satisfactory of e/I	each	1.00
	TOTAL		
4.b	Cafeteria in Sandys PARK (ELE)		
1	Wiring for Light plug and circuit with 2x2.5 sq.mm FR PVC insulated copper conductor single core cable in surface/ recessed PVC conduit/casing capping along with 1 No.2.5 sq mm FR PVC insulated copper conductor single core cable for loop earthing as required	Polyethylene	410.00
2	Wiring for power plug with 4x4 sq.mm FR PVC insulated copper conductor single core cable in surface/ recessed PVC conduit along with 2 No.4 sq. mm FR PVC insulated copper conductor single core cable for loop earthing as required	Polyethylene	40.00
3	Wiring for power plug with 2x4 sq.mm FR PVC insulated copper conductor single core cable in surface/ recessed PVC conduit along with 1 No.4 sq. mm FR PVC insulated copper conductor single core cable for loop earthing as required	Polyethylene	280.00
4	Wiring for sub main with 4x6 sq.mm +1X6 sq. mm earth wire FR PVC insulated copper conductor single core cable in recessed PVC conduit as required.	Polyethylene	80.00
5	Wiring for sub main with 4x10 sq.mm +1X10 sq. mm earth wire FR PVC insulated copper conductor single core cable in recessed PVC conduit as required.	Polyethylene	120.00
6	Supplying & fixing following size ISI marked PVC conduit with accessories in recess including cutting of wall and making good the same as required.		
	(a) 20 mm dia	Polyethylene	20.00
	(b) 25 mm dia	Polyethylene	40.00
7	Supplying and fixing metal box of following size in recess with suitable size of phenolic laminated sheet cover in the front including painting etc. as required.		
	(a)75mmX75mmX50mm	Each	2.00
	(b)200mmX150mmX60mm	Each	2.00
8	Supplying and fixing following size/modules, GI box along with modular base & cover plate for modular fitting in recess etc. as required.(a)75mmX75mm	Each	31.00
9	Wiring for light point/ fan point/ exhaust fan point / call bell point with 1.5 Sq.mm FR PVC insulated copper conductor cable in recessed PVC conduit with modular switch modular plate suitable GI box earthing the point with 1.5 sq. mm FR PVC insulated copper conductor single core cable etc as required.	Point	137.00

10	Supplying and fixing suitable size GI box with modular plate and cover in recess including providing and fixing modular type 3 pin 5/6 amps socket outlet & 6A switch connection etc. as required.	Point	20.00
11	Supplying and fixing of suitable size GI box with modular plate and cover in recess including providing and fixing modular 6 pin 15/16 amp socket outlet & 15/16 amp modular switch including connection, painting etc as required	Set	9.00
12	Supplying and fixing modular type 5/6 amp, 5 pin socket outlet on the existing modular plate & box including making connection but excluding modular plate etc. as required. (For Bracket fan only)	Each	28.00
13	Supplying and fixing TPN sheet steel enclosure on surface or in recess along ,with 63 amp 415 volts 'C' series, TPN, MCB , complete with connections testing and commissioning etc. as required.(For ODU)	Each	3.00
14	Supplying and fixing TPN sheet steel enclosure on surface or in recess along ,with 32 amp 415 volts 'C' series, TPN, MCB , complete with connections testing and commissioning etc. as required.(For ODU)	Each	1.00
15	Supplying and fixing modular type telephone socket outlet on the existing modular plate & box including connections, excluding modular plate etc. as required.	Each	1.00
16	Supplying and drawing 2 pair 0.5 sq mm. FR PVC insulated annealed copper conductor unarmoured telephone cable in the existing surface / recess PVC conduit etc. as required.	Polyethylene	25.00
17	Supplying and drawing co-axial T.V cable RJ-6 grade copper conductor PE insulated with PVC sheath in the existing PVC conduit etc. as required.	Polyethylene	40.00
18	Supplying and fixing modular T.V socket on the existing modular plate and metal box including making connection, etc. as required.	Each	2.00
19	Supplying and fixing modular blanking plate on the existing modular plate & box excluding modular plate etc. as required.	Each	10.00
	MAIN PANEL & D.B.s		
20	Supplying and fixing 6 way(4+2) double door horizontal type Three pole and Neutral sheet steel M.C.B. D.B, 415 Volts in surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar , detachable gland plate, interconnection phosphatised and powder painted including , earthing etc. as required(But without MCB/RCCB/ Isolator)	Each	2.00
21	Supplying and fixing following ways TPN vertical Load line distribution board suitable for up to 160 Amp four pole MCCB as incomer and MCBs as outgoing in surface/ recess, ,inclusive of tinned copper busbar, common neutral link , earth bar, din bar , for mounting MCB's etc. as required, (but without MCCB & MCB's)6 way Double door	Each	1.00
22	Supplying and fixing cable end box (Loose wire box , IP 43) suitable for TPN sheet steel vertical M.C.B. Distribution board, on surface/ recess, complete with testing commissioning etc. as required	Each	1.00
23	Supplying and fixing of following rating electrical items in the existing Vertical DB as incomer including drilling holes in cubicle panel making connections etc. as required. (i) 125 Amp 16 KA FP 415 volt MCCB.	Each	1.00
24	Supplying and fixing of following rating C series MCB suitable for inductive and other loads of following poles in the existing Vertical/ MCB DB complete with connections ,testing and commissioning etc. as required .		
	6 Amp. To 32 Amp. SP MCB 240 Volt	Each	36.00
	32 Amp TPN MCB 415 Volt	Each	4.00
	63 Amp TPN MCB 415 Volt	Each	4.00

25	Supplying and fixing cable end box (Loose wire box , IP 43) suitable for following three pole and Neutral sheet steel M.C.B. Distribution board, on surface/ recess, complete with testing commissioning etc. as required (i) For 6 way Double door TPN MCB DB	Each	2.00
26	Supplying and fixing of wall/floor mounted cubicle panel board fabricated with 16 guage iron sheet suitable for panel mounted switch disconnecter, including busbar chamber, insulator, nut-bolt painting etc as required. (But without busbar copper strip)	Sft	20.00
27	Supplying and fixing of following rating electrical items in the existing cubical panel board including drilling holes in cubicle panel making connections etc. as required.		
	(i) 160 Amp 35 KA FP 415 volt MCCB.	Each	1.00
	(ii) 160 Amp, 4 pole changeover switch.	Each	1.00
	(iii) 125 Amp 16 KA FP 415 volt MCCB.	Each	1.00
	(iv) 32 Amp TPN MCB 415 Volt	Each	5.00
	(v) 32 Amp SPN MCB 240 Volt	Each	4.00
	(vii) Digital ampolyethylene three phase	Each	1.00
	(viii) Digital Voltpolyethylene three phase	Each	1.00
28	Providing and fixing MV danger notice plate of 200mmX150mm made of mild steel at least 2mm thick, and vitreous enamelled white on both sides, and with inscription in single red colour on front side etc as required.	Each	1.00
SUPPLY & INSTALLATION OF FIXTURES			
29	Supply and Installation of regular / standard model A.C. ceiling fan of 1200 mm sweep including wiring the down rod of standard length (up to 30cm) with 1.5 sq.mm FR PVC insulated copper conductor, single core cable etc. as required.	Each	1.00
30	Supplying and fixing stepped type electronic fan regulator on the existing switch box including connections excluding modular plate etc. as required.	Each	1.00
31	Supply and Installation of 300mm sweep 230 A.C. exhaust fan in the existing opening including making good the damage connection testing commissioning etc. as required.	Each	2.00
32	Supply and installation of 400 mm, 230 V AC wall / cabin fan including fixing the bracket, making connection, testing, commissioning etc as required.	Each	26.00
33	Supplying and fixing 40 watt LED surface mounting luminaire provides soft light and glare free symmetrical illumination fitting and all accessories including ball and socket arrangement , 2 no down rods of 20 mm dia x1.6 mm thick G.I. pipe up to 30 cm length painting and wiring the down rods and connections with 1.5 sq.mm FR PVC insulated, copper conductor single core cable and earthing etc. as required.	Each	4.00
34	Supplying and fixing single wall mounted 20/22watt LED type batten fitting complete with electronic driver and LED tube etc. directly on ceiling / wall including connections with 1.5 sq.mm FR PVC insulated, copper conductor single core cable and earthing the body etc. as required.	Each	3.00
35	Supplying and fixing 2 pin 5 Amp ceiling rose on the existing junction box/ PVC box including connection etc as required.	Each	3.00
36	Supplying and fixing batten / angle holder including connections with 1.5 sq.mm FR PVC insulated, copper conductor single core cable etc. as required.	Each	5.00
37	Supplying and fixing following types lamp in existing electrical fitting/ fixture etc as required.(i) 12 watt LED lamp	Each	5.00

38	Supplying and fixing surface mounted 10/12 watt LED type bulkhead fitting comprising of pressure die cast housing with acrylic diffuser(IP 65)and complete with integrated electronic driver etc directly on wall/ ceiling including connections with 1.5 sq.mm FR PVC insulated, copper conductor single core cable and earthing the body etc. as required.	Each	7.00
39	Supplying and fixing decorative wall bracket fixture in chrome finish with glass diffuser suitable for 2x15 watt CFL/ LED lamp directly on wall including connections with 1.5 sq.mm FR PVC insulated, copper conductor single core cable and earthing the body etc. as required.	Each	18.00
SUPPLY & LAYING OF UNDER GROUND CABLE			
40	Laying of one number PVC insulated and PVC sheathed/ XLE power cable of 1.1 KV grade of following size direct in ground including excavation, sand cushionig, protective covering and refilling the trench etc. as required. (a) Above 35 sq. mm. and up to 95 sq.mm	Polyethy lene	95.00
41	Laying and fixing of one number PVC insulated and PVC sheathed aluminum conductor cable of 1.1 KV grade of following size on surface etc. as required. (a) Above 35 sq. mm. and up to 95 sq.mm (Clamped with 25/3 mm MS flat clamp)	Polyethy lene	15.00
42	Excavating for cable trenches of depth up to 1.2M in soft soil including getting out the excavated soil and disposal of surplus excavated soil directed within lead of 50 meters.	Cum	12.00
43	Filling available excavated earth (excluding rock) in trenches, sides of foundations etc. in layers not exceeding 20 cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 meters.	Cum	6.00
44	Providing and laying following size NP2 (Non pressure) RCC pipe complete with RCC collar etc. as required. (a)150 mm dia	Polyethy lene	10.00
45	Laying of one number PVC insulated and PVC sheathed aluminum conductor cable of 1.1 KV grade of following size in the existing RCC/ HUME/METAL pipe etc. as required. (a) Above 35 sq. mm. and up to 95 sq.mm	M	10.00
46	Supplying and making end termination with brass compression gland and aluminum lugs for following size of PVC insulated and PVC sheathed/XLPE aluminum conductor cable of 1.1 KV grade as required.		
	(a) 3.5 Core 50 sq mm	Set	2.00
	(b) 3.5 Core 95 sq mm	Set	2.00
EARTHING			
47	Earthing with G.I earth pipe 4.5 mt. long 40mm dia including accessories and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with Charcoal/coke and salt as required.	Set	2.00
48	Providing and laying earth connections from earth electrode with 6 SWG dia G.I. wire in 15 mm. Dia G.I.pipe from earth electrode including connection with G.I. thimble excavation and refilling etc. As required.	Polyethy lene	40.00
49	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing etc as required.	Polyethy lene	30.00
50	Supplying and fixing of following rating electrical items in the existing cubical panel board including drilling holes in cubicle panel making connections etc. as required.		
	vi) Copper strip of all sizes.	Kg	10.00
	(ix)Pilot lamp for indicator	Each	3.00

51	Supplying and fixing of Model JNL-CHR-SL800WPAGE 27 glass & wood pendant with alabaster finish E-27 9W x 1 LED light of Jaquar Make including all accessories and connection with 1.5 sq mm FR PVC insulated copper conductor single core cable and earthing the body etc as required.	Each	70.00
52	Supply of PVC insulated PVC sheathed aluminum conductor armoured underground cable of graded 1.1 KV for working voltage up to 1100 volts conforming to ISI 1554 (Part-I) of 1964 with up to date amendment as detailed below.		
	(a) 3.5 Core 95 sq mm	Polyethylene	100.00
	(b) 3.5 Core 50 sq mm	Polyethylene	20.00
4.c	Cafeteria in Sandys PARK (AC)		
	SUPPLY PART (HIGH SIDE WORK)		
	Air-conditioning System		
1	Supply of Ductable air conditioners with Single Indoor & Single/Twin Outdoor Unit of minimum 12000 BTU/Hr. cooling capacity per Tr. fitted with 3 Ph. scroll compressor, Hi & LO Pressure switch, Microprocessor control with Hi & LO voltage cutout, single phase protection and programmable handset & with factory charged R-22 Refrigerant.AC should be fitted with Microprocessors based control includes features of Hi/Lo voltage protection, single phase protection, Phase reversal protection, Compressor On/Off delay for compressor protection, Auto restart function, Fault detection LP/HP/Sensor fail. LED handset, Filter clean time sitting, Fault logger to view 100 fault, Total run time viewing, password protected menu and Para polyethylene setting, 6 prog timer with 24 Hrs. time mode for different event setting in a day, weekly off. (2 days), etc. Make: Carrier, Mitshubishi Heavy, Midea		
	4.0 Tr. (1:1) Ductable air conditioners.	Nos.	1.00
	11 Tr. (1:2) Ductable air conditioners.	Nos.	3.00
B	INSTALLATION PART:		
2	Installation, Testing and commissioning of ductable/cassette air conditioners. The rates shall be inclusive of the following:		
	a) Indoor unit mounting with all items.		
	b) Minor Civil work like opening in the walls for piping & cables & finishing the same. Pipes & cables between through wall shall be taken through sleeves & plugged to avoid leakages.		
	c) Outdoor unit mounting with all accessories vibration mounting pads etc.		
	d) Pressure Testing & Commissioning.		
	4.0 Tr. Carrier Make Ductable air conditioners.	Nos.	1.00
	11 Tr. Carrier Make Ductable air conditioners.	Nos.	3.00
3	Supply & fixing of Copper cable laying in 2.0 MM thick PVC conduit suitable for:		
	4.0 Tr. Ductable air conditioners	Rmt.	18.00
	11.0 Tr. Ductable air conditioners	Rmt.	55.00
4	Supply, fabrication and fixing of painted MS platform with all Required materials & Labour to be fixing of outdoors units.	kg	200.00
5	Supply, installation & testing of Factory fabricated Round/Oval GSS ducts with flanges, joints etc. in accordance with the approved drawings and as per specifications.		

	24 gauge galvanized sheet steel (0.63mm)	Sqmt.	175.00
	22 gauge galvanized sheet steel (0.80mm)	Sqmt.	75.00
6	Supply, installation, testing & balancing of fixed bar extruded aluminum powder coated round supply air Diffusers with all sides flange.	Nos.	32.00
7	Supply, installation, testing & balancing of fixed bar extruded aluminum powder coated Louvered return air Grills with all sides flange.	Sqmt.	8.00
8	Supply & installation of thermal insulation with 9 mm thick closed cell elastomeric nitrile rubber insulation pasted from inside of the duct with self-adhesives.	Sqmt.	150.00
9	Supplying & fixing of 12 mm acoustic lining of duct with open cell Nitrile Rubber density 140-180 Kg/Cumec. Applied by adhesive conforming to standard specification.	Sqmt.	100.00
10	Supply & fixing of fire volume control damper for IDU supply air outlet.	Nos.	4.00
11	Supply & fixing of double flexible canvass Connections for each units	Nos.	7.00
12	Pressure flushing of all refrigerant piping System with Dry nitrogen & leak testing.	Nos.	7.00
13	Supply, Installation, testing & commissioning of 32 mm/25 mm PVC medium class pipes for the water drainage from IDU duly insulated with 6 mm thick close cell elastomeric nitrile rubber.	Rmt.	50.00
14	Supplying & Installation of interconnecting of Refrigerant Copper Piping work of required outer dia Polyethylene, insulated with 19/13 mm thick closed cell electrometric nitrile rubber tubular insulation (or as per manufacturer's standard) between Each set of indoor & outdoor units shall be properly fixed/supported with suitable size of clamp/ M.S. hanger.Refrigerant Copper Pipe Makes: Rajco/Mandev Tubes/Mehta Tubes/Totaline/Camipro etc. Protective coating over insulation Make:Paramount Polytrear/K-Flex/A-Flex/Armacell etc. suitable for:		
	4.0 Tr. Ductable air conditioners	Rmt.	15.00
	11.0 Tr. Ductable air conditioners	Rmt.	45.00
15	Vaccumisation of the system and charging of Refrigerant in the system as required.	Kgs.	14.00
16	Supply, Installation & commissioning of 200 mm x 75 mm x 1.6 MM thick GI Cable tray with Cover for the laying of Copper pipes outside of the building.	Rmt.	40.00
5	Landscaping		
	SOIL AND SITE PREPARATION		
1	Making up the trenched area up to proper levels by filling with earth or earth mixed with manure before and after flooding trench with water (including cost of imported earth, sludge or manure.	cum	3600.00
2	Supplying and stacking of good earth at site including royalty but excluding carriage (earth measured in stacks will be reduced by 20 % for payment)	cum	3600.00
3	Supplying and stacking at site dump manure from approved source, excluding carriage (manure measured in stacks will be reduced by 8% for payment)Screened through sieve of I.S. designation 4.75 mm	cum	900.00
4	Mixing earth and sludge or manure in proportion specified or directed. Spreading of sludge, dump manure or/and good earth in required thickness (Cost of sludge, dump manure or/and good earth to be paid separately)	cum	4500.00

5	Uprooting rank vegetation and weeds by digging the area to a depth of 60 cm removing all weeds and other growth with roots by forking repeatedly, breaking clods, rough dressing, flooding with water, uprooting fresh growths after 10 to 15 days and then fine dressing for planting new grass, including disposal of all rubbish with all leads and lifts.	100 sqm	40.00
6	Uprooting rank vegetation and weeds by digging the area to a depth of 60 cm removing all weeds and other growth with roots by forking repeatedly, breaking clods, rough dressing, flooding with water, uprooting fresh growths after 10 to 15 days and then fine dressing for planting new grass, including disposal of all rubbish with all leads and lifts. Fine dressing the ground	100 sqm	40.00
7	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 moving including supplying good earth if needed. In rows 5 cm apart in either direction.	100 sqm	34.21
	TREE, SHRUB, CREEPER PLANTATION		
8	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 20 % 1 part of stacked volume of manure 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) Holes 60 cm dia. and 60 cm deep.	each	1000.00
9	Preparation of beds for hedging and shrubbery by excavating 60 cm deep and trenching the excavated base to a further depth of 30 cm refilling the excavated earth after breaking clods and mixing with sludge or manure in the ratio of 8:1 (8 parts of stacked volume of earth after reduction by 8%) flooding with water, filling with earth if necessary, watering and finally fine dressing, leveling etc. including stacking and disposal of materials declared unserviceable and surplus earth by spreading and levelling as directed, within a lead of 50 m lift up to 1.5 m complete (cost of sludge, manure or extra earth to be paid for separately) Supplying and Plantation as per the direction of engineer in charge Inc. carriage cost of	cum	1944.00
10	EVERGEN TREES for Boundary wall (Ht- 3000mm)		
	Ailanthus Excelsa / Maharukh	Nos.	190.00
	Azadirachata indica	Nos.	110.00
	Azadirachta indica	Nos.	500.00
	Dalbergia sissoo	Nos.	200.00
	Peltophorum pterocarpum	Nos.	300.00
	Tamarindus indica	Nos.	300.00
	Lagerstroemia speciosa	Nos.	150.00
	Cassia fistula	Nos.	150.00
	Jacaranda mimosifolia	Nos.	150.00
	Bauhinia variegata	Nos.	150.00
11	Tree for Internal Pathway		
	Plumeria alba	Nos.	500.00
	Ficus elastica	Nos.	100.00
	Ficus rumphii 'variegata'	Nos.	50.00
	Pseudobombax ellipticum (Bombax ellipticum)	Nos.	50.00
12	Palm		

	Wodeytia bifurcate	Nos.	75.00
	Caryota urens	Nos.	75.00
	Washingtonia filifera	Nos.	50.00
	Bismarckia nobilis	Nos.	50.00
13	SHRUBS (Ht- 300 to 1000 mm)		
	Calliandra haematocephala	Nos.	200.00
	Agave variety (tequilana, Americana)	Nos.	5000.00
	Cactus Variety	Nos.	100.00
	Sansevieria (different varieties)	Nos.	400.00
	Adenium varieties	Nos.	500.00
	Euphorbia milii	Nos.	500.00
	Cycus variety	Nos.	100.00
	Clerodendrum inerme	Nos.	100.00
	Ficus panda	Nos.	100.00
14	GROUND COVERS (Ht-200mm)		
	<i>Iresene herbstii</i>	sqm	25.00
	<i>Alternanthera red</i>	sqm	50.00
	Dianella tasmanica	sqm	75.00
15	Carriage of Materials		
	Earth (1 km kutcha + 2 km pucca)	cum	3600.00
	Manure (1km kutcha + 5 km pucca)	cum	900.00
16	Supplying and installation of precast cc dustbins as per approval of PSCL.	no.	65.00
17	Supplying and installation of precast cc bollards -provision of bollards at minor junctions, plot entry points and pedestrian crossing with a minimum spacing of 1.2m c/c or as directed by engineer in charge, pv and fixing of concrete bollards of m30 grade and size 1000 mm (ht-1000m dia 150mm complete inclusive of all consumables, t&p and labours as/ requirement	no.	200.00
18	Supplying and installation of FRP seating benches of 3 person capacity with cast iron side support as per approval of PSCL.	no.	110.00
19	Fencing with welded steel wire Fabric 75 mm x 50 mm (Suggestive) (Providing 1.20 meter high fencing with angle iron posts 50 mm x 50 mm x 6 mm at 3 meter center to center with 0.40 meter embedded in M15 grade cement concrete, corner, end and every 10th post to be strutted, provided with welded steel wire fabric of 75 mm x 50 mm mesh or 75 mm x 25 mm mesh and fixed to iron posts by flat iron 50 x 5 mm and bolts etc. complete in all respects.)	m	1800.00
20	Cost for construction of 150mm x 100mm x 120 m deep high yield tube well. All complete as per specification, site condition and as per direction of e/I UD & HD Approved Estimate	Set	1.00
21	5 HP Pump motor with Starter panel, all complete as per specification and direction of E/I UD & HD Approved Estimate	Set	1.00
22	110 mm to 63 mm HDPE Pipe distribution of 2020 Meter for Horticulture and Irrigation purpose all complete. UD & HD Approved Estimate	Set	1.00
23	Stone sculptures	Nos.	9.00
6	Appendix 13 : Kids Play Area		

1	Cutting of Trees, including Cutting of Trunks, Branches and Removal (Cutting of trees, including cutting of trunks, branches and removal of stumps, roots, stacking of serviceable material with all lifts and up to a lead of 1000 mtrs and earth filling in the depression/pit.) Girth from 300 mm to 600 mm	Nos.	12.00
2	Earth work in excavation over areas (exceeding 30 cm in depth. 1.5 m in width as well es 10 sqm on plan) including disposal of excavated earth , lead up to 50 m and lift up to 1.5 m; disposed earth to be levelled and neatly dressed	Cum	1260.00
3	Supplying and Filling in plinth with local sand and under floors including, watering, ramming consolidating and dressing complete.	Cum	630.00
4	Providing designation 100 A one brick flat soling joints filled with local sand including cost of watering, taxes, royalty all complete as per building specification and direction of E/I.	Sqm	420.00
5	Granular Material or hard murrum for GSB works at Quarry	Cum	60.90
6	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering-all work up to plinth level. 1:2:4 (1 Cement: 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	Cum	17.50
7	Sitting Arrangements	Nos.	11.00
8	Wide Slide :	Nos.	4.00
9	Wave Slide ,	Nos.	3.00
10	Spiral Slide, Product id: 5116877-42863169742	Nos.	3.00
11	Double see saw, Product id: 5116877-14551277238	Nos.	4.00
12	Merry go Round: Product id: 5116877-30759744505	Nos.	2.00
13	Swing for Children Gem Portal Product id: 5116877-14066115194	Nos.	4.00
14	Children Round Swing Gem Product id: 5116877-8698111099	Nos.	4.00
15	Artificial Grass (Artificial Grass) Gem Product id: 5116877-36166393221	Sqm	225.00
16	TRAMPOLINE FOR PARK Product id: 5116877-44763654489	Nos.	4.00
17	Advance Multi Play Station (SHUBHAM) (MULTI COMBO MODULED)	Nos.	2.00
7	Item of Nehru Memorial Renovation		
1	Cutting of Trees, including Cutting of Trunks, Branches and Removal (Cutting of trees, including cutting of trunks, branches and removal of stumps, roots, stacking of serviceable material with all lifts and up to a lead of 1000 mtrs and earth filling in the depression/pit.) Girth from 300 mm to 600 mm	Nos.	10.00
2	Clearing grass and removal of the rubbish up to a distance of 50 m outside the periphery of the area cleared.	Sqm	1390.00
3	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level.1:3: 6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size)	cum	4.17
4	40 mm thick rough chisel dressed stone flooring over 20 mm (average) thick base including pointing with C.M 1:2 (1 cement :2 stone dust) with an admixture of pigment to match the shade of the stone with base 1:1:1 (1 lime : 1surkhi : coarse sand or 1:5 (1 cement : 5 coarse sand)Red sand stone	Sqm	110.00

5	Steel work welded in built up sections/framed work including cutting hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel, etc. as required. In gratings, frames, guard bar, ladders, railings, brackets. Gates & similar works.	Kg	100.00
6	Painting Steel work with Deluxe Multi Surface Paint to give an even shade. Two or more coat applied @ 0.90 liter/ 10 sqm over an under coat of primer applied @ 0.80 liter/ 10 sqm of approved brand and manufacture. Steel Structure	Sqm	10.00
7	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.).	Kg	1093.20
8	Finishing Wall with water proofing cement paint of approved brand and manufacture and of required shade to give an even shade New work (three or more coats)	Sqm	300.00
9	Removing dry or oil bound distemper by scrapping, sand paper and preparing the surface smooth including necessary repair scratches tec. complete	Sqm	300.00
10	Carriage		
	Coarse Sand	cum	1.98
	Stone Chips	cum	3.92
	Cement	MT	0.95
	Steel	MT	1.19
8	STATION CLUB	-	-
1	Demolishing brick work including stacking of serviceable material and disposal of unserviceable material within 50 polyethylene’s lead: In lime mortar with old mugnal bricks	Cum	888.60
2	Demolishing brick work including stacking of serviceable material and disposal of unserviceable material within 50 polyethylene’s lead: In lime mortar with old mugnal bricks In cement mortar	Cum	323.04
3	Dismantling doors windows and clerestory windows (steel or wood) shutters including chowkhats, architrage, holdfasts etc. complete and stacking within 50 meters lead:	Each	54.00
4	Dismantling wood work in frames, trusses, purlins and rafters up to 10 meters span and 5 meters height including stacking the material within 50 meters lead: Of sectional area 40 cm* and above	Cum	5.60
5	Brick work with bricks of class designation 100A in foundation and plinth in : Cement mortar 1:4 (1 cement : 4 coarse sand)	Cum	30.25
6	Providing and laying in position machine batched, machine mixed and machine vibrated design mix cement concrete of specified grade for reinforced cement concrete structural elements, excluding the cost of centering, shuttering, finishing and reinforcement, M-20 grade reinforced cement concrete Beams, plinth beams, girders, bressumers, cantilevers, Suspended floors lintels roofs and staircases including spiral staircases, shelves etc.	Cum	244.59

7	Reinforcement for RCC work including straightening. Cutting, bending, placing in position and binding all complete. Thermo-Mechanically Treated bars-TMTC-500-10 mm dia.	kg	43201.00
8	Centering and shuttering including strutting, propping etc. and removal of form for: Suspended floors, roots, landings, balconies and access platform.	sqm	985.20
9	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all Fixed to openings/ wooden frames with rawl plugs	kg	1680.00
10	Flooring :- Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622 (Thickness to be specified by the manufacture) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer -in-Charge in skirting, risers of steps and dados over 12 mm thick bed of cement Mortar 1:3 (1cement : 3 coarse Sand) and jointing with grey cement slurry @ 3.3 kg per sqm including pointing in white cement mixed with pigment of matching shade complete.	Sqm	26.25
11	Providing and laying Vitrified tiles in different sizes (thickness to be specified by the manufacturer), with water absorption less than 0.08% and conforming to IS: 15622, of approved brand & manufacturer, in all colours and shade, in skirting, riser of steps, laid with cement based high polymer modified quick set tile adhesive (water based) conforming to IS: 15477, in average 6 mm thickness, including grouting of joints (Payment for grouting of joints to be made separately).Size of Tile 800 x 800 mm.	sqm	839.65
12	40 mm thick rough chisel dressed stone flooring over 20 mm (average) thick base including pointing with C.M 1:2 (1 cement :2 stone dust) with an admixture of pigment to match the shade of the stone with base 1:1:1 (1 lime : 1surkhi : coarse sand or 1:5 (1 cement : 5 coarse sand)Red sand stone	sqm	51.00
13	Plaster & Finishing Works 12 mm cement plaster of mix 1:4 (1 cement : 4 coarse sand)	sqm	1950.00
14	15 mm cement plaster on rough side of single or half brick wall of mix. 1:4(1 cement: 4 coarse Sand)	sqm	742.00
15	6 mm cement plaster to ceiling of mix. 1:3(1 cement: 3 coarse sand)	sqm	663.65
16	Finishing Wall with water proofing cement paint of approved brand and manufacture and of required shade to give an even shade New work (three or more coats)	sqm	742.00
17	Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc, consisting of following operations. Applying and grouting a slurry coat of neat cement using 2.75 kg/sqm of cement admixed with proprietary water - proofing compound cleaning the surface before treatment, (b) Laying cement concrete using broken bricks / brick bats 25 mm to 100 mm size with 50 % of cement mortar 1:5 (1 cement: 5 coarse Sand) admixed with proprietary water proofing compound conforming to IS: 2645 over 20 mm thick layer of cement mortar of mix 1:5 (1 cement: 5 coarse Sand) admixed with proprietary water proofing compound conforming to IS 2545 to required slope and treating similarly the adjoining walls up to 300 mm height including rounding of junctions, or walls ad slabs. After two days of proper curing applying a second coat of cement slurry admixed with proprietary water proofing compound conforming to IS: 2645. Finishing the surface with 20 mm thick joint less cement mortar of mix 1:4 (1 cement: 4 coarse Sand) admixed with proprietary water proofing compound conforming to IS: 2645 and finally finishing the	sqm	985.20

	surface with trowel with neat cement slurry and making of 300 x 300 mm square. The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test, All above operations to be done in order and as directed and specified by the Engineer-in-Charge. With average thickness of 120mm and minimum thickness at Khurra as 65 mm.		
18	Providing wood work in frames of doors, windows, clearstory windows and other frames, wrought framed and fixed in position Second Class teak wood	Cum	8.36
19	Providing 40 x 5 mm flat iron hold fast 40 cm long including fixing to frame with 10 mm diapolyethylene bots, nuts and wooden plugs and embedding in cement concrete block 30x10x15 cm 1:3:6 mix (1 cement: 3 coarse sand: 6 graded stone aggregate 20 mm nominal size)	Each	164.00
20	Providing and fixing aluminum handles anodised (anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour and shade with necessary screws etc. complete :125mm	Each	174.00
21	Providing and fixing aluminum hanging floor door stopper anodized (anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour and shade with necessary screws etc. complete. Twin rubber stopper	Each	66.00
22	Providing and fixing circular cast iron box for ceiling fan clamp 140 mm internal dia, 73 mm height, 5 mm thick rim bottom and top lids, 1.5 mm thick M.S sheet with its top surface hacked for proper bonding top lid shall be screwed into the cast iron box by means of 3.3 mm dia round headed screws, one ;pcf at the corners. Clamps shall be made of 12mm dia M.S. bar bent to shape as per standard drawing.	Each	40.00
23	With ready mixed pink or grey primer of approved brand and manufacture on woodwork (hard and soft wood)	Sqm	196.00
24	Painting with ready mixed paint of approved brand and manufacture in all shades to give an even shade: New steel work (two or more coats) & New wood work (two or more coats)	sqm	(20.79 & 196)
25	Painting with synthetic enamel paint of approved brand and manufacture to give an even shed. Two or more coats on new work	sqm	1950.00
26	Providing and fixing water closet squatting pan (Indian Type WC pan) with 100mm sand cast iron P or S trap, 10 liter low fixture complete, including cutting and making good the wall and level white PVC flushing cistern, including flush pipe, manually control device(handle lever) conforming to IS:7231, with all fittings and floors where ever required. White Vitreous china, Orissa, Pattern WC pan of size 580x440 mm with integral type footrest.	Nos.	1.00
27	Providing and fixing white vitreous china pedestal type water closet.(European type) with seat and lid, 10 liter flow level white vitreous china flushing cistern and C P flush bend with fitting and CI brackets, 40mm flush bend, over flow arrangement with special of standards make and mosquitoes proof coupling of approved municipal complete design complete, including painting of fittings and brackets, cutting and making good the walls. W.C. Pan with ISI marked white solid plastic seat.	Nos.	1.00
28	Providing and fixing white vitreous china flat back or wall corner type leaped urinal basin of 430x260x350 mm and 340x410x265 mm size respectively with automatic flushing cistern with standard flush pipe and CPP brass spreaders with brass union and GI claim complete, including painting of fittings and brackets , cutting and making good the wall and floor whenever required. Range of Two Urinal Basin with 5 liter white PVC automatic flushing cistern.	Nos.	2.00

29	Providing and fixing wash basin with CI Brackets, 15mm CP brass pillar taps, 32mm CP brass waste of stand red pattern including painting of fittings and brackets, cutting and making good the wall wherever required. White vitreous China wash basin size 630x450mm with a pair of 15mm CP brass pillar taps.	Nos.	4.00
30	Providing and fixing wash basin with CI Bracket, 15mm CP brass pillar taps, 32mm CP brass waste of standard pattern including painting of fittings and brackets, cutting and making good the wall wherever required. White vitreous Chaina flat back wash basin size 450x300mm with single 15mm CP brass pillar taps.	Nos.	4.00
31	Providing and fixing Cp brass angle valve for basin mixer and geyser points of approved quality confirming to IS: 8931. A 15mm nominal bore.	Nos.	9.00
32	Providing and fixing CP Brass long body bib cock of approved quality confirming to IS: standards and weighing not less than 690 grams :-15 mm Nominal Bore	Nos.	3.00
33	providing and placing on terrace (at all floor levels) polyethylene water storages tank, ISI :12701 marked, with cover and suitable looking arrangement and making necessary holes for inlet , Outlet and over flow pipes but without fittings and the base support for tank.	Litre	1000.00
34	Providing and fixing mirror of superior glass (of approved quality) and of required shapes and size with plastic moulded frame of approved make and said with 6mm thick hard.- Oval shape 450 x 350 mm Mirror	Nos.	4.00
35	Septic tank as per Specification and direction of E/I. all complete as per the Specification, Note: 1) Effluent from septic tank to be taken to nearby manhole/ sump/ STP through shallow sewers. If this option is not available then it is to be disposed of in soakage pits. 2) Septage from septic tank is to be pumped out once in a year and disposed of safely in nearby STP/ Oxidation pond/ Sludge drying beds.	Nos.	1.00
36	Internal plumbing and electrification	%	7.00
37	Carriage		
	Brick	Per Thousand	13849.01
	Coarse Sand	Cum	193.68
	Stone Chips	Cum	248.49
	Cement	MT	110.45
	Steel	MT	44.88
9	Item OF SECONDARY/EMERGENGY ENTRANCE GATE		
1	Making 25cm (10”) dia bore up to 5 M depth below ground with hand auger of approved quality in ordinary soil (vide classification of sol item-A) true to plumb and without eccentricity in any stage of operation and disposal of the excavated earth up to 50 M lead including all lifts, all complete as per approved design and direction of E/I./	Rmt	30.00
2	Making 63 cm (25”) dia under-ream at required depth with hand auger of approved quality in ordinary soil (vide classification of soil item-A) true to plumb and without eccentricity in any stage of operation and disposal of the excavated earth up to 50M lead including all lifts, all complete as per approved design and direction of E/I.	Each	12.00

3	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 M in width 10 sqm on plan)including dressing of sides and ramming of bottoms lift up to 1.5 m including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50m.	cum	36.45
4	Supply and filling in plinth with local sand and under floors including watering, ramming, consolidating and dressing complete	cum	3.65
5	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - all work up to plinth level.1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size) for Beam & Gate path in slope	cum	7.11
6	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.1:1:2 (1 cement:1 coarse sand:2 graded stone aggregate 20mm nominal size) for Beam pile column pergola top and Security Room	cum	22.43
7	Brick work with bricks of class designation 100A in foundation and plinth in :Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	11.22
8	Providing 20mm thick cement plaster 1:6(1cement:6 coarse sand)	Sqm	89.76
9	Finishing walls with water proofing cement paint of approved brand and manufacture and of required shade to give an even shade New work(three or more coats)Plaster area	Sqm	89.76
10	Providing and laying Red Sand Stone as per approved sample 30 mm thk (only cladding)	sqm	2.70
11	Reinforcement for R.C.C work including straightening, cutting, bending, placing in position and binding all complete	kg	4262.10
12	Steel work welded in built up sections/framed work including cutting hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel, etc. as required. In gratings, frames, guard bar, ladders, railings, brackets. Gates & similar works. @ 40 kg /Sqm(Gate grill)	Kg	864.00
13	Carriage of Materials		
	Steel	MT.	4.26
	bricks	thousand	5.54
	stone	cum.	25.40
	cement	Mt.	16.30
	Sand	cum.	18.03
10	Item of ENTRANCE GATE		
1	Making 25cm (10”) dia bore up to 5 M depth below ground with hand auger of approved quality in ordinary soil (vide classification of soil item-A) true to plumb and without eccentricity in any stage of operation and disposal of the excavated earth up to 50 M lead including all lifts, all complete as per approved design and direction of E/I./	Rmt	60.00
2	Making 63 cm (25”) dia under-ream at required depth with hand auger of approved quality in ordinary soil (vide classification of soil item-A) true to plumb and without eccentricity in any stage of operation and disposal of the excavated earth up to 50M lead including all lifts, all complete as per approved design and direction of E/I.	Each	24.00

3	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 M in width 10 sqm on plan)including dressing of sides and ramming of bottoms lift up to 1.5 m including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50.0m	cum	59.17
4	Supply and filling in plinth with local sand and under floors including watering, ramming, consolidating and dressing complete	cum	5.92
5	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - all work up to plinth level.1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size) beam	cum	14.24
6	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.1:1:2 (1 cement:1 coarse sand:2 graded stone aggregate 20mm nominal size)	cum	107.97
7	Brick work with bricks of class designation 100A in foundation and plinth in :Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	13.28
8	Providing 20mm thick cement plaster 1:6(1cement:6 coarse sand)	Sqm	53.10
9	Finishing walls with water proofing cement paint of approved brand and manufacture and of required shade to give an even shade New work(three or more coats)Plaster area	Sqm	53.10
10	Providing and laying Red Sand Stone as per approved sample 30 mm thk (only cladding)	sqm	36.30
11	Stone work for wall lining etc.(Veneer work) over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand) and jointing with grey cement slurry 3.30 kg/sqm including rubbing and polishing complete.(to be secured to the backing by means of cramps which shall be paid separately)Dressing of sandstone in veneer work		19.80
12	Reinforcement for R.C.C work including straightening, cutting, bending, placing in position and binding all complete	kg	20514.73
13	Steel work welded in built up sections/framed work including cutting hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel, etc. as required. In gratings, frames, guard bar, ladders, railings, brackets. Gates & similar works. @ 40 kg /Sqm(Gate grill)		1256.00
14	Carriage of Materials		
	Steel	MT.	20.51
	bricks	thousand	6.56
	stone	cum.	91.77
	cement	Mt.	67.42
	Sand	cum.	50.71
	Total		
11	Item of Swimming Pool		
1	Earth work in excavation over areas (exceeding 30 cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead up to 50m and lift up to 1.5m ; disposed earth to be levelled and neatly dressed. All kinds of soil	cum	279.10
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth: consolidating each deposited layer by ramming and watering lead.	cum	103.30

3	Providing and laying 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 20 mm thick cement mortar 1:4 (1 cement: 4 coarse Sand) including grouting the joint with white cement and matching pigments etc., complete.Size of Tile 50x50 cm.	SQM	1377.10
4	Supplying and filling in plinth with local sand and under floors including, watering, ramming consolidating and dressing complete.	cum	238.60
5	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - all work up to plinth level.1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size)	cum	2940.80
6	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. 1:1.5:3 (1 cement: 1.5 coarse sand: 3 graded stone aggregate 20 mm nominal size)	cum	4902.30
7	Reinforcement for R. C. C work including straightening, cutting, bending, placing in position and binding all complete.	KG	76.70
8	Walls (any thickness) including attached plasters, buttresses, plinth and string courses etc. Foundations, footings, bases Columns	Sqm	321.30
9	Foundations, footings, bases Columns	SQM	185.90
10	Brick work with bricks of class designation 100A in foundation and plinth in :Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	5037.20
11	12 mm cement plaster of mix 1:4 (1 cement : 4 coarse sand)	SQM	139.90
12	Neat cement punning	sqm	38.60
13	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622 (Thickness to be specified by the manufacture) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer -in-Charge in skirting, risers of steps and dados over 12 mm thick bed of cement Mortar 1:3 (1cement : 3 coarse Sand) and jointing with grey cement slurry @ 3.3 kg per sqm including pointing in white cement mixed with pigment of matching shade complete.	Sqm	739.80
14	Providing and laying Ceramic glazed floor tiles 300x300 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS: 15622 of approved make in colours such as white , Ivory , Grey , Fume Red , Brown , laid on 20 mm thick Cement mortar 1:4 (1 cement: 4 coarse Sand) including pointing the joints with white cement and matching pigment etc., complete	SQM	671.00
15	Kota stone slab flooring over 20 mm (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 . Base with 1:1:1 (1 lime : 1 surkhi: 1 coarse Sand) / 1:4 :- 20 to 25 mm thick -	SQM	1119.60
16	Providing and fixing 18 mm 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, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels. :-Granite of any colour and shade Area of slab up to 0.50 sqm	SQM	3741.20

17	Providing and laying integral cement based treatment for water. proofing on horizontal surfaces at all levels as directed by Engineer-in-charge and consisting of: 1) 1st layer of 20 mm thick approved and specified rough stone slab over a 25 mm thick base of cement mortar 1:3 (1 cement:3 coarse sand) mixed with water proofing compound conforming to IS: 12645 in the recommended proportion. Joints sealed and grouted with cement slurry mixed with water proofing compound conforming to IS: 12645 in proportions recommended by the manufacturer. II) 2nd'class layer of mm thick cement mortar 1:3 (1cement:3 coarse sand) mixed water proofing compound in recommended proportions. III) Finishing top with stone aggregate of 10 mm to 12 mm nominal size spreading @ 8 cudm/sqm thoroughly embedded in the 2nd layer.	SQM	1304.30
18	Providing and laying integral cement based treatment for water proofing on the vertical surface by fixing specified stone slab 20 mm thick with cement slurry mixed with water proofing compound conforming to IS: 2645 in recommended proportion with a gap of 20mm (minimum) between stone slabs and the receiving surfaces and filling the gaps with neat cement slurry mixed with water proofing compound and finishing the exterior of stone slab with cement mortar1:4 (1 cement:4 coarse sand) 20 mm thick with neat cement punning mixed with water proofing compound in recommended proportion complete at all levels and as directed by Engineer-in-charge. using rough kota stone	SQM	1627.80
19	Fixing glazed/ Ceramic/ Vitrified floor tiles with cement based high polymer modified quick-set tile adhesive (Water based) conforming to IS: 15477, in average 3 mm thickness.	SQM	380.60
20	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete	kg	122.90
21	welding Fixed to openings/ wooden frames with rawl plugs providing and suppling lane ropes with anchor brackets	each	1680.00
22	Carriage of Materials		
	Steel	MT.	47.47
	Bricks	per thousand	16.78
	Stone	cum.	535.00
	Cement	Mt.	242.37
	Sand	cum.	331.10
12	Item of Parking		
1	Supply and filling in plinth with local sand and under floors including watering, ramming, consolidating and dressing complete	Cum	395.48
2	Providing and laying Wet Mix macadam in layers with all leads and lifts etc. Complete as per drawings, Technical Specification 406 and as directed by the Engineer, With Vibratory Roller 50% of total area	cum	659.13
3	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - all work up to plinth level.1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size)	Cum	158.19

4	Providing and laying factory made chamfered edge Cement Concrete paver blocks of required strength, thickness & size/shape, made by table vibratory method , to attain superior smooth finish using PU or equivalent moulds, laid in required Grey colour & pattern over 50mm thick compacted bed of coarse sand, compacting and proper embedding / laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with Yamuna sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand In footpath, parks, lawns, drive ways or light traffic parking etc. all complete as per manufacturer's specifications & direction of Engineer–in Charge (a) 80 mm thick c.c. paver block of M-35 grade with approved colour design and pattern.	Sqm	1581.90
5	Providing and laying 500x500x40 mm thick Turf paver (Turf pave XD) on 150 mm thick sub grade of compacted bed of 20 mm thick nominal size stone aggregate and base course and filling with 150 mm thick Yamuna sand, including spreading, well ramming, consolidating and finishing smooth etc. all complete as per direction of Engineer-in-charge.50% of total area on the top of wmm area	Sqm	2636.50
6	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement concrete 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	115.00
7	Retro- reflectorized Traffic signs (Providing and fixing of retro- reflectorized cautionary, mandatory and inforamatory sign as per IRC :67 made of encapsulated lens type reflective sheeting vide clause 801.3, fixed over aluminum sheeting, 1.5 mm thick supported on a mild steel angle iron post 75 mm x 75 mm x 6 mm firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete 45 cm x 45 cm x 60 cm, 60 cm below ground level as per approved drawing.) 60 cm equilateral triangle	each	12.00
7	Carriage of Materials		
	Paver Block	thousands	51.02
	Stone chips	cum.	1010.67
	cement		26.89
	Sand	cum.	469.35
13	Item of Open Air Theater (OAT)		
1	Demolishing cement concrete including disposal of material within 50 meter lead of seating and boundary 1:3:6 or richer mix Carriage up to 5km	cum	125.56
2	12 mm thick cement plaster of mix:1:3 (1 cement:3 coarse sand)	sqm	585.00
3	20 mm thick cement plaster of mix:1:4 (1 cement:4 coarse sand)	sqm	1512.00
4	Supplying sand stone 40 mm thick for flooring ,carriage to site and rough chisel dressing on Open Air theater (STEPS SEATING) under engineer in charge Red sand stone	sqm	491.40

5	40 mm thick rough chisel dressed stone flooring over 20 mm (average)thick base with joint base 1:1:1 (1lime :1surkhi:1coarse Sand) or 1:5 (1:cement :5coare Sand) finished flush. all the work going under the supervision of engineer in charge Red sand stone	sqm	1000.08
6	Providing and fixing 10x10x7.50 cm Granite stone block hand cut and chisel dressed on top, for paving in floors, drains etc. laid over 20mm thick base mortar 1:4 (1 cement : 4 coarse sand) with joints 10mm wide filled with same mortar including ruled pointing etc. complete as per direction of engineer-in-charge.	sqm	93.50
7	Providing and faying cement concrete in platform area. 1:2:4 (1 Cement :2 coarse sand :4 grade stone aggregate 20 mm nominal size)	cum	76.30
8	Supplying sand stone 40 mm thick for flooring ,carriage to site and rough chisel dressing on Open Air theater (STEPS SEATING) under engineer in charge Red sand stone	sqm	508.68
9	40 mm thick rough chisel dressed stone flooring over 20 mm (average)thick base with joint base 1:1:1(1lime :1surkhi:1coarse Sand) or 1:5 (1:cement:5coare Sand) finished flush. all the work going under the supervision of engineer in charge Red sand stone	sqm	508.68
10	Providing Cement concrete on tap face 1:2:4(1cement :2coarse sand :4grade stone aggregate 20mm nominal size)	cum	9.00
11	Providing and fixing 10x10x7.50 cm Granite stone block hand cut and chisel dressed on top, for paving in floors, drains etc. laid over 20mm thick base mortar 1:4 (1 cement : 4 coarse sand) with joints 10mm wide filled with same mortar including ruled pointing etc. complete as per direction of engineer-in-charge.	sqm	86.00
12	Finishing with Deluxe Multi surface paint system for interiors and exteriors wall of boundary using Primer as per manufacturer’s specifications. Two or more coats applied on walls @ 1.25 liter/10 sqm over and including one coat of special primer applied @ 0.75 liter /10	sqm	1512.00
13	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all Fixed to steel windows by	Kg	6000.00
14	Painting with ready mixed paint of approved brand and manufacture in all shades to give an even shade: New steel work (two or more coats)	sqm	250.00
15	Carriage		
	Coarse Sand		79.02
	Stone Chips		76.76
	Cement		37.38
	Steel		6.00
14	Item of Basketball Court		
1	Earth work in excavation over areas (exceeding 30 cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead up to 50m and lift up to 1.5m ; disposed earth to be levelled and neatly dressed. All kinds of soil	cum	94.00
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth: consolidating each deposited layer by ramming and watering lead.	cum	30.00

3	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - all work up to plinth level.1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size)	cum	33.00
4	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. 1:1.5:3 (1 cement: 1.5 coarse sand: 3 graded stone aggregate 20 mm nominal size)	cum	61.00
5	Reinforcement for R. C. C work including straightening, cutting, bending, placing in position and binding all complete.	KG	4880.00
6	Brick work with bricks of class designation 100A in foundation and plinth in : Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	35.00
7	52 mm thick cement concrete flooring with metallic concrete hardener topping under layer 40 mm thick cement concrete 1:2:4(1 cement: 2 coarse sand: 4 graded stone aggregate 20 mm nominal size) and top layer 12 mm thick metallic concrete hardener consisting of mix 1:2 (1 cement hardener mix: 2 stone aggregate 6 mm nominal size) by volume @ 2 liter per 50 kg of cement or as per manufacture specification. This includes cost of cement slurry, etc. but excluding the cost of nosing of steps etc. complete.	SQM	608.00
8	Providing and fixing glass strips in joints of terrazzo/cement concrete floors, 40mm wide and 4mm thick	Polyethylene	300.00
9	Providing and Fixing One pair of Basketball Pole (made of minimum 5.0 mm thick 8" round pipe), Acrylic Backboard with angle iron frame (180mm x 105mm x 25mm), Ring (20mm solid Rod) and Net (regulation size) Movable type as per standards. Contractor shall get approved the make and design of the pole and accessories from the engineer-in charge. Approved make - STAG, RIDO, ESSKAY, and KHALSA SPORTS, VINEX or equivalent.	Pair	1.00
10	Floor painting with floor enamel paint of approved brand and manufacture of required colour to give an even shade, Providing and laying 50mm wide x 52 mm thick White Cement Border line(Boundary Line, Base Line, Side line and internal lines) including the cost of centering and shuttering required to create Curves, D's, Circles etc. complete as per drawing.	SQM	162.00
11	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacture's specifications including appropriate priming coat, preparation of surface, etc. complete. On Concrete work	SQM	180.00
15	Trellis Walkway		
1	Earth Work Excavation in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m. Including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All Kinds of Soil All Work Up To Plinth Level	Cum	85.60
2	Provide PCC Layer of M-15 grade plain cement concrete (cement content considered @ 240 kg/cum)	Cum	2.30
3	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centering, shuttering, finishing and reinforcement-All	Cum	12.10

	work up to plinth level 1:1:5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)		
4	Centering and shuttering including strutting, propping etc. and removal of form for Foundations, footings, bases of columns etc. for mass concrete. Lintels, beams, plinth beams, girders, bressumers and cantilevers.	Sqm	138.00
5	12 mm cement plaster of mix:1:4(1 cement :4 coarse sand)	Sqm	70.00
6	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete		
	Thermo-Mechanically Treated bars TMTC-500-10mm dia.	Kg	1900.00
	Thermo-Mechanically Treated bars TMTC-500-8mm dia.	Kg	215.00
7	Providing wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position with hold fast lugs or with dash fasteners of required dia & length (hold fast lugs or dash fastener shall be paid for separately).Sal Wood	Cum	7.92
8	Providing and Fixing, adjustable with stainless steel nuts, bolts and Asher (total weight not less than 260 gms), for dry stone cladding fixed on frame work at suitable location, including making necessary recesses in stone slab, drilling required holes etc complete as per direction of the Engineer-in-charge.	Each	112.00
9	Painting wood work with Deluxe Multi Surface Paint of required shade. Two or more coat applied @ 0.90 ltr/ 10 sqm over an under coat of primer applied @ 0.75 ltr/ 10 sqm of approved brand and manufacture.	Sqm	290.40
10	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade :New work (Two or more coat applied @ 1.43 ltr/ 10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/ 10 sqm)	Sqm	70.00
11	Providing and applying white cement based putty of average thickness 2 sqm 117.60 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	Sqm	70.00
12	Painting with ready mixed paint of approved brand and manufacture in all shades to give an even shade: New wood work (two or more coats)	Sqm	290.40
13	Carriage		
	Coarse Sand	Cum	7.22
	Stone Chips	Cum	12.48
	Cement	MT	6.18
	Steel	MT	2.12
16	Renovation of Existing Indoor Badminton Stadium		
1	Demolishing cement concrete including disposal of material within 50 meter lead:1:3:6 or richer mix	Cum	28.24
2	Dismantling doors windows and clerestory windows (steel or wood) shutters including chowkhats, architrage, holdfasts etc. complete and stacking within 50 meters lead: Of area 3 sqm and below	Each	50.00
3	Demolishing brick work including stacking of serviceable material and disposal of unserviceable material within 50 polyethylenes lead:In cement mortar	Cum	48.00

4	Dismantling wood work in frames, trusses, purlins and rafters up to 10 meters span and 5 meters height including stacking the material within 50 meters lead:Of sectional area 40 cm* and above	Cum	14.12
5	Dismantling roofing including ridges, hips valleys and gutters etc. and stacking the material within 50 meters lead of:G.I. Sheet	Sqm	853.20
6	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - all work up to plinth level. 1:3:6 (1 Cement: 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	Cum	42.66
7	Brick work with bricks of class designation 100A in foundation and plinth in :Cement mortar 1:4 (1 cement : 4 coarse sand)	Cum	33.96
8	12 mm cement plaster of mix 1:4 (1 cement : 4 coarse sand)	Sqm	361.55
9	Reinforced cement concrete in walls (any thickness) including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. up to floor five level, excluding the cost of centering, shuttering, finishing and reinforcement. 1:1.5:3 (1 Cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	Cum	13.48
10	Centering and Shuttering including strutting, propping etc. and removal of form for Suspended floors, roofs, landings, balconies and access platform.	Sqm	89.87
11	Reinforcement for R.C.C work including straightening, cutting, bending, placing in position and binding all complete. Thermo - Mechanically Treated bars TMTC - 500-10mm dia	kg	1058.20
12	Providing corrugated G.S. sheet roofing fixed with G.I.J. or hooks, bolts and nuts 8 mm diapolyethylene with bitumen and G. I. limpet washers or with G.I. limpet washers filled with white lead and including a coat of approved steel primer and two coats of approved paint on over lapping of sheets complete (up to a pitch of 60°) excluding the cost of purlins, rafters and trusses.1.00 mm thick with zinc coating not less than 275 gm/m z	Sqm	972.00
13	Providing & fixing in position Phenol bonded Bamboowood flooring with planks of sizes 14mm thick, 1800mm length (minimum) and 130 mm wide(minimum), in approved colour, texture and finish, having Performance Appraisal Certificate (PAC) issued by Building Materials & Technology Promotion Council (BMTPC). The flooring shall be fixed with tongue and groove interlocking system, with underlayment of 4mm thick expanded poly ethylene foam sheets having density 40kg/cum, over prepared surface with necessary quarter round planks of size 1900mm x 18mm and door reducer of size 1900mm x 44mm, wherever required. The bomboo wood planks shall have minimum density of 1000 Kg/cum & minimum Hardness 1000 Kgf. with Eco friendly UV coating, all complete as per direction of the Engineer in-charge.	Sqm	568.80
14	Providing and laying Ceramic glazed floor tiles 300x300 mm (thickness to be specified by the manufacturer) of ist quality conforming to IS: 15622 of approved make in colours such as white , Ivory , Grey , Fume Red , Brown , laid on 20 mm thick Cement mortar 1:4 (1 cement: 4 coarse Sand) including pointing the joints with white cement and matching pigment etc., complete	Sqm	284.40
15	Painting with synthetic enamel paint of approved brand and manufacture to give an even shed. Two or more coats on new work	Sqm	2741.30
16	Providing and applying plaster of Paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete.	Sqm	2741.30

17	Removing white or colour wash by scrapping and sand paper in and preparing the surface smooth including necessary repair scratches etc. complete	Sqm	2469.60
18	Painting Steel work with Deluxe Multi Surface Paint to give an even shade. Two or more coat applied @ 0.90 ltr/ 10 sqm over an under coat of primer applied @ 0.80 ltr/ 10 sqm of approved brand and manufacture.	Sqm	384.00
19	Providing and fixing steel glazed doors, windows and ventilators of standard rolled steel sections, joints mitered and welded with 15x3 mm lugs 10 cm long with steel lugs embedded in cement concrete blocks 15x10x10 cm of 1:3:6(1 cement: 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) or with wooden plugs and screws or rawl plugs and screws or with fixing clips or with bolts and nuts as required, including providing and fixing of glass panes with glazing clips and special metal-sash putty of approved make complete including applying a priming coat of approved steel primer; excluding the cost of metal beading and other fitting except necessary hinges or pivots as required.	Sqm	97.50
20	Sanitary Installation :-Providing and fixing white vitreous china battery based infrared sensor operated urinal of approx. size 610 x 390 x 370 mm having pre & post flushing with water (250 ml & 500 ml consumption), having water inlet from back side, including fixing to wall with suitable brackets all as per manufacturers specification and direction of Engineer-in-charge.	Each	1.00
21	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS 13983 with C.I brackets and stainless steel plug 40mm including painting of fittings and brackets, cutting and making good the walls wherever required: Kitchen sink with drain board 510x1040mm bowl depth 178mm	Each	1.00
22	Providing and fixing 600X450mm beveled edge mirror of superior glass complete with 6mm thick hard board ground fixed to wooden cleats with CP brass screws & washers complete.	Each	3.00
23	Providing and fixing PVC waste pipe for sink & wash basin including PVC waste fittings complete Semi rigid pipe 32 mm dia	Each	1.00
24	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC)pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall		
	20 mm Nominal outer dia pipes	Meter	5.00
	25 mm Nominal outer dia pipes	Meter	25.00
	32 mm Nominal outer dia pipes	Meter	38.00
25	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC)pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Concealed work, including cutting chases and making good the		
	20 mm Nominal outer dia pipes	Meter	13.00
	25 mm Nominal outer dia pipes	Meter	7.00

26	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings This includes jointing of pipes & fittings with one step CPVC solvent cement trenching refilling & testing of joints complete as per direction of Engineer in Charge. External work -32 mm Nominal outer dia pipes	Meter	10.00
27	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings This includes jointing of pipes & fittings with one step CPVC solvent cement trenching refilling & testing of joints complete as per direction of Engineer in Charge.		
28	Providing and fixing brass stop cock of approved quality 20 mm Nominal bore	Each.	1.00
29	Providing and fixing gun metal gate valve with C.I. wheel of approved quality. 25 mm Nominal bore	Each.	3.00
	32 mm Nominal bore	Each.	4.00
30	Providing and fixing plasticized PVC connection pipe with brass unions.45 cm length 15 mm Nominal bore	Each.	3.00
31	Providing and fixing G.I. union in G.I. pipe including cutting and threading the pipe and making long screws etc. 20 mm dia. Nominal bore	Each.	1.00
	25 mm dia. Nominal bore	Each.	3.00
	32 mm dia. Nominal bore	Each.	4.00
32	Providing and fixing C.P. brass long nose bib cock of approved quality conforming to IS standards and weighing not less than 810 gms.15 mm Nominal bore	Each	4.00
33	Providing and fixing PTMT grating of approved quality and colour. Circular type 100mm nominal dia.	Each	2.00
34	Providing and placing on terrace polythethylene water storage tank ISI : 12701 marked with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank. (2000x1=2000)	Per litre	2000.00
35	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS: 13592 Type A including jointing with seal ring conforming to IS: 5382 leaving a 10 mm gap for thermal expansion.(i) Single socketed pipes.110 mm diameter	Meter	20.00
36	Providing and fixing on wall face unplasticised Rigid PVC moulded fittings/ accessories for unplasticised Rigid PVC rain water pipes conforming to IS: 13592 Type A including jointing with seal ring conforming to IS: 5382 leaving a 10 mm gap for thermal expansion. 110 mm Single pushfit Coupler	Each	5.00
	110 mm bend Bend 87.5°	Each	5.00
	110 mm Shoe Shoe (Plain)	Each	5.00
37	Providing and fixing unplasticised - PVC pipe clips of approved design to unplasticised - PVC rain water pipes by means of 50 x 50 x 50 mm hard wood plugs, screwed with M.S. screws of required length cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse Sand)and making good the wall etc. complete.110 mm	Each	15.00
38	Providing and fixing to the inlet mouth of rain water pipe cast iron grating 15 cm diapolyethylene and weighing not less than 440 grams.	Each	5.00

39	GYM EQUIPMENTS		
	Commerciat Motorized Trade Mill Product id: 5116877-20575903247	No.	2.00
	Commerciat Elliptical Cross Trainer Product id: 5116877-83621265430	No.	2.00
	Commercial Gym S R Electronic Cycle Product id: 5116877-88927229284	No.	2.00
	Commercial Smith Machine for Gym Product id: 5116877-14487013616	No.	2.00
	Commercial Cable Cross over for Gym Product id: 5116877-34916229864	No.	2.00
	Big Gym Ball 95 CM Product id: 5116877-71866501753	No.	5.00
	Medicine Ball for 1 to 10 Kg. for the Gym MEDICINE BALL 1 KG (HRS) Product id: 5116877-7830289572	No.	5.00
	5 Kg Product id: 5116877-61968411280	No.	5.00
	3 Kg Product id: 5116877-60249516699	No.	5.00
	Bench press inclined MULTIPURPOSE ADJUSTABLE BENCH PRESS Product id: 5116877-80463679018	No.	2.00
	Flat Bench (Adjustable) Olympic Flat Bench Product id: 5116877-27292292784	No.	2.00
	Orbit Elliptical machine/ELLIPTICAL EXERCISE MACHINE Product id: 5116877-62699339198	No.	1.00
	Multi Gyms - Abdominal Crunch VIVA FITNESS Multi Abdominal Bench, DFT-637 Product id: 5116877-45115314272	No.	2.00
	45 Degree leg Press LEG PRESS (PREMIER)	No.	2.00
	Leg Extension/Leg Curl - LEG SHAPER / LEG PRESS	No.	1.00
	Foam Roller for Gym IRIS Interlocking Gym EVA Foam Floor Mat Tiles (80 sqft) (Off white)	No.	2.00
	AB wheel for Gym AB 75LTR MS WITH WHEEL HAND CART	No.	2.00

	Dumbles Set of-2 (5kg)	No.	2.00
	2.5 Kg	No.	2.00
	10 Kg,	No.	2.00
	7.5 Kg	No.	2.00
	17.5 Kg	No.	2.00
	8 Station Multi Gym (NA) (Fitness World Multi Station Gym 8)	No.	2.00
	Mirror (3 m x 2 m)	No.	2.00
	Locker for gym (GODREJ 6 DOOR PLU BASE UNIT LOCKER WITHOUT STAND / PERSONAL LOCKER UNIT / COLLEGE / GYM)	No.	1.00
	Rubber Mat for Gym Per Piece of 1.53 Sqm	No.	10.00
17	Item of New Extension of Indoor Badminton Court Building		
1	Earth work in excavation over areas (exceeding 30 cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead up to 50m and lift up to 1.5m ; disposed earth to be levelled and neatly dressed. All kinds of soil	cum	71.25
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth: consolidating each deposited layer by ramming and watering lead.	cum	19.00
3	Supplying and filling in plinth with local sand and under floors including, watering, ramming consolidating and dressing complete.	cum	10.69
4	Providing designation 100 A one brick flat soling joints filled with local sand including cost of watering, taxes, royalty all complete as per building specification and direction of E/	Sqm	751.75
5	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering-all work up to plinth level. 1:3:6 (1 Cement: 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	Cum	112.76
6	Making 25cm (10”) dia bore up to 5 M depth below ground with hand auger of approved quality in ordinary soil (vide classification of soil item-A) true to plumb and without eccentricity in any stage of operation and disposal of the excavated earth up to 50 M lead including all lifts, all complete as per approved design and direction of E/I./	Rmt	100.00
7	Making 63 cm (25”) dia under-ream at required depth with hand auger of approved quality in ordinary soil (vide classification of soil item-A) true to plumb and without eccentricity in any stage of operation and disposal of the excavated earth up to 50M lead including all lifts, all complete as per approved design and direction of E/I.	Each	40.00
8	Brick work with bricks of class designation 100A in foundation and plinth in :Cement mortar 1:4 (1 cement : 4 coarse sand) wall	cum	185.25
9	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centering, shuttering, finishing and reinforcement-All	cum	29.60

	work up to plinth level. 1:1.5:3 (1 cement: 1.5 coarse sand: 3 graded stone aggregate 20 mm nominal size) for Beam Column Gate,lintel, column & gate		
10	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc. , beam, lintel, column, ramp path	Sqm	244.70
11	Reinforcement for R. C. C work including straightening, cutting, bending, placing in position and binding all complete. Thermo - Mechanically Treated bars TMTC - 500-10mm dia	kg	76.70
12	12 mm cement plaster of mix 1:4 (1 cement : 4 coarse sand)	Sqm	1143.60
13	Providing & fixing in position Phenol bonded Bamboo wood flooring with planks of sizes 14mm thick, 1800mm length (minimum) and 130mm wide(minimum), in approved colour, texture and finish, having Performance Appraisal Certificate (PAC) issued by Building Materials& Technology Promotion Council (BMTPC). The flooring shall be fixed with tongue and groove interlocking system, with under layment of 4mm thick expanded poly ethylene foam sheets having density 40kg/cum, over prepared surface with necessary quarter round planks of size 1900mm x 18mm and door reducer of size 1900mm x 44mm, wherever required. The bamboo wood planks shall have minimum density of 1000 Kg/cum & minimum Hardness 1000 Kg. with Eco friendly UV coating, all complete as per direction of the Engineer in-charge.	sqm	465.00
14	Providing and laying Ceramic glazed floor tiles 300x300 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS: 15622 of approved make in colours such as white , Ivory , Grey , Fume Red , Brown , laid on 20 mm thick Cement mortar 1:4 (1 cement: 4 coarse Sand) including pointing the joints with white cement and matching pigment etc., complete	SQM	310.00
15	Providing and installing of pre painted Galvanized Trapezoidal profiled sheet of approved make 1060mm width (1000mm cover width), 28-30 mm crest height with crest distance of 200mm c/c with 2 ribs at the center for stiffening. The total coated thickness (TCT) of the sheet will be 0.47mm +/- 0.02mm tolerance zinc-alu alloy coating AZ150 gsm as per ASTM 1397/A755-550 mpa steel grade,5-7 microns epoxy primer on both sides of the sheet and polyester top coat 20-22 microns using self-drilling/self-tapping screws of 25mm length, to be fixed over the existing purlins, rafters, channels and trusses	sqm	832.00
16	Providing and installing of approved make pre painted galvalume Iron Accessories, like, plain, ridges, plain gutter, plain flashing, corner trim, etc., The total coated thickness (TCT) of the sheet shall be 0.47mm +/- 0.02 tolerancemm Zinc-Alu Alloy coating AZ 150gms as per ASTM 1397/755-550 mpa steel grade, 5-7 microns epoxy primer on both sides of the sheet and polyester top coat 20-22 microns using self-drilling/ self-tapping screws of 25mm length. (Width up to 500-600 mm only), to be fixed over the existing purlins, rafters, channels and trusses. for gutters & Ridges	Sqm	28.80
17	Fabrication supplying and erecting M.S Angular trusses for all spans as per approved drawing and design. The entire trusses is anchored Suitably by using 4nos of M.S. anchor bolts at each support with base plate and shoe plate. the work includes cutting, straightening, placing in position of M.S angle and welding whenever necessary and applying one coat of red oxide primer coat to all the members including cost of all materials, welding, grinding and erection equipment’s, with all lead and lift, transportation etc., complete as per specifications	kg	29742.50

18	Providing and fixing M.S. round holding down bolts with nuts and washer plates complete.	Kgs	60.00
19	Painting with synthetic enamel paint of approved brand and manufacture to give an even shed. Two or more coats on new work	sqm	1143.60
20	Stone work for wall lining etc.(Veneer work) over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand) and jointing with grey cement slurry 3.30 kg/sqm including rubbing and polishing complete.(to be secured to the backing by means of cramps which shall be paid separately)Dressing of sandstone in veneer work (in gate Area)	sqm	18.00
21	Steel work welded in built up sections/framed work including cutting hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel, etc. as required. In gratings, frames, guard bar, ladders, railings, brackets. Gates & similar works. Gate grill & IRON Steel	kg	23840.00
22	Providing and fixing steel glazed doors, windows and ventilators of standard rolled steel sections, joints mitered and welded with 15x3 mm lugs 10 cm long with steel lugs embedded in cement concrete blocks 15x10x10 cm of 1:3:6(1 cement: 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) or with wooden plugs and screws or rawl plugs and screws or with fixing clips or with bolts and nuts as required, including providing and fixing of glass panes with glazing clips and special metal-sash putty of approved make complete including applying a priming coat of approved steel primer; excluding the cost of metal beading and other fitting except necessary hinges or pivots as required.	Sqm	6.30
	Carriage		
	Coarse Sand	Cum	149.00
	Stone Chips	Cum	130.00
	Cement	MT	60.22
	Steel	MT	59.50
	Brick	thousands	100.23
18	RENOVATION AND EXTENSION OF GYM BUILDING		
1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering-all work up to plinth level.		
	1.4.8 (1 Cement :4 coarse sand :8 graded stone aggregate 40 mm nominal size)	cum	29.70
	1.3.6 (1 Cement :3 coarse sand :6 graded stone aggregate 40 mm nominal size)	cum	29.70
2	Making plinth protection 50 mm thick of cement concrete 1:3:6 (1 cement :3 coarse sand : 6 graded stone aggregate 20 mm nominal size) over 75 mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including finishing the top smooth.	Sqm	85.80
3	Providing and laying damp-proof Course 50 mm thick with cement concrete 1:2:4(1cement:2:2 coarse sand :4 graded stone aggregate 20mm nominal size)	sqm	271.15

4	Providing and laying factory made chamfered edge Cement Concrete paver blocks of required strength, thickness & size/shape, made by table vibratory method , to attain superior smooth finish using PU or equivalent moulds, laid in required Grey colour & pattern over 50mm thick compacted bed of coarse sand, compacting and proper embedding / laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with Yamuna sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand in footpath, parks, lawns, drive ways or light traffic parking etc. all complete as per manufacturer’s specification and direction of E/l.(a) 80 mm thick c.c. paver block of M-35 grade with approved colour design and pattern.	Sqm	127.60
5	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. up to floor five level excluding cost of centering, shuttering, finishing and reinforcement.1:1:2(1 cement: 1 coarse sand:2 graded stone aggregate 20 mm nominal size) Column for beam roof Chajjas with stair	KG.	114.91
6	Centering and shuttering including strutting, propping etc. and removal of form for.		
	Foundations, footings, Pile cap, bases of columns etc. for mass concrete.	sqm	172.80
	Lintels, beams, plinth beams, girders, ressumers and cantilevers.	sqm	457.60
	Columns, Pillars, Piers, Abutments, Posts and Struts	sqm	226.80
	Stairs,(excluding landings) except spiral stair cases.	sqm	26.40
	Suspended floors, roots, landings, balconies and access platform.	sqm	324.00
7	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete up to plinth level & above plinth level. Thermo-Mechanically Treated Bars TMT (Fe 500) 6mm to 25 mm as per Approved drawing	KG.	18040.00
8	Providing and fixing M.S. grills of required pattern Providing in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all 20 MM Square Bar	KG.	915.00
9	Brick work with fly ash bricks as per IS 12894 (2002) & IS 3495 in foundations and plinth in : Cement mortar 1:4 (1 cement: 6 coarse Sand)	cum	22.80
10	Brick work with fly ash bricks as per IS 12894 (2002) & IS 3495 in foundations and plinth in : Cement Extra for Brick work in superstructure above plinth level up to floor V cum	cum	79.80
11	Providing wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position with hold fast lugs or with dash fasteners of required dia & length (hold fast lugs or dash fastener shall be paid for separately).Second Class Teak Wood	Cum	2.77
12	Providing and fixing paneled or paneled and glazed shutters for doors, windows and clerestory windows, including ISI marked M.S.pressed butt hinges bright finished of required size with necessary screws, excluding paneling which will be paid for separately, all complete as per direction of engineering-charge. Second Class Teak Wood 35 mm	Sqm	125.66

13	30 mm thick factory made Polyvinyl Chloride (PVC) door shutter made of styles and rails of a uPVC hollow section of size 60x30 mm and wall thickness 2 mm (± 0.2 mm), with inbuilt decorative moulding edging on one side. The styles and rails mitred and joint at the corners by means of M.S. galvanised/plastic brackets of size 75x220 mm having wall thickness 1.0 mm and stainless steel screws. The styles of the shutter reinforced by inserting galvanised M.S. tube of size 25x20 mm and 1 mm (± 0.1 mm) wall thickness. The lock rail made up of ‘H’ section, a uPVC hollow section of size 100x30 mm and 2 mm (± 0.2 mm) wall thickness fixed to the shutter styles by means of plastic/ galvanised M.S. ‘U’ cleats. The shutter frame filled with an uPVC multi chambered single panel of size not less than 620 mm, having over all thickness of 20 mm and 1 mm (± 0.1 mm) wall thickness. The panels filled vertically and tie bar at two places by inserting horizontally 6 mm galvanised M.S. rod and fastened with nuts and washers, complete as per manufacturer’s specification and direction	Sqm	8.40
14	Providing and fixing ISI marked flush door shutters conforming to IS: 2202 (Part I) decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 3 ply veneering with vertical grains or cross bands and face veneers on both face of shutters Rs. Description 35 mm thick including stainless steel butt hinges with necessary	Sqm	15.12
15	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622 (Thickness to be specified by the manufacture) of approved make in all colours, shades except burgundy , bottle green , black of any size as approved by Engineer-in-charge in skirting , risers of steps and dados over 12 mm thick bed of cement Mortar 1:3(1 cement: 3 coarse Sand) and jointing with grey cement slurry @ 3.3 kg per sqm including pointing in white cement mixed with pigment of matching shade complete	sqm	171.60
16	Providing and laying 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 20 mm thick cement mortar 1:4 (1 cement: 4 coarse Sand) including grouting the joint with white cement and matching pigments etc., complete Size of tile 60x60cm	sqm	542.30
17	Kota stone slabs 20 mm thick in risers of steps skirting. Dado & pillars laid on 12 mm (average(thick cement mortar 1:3(1 cement; 3 coarse Sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete	sqm	255.20
18	Sheets Rubber tile LP Stud confirming to IS 809 4.0 mm thick	sqm	373.67
19	Providing and laying in situ five course water proofing treatment with glass fiber tissue reinforced bitumen over roof consisting of first coat of bitumen primer @ 0.40 kg. Per sqm, 2nd & 4th courses of bonding material® 1.60 kg. per sqm which shall consist of blown type bitumen of grade 85/25 conforming to IS: 702, third layer of glass fiber tissue course as specified, fifth, the top most layer of stone grit 6 mm and down size or pea-sized gravel spread @ 6 dmJ per sqm including preparation of surface excluding grading for slope etc. complete.	sqm	297.00
20	12 mm thick Cement Plaster of mix Internal and outer 1:4 (Cement : Coarse sand)	sqm	1201.20
21	6 mm cement plaster to ceiling of mix : 1:4 (1 cement: 4 coarse sand)	sqm	574.20

22	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	sqm	1775.40
23	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade: New work (two or more coats) over and including water thinnable priming coat with cement primer	sqm	1775.40
24	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture sqm	sqm	125.66
25	Providing 150mm wide brick drain in cement mortar (1:6) with av. 150mm clear depth and 125mm apron concrete (1: 4:8), over one brick designation 100-A flat soling in proper grade and slope at the base, the drain duly plastered in CM. (1:3) with punning over exposed surface all complete as per building specification and direction of E/i.	m	78.00
26	Commerciat Motorised Trade Mill	No.	7.00
27	Commerciat Elliptical Cross Trainer	No.	7.00
28	Commercial Gym S R Electronic Cycle	No.	10.00
29	Commercial Smith Machine for Gym	No.	2.00
30	Commercial Cable Cross over for Gym	No.	2.00
31	Big Gym Ball 95 CM	No.	10.00
	Medicine Ball for 1 to 10 Kg. for the Gym MEDICINE BALL 1 KG (HRS)	No.	10.00
33	5kg	No.	5.00
34	3kg	No.	5.00
35	Bench press inclined MULTIPURPOSE ADJUSTABLE BENCH PRESS	No.	2.00
36	Flat Bench (Adjustable) Olympic Flat Bench	No.	3.00
37	Orbit Elliptical machine/ELLIPTICAL EXERCISE MACHINE	No.	6.00
38	Generator Recumbent Bike (Fitness World)	No.	6.00
39	MultiGyms-Abdominal Crunch VIVA FITNESS Multi Abdominal Bench, DFT-637	No.	6.00
40	45 Degree leg Press LEG PRESS (PREMIER)	No.	2.00
41	Leg Extension /Leg Curl - LEG SHAPER / LEG PRESS	No.	2.00
42	Rowing Machine - ROWING MACHINE OUTDOOR Product id: 5116877-49654170141	No.	5.00

43	Foam Roller for Gym IRIS Interlocking Gym EVA Foam Floor Mat Tiles (80 sqft) (Off white)	No.	6.00
44	AB wheel for gym AB 75LTR MS WITH WHEEL HAND CART Product id: 5116877-66621574466	No.	6.00
45	Dumbles Set of 2	No.	2.00
46	2.5 Kg	No.	2.00
47	10 Kg,	No.	2.00
48	7.5 Kg	No.	2.00
49	17.5 Kg	No.	2.00
50	8 Station Multi Gym (NA) (Fitness World Multi Station Gym 8)	No.	4.00
51	Mirror (3 m x 2 m) Product id: 5116877-10155089109	No.	5.00
52	Locker for gym (GODREJ 6 DOOR PLU BASE UNIT LOCKER WITHOUT STAND / PERSONAL LOCKER UNIT / COLLEGE / GYM	No.	10.00
53	Steam Bath	No.	2.00
54	Rubber Mat for Gym	No.	50.00
55	Carriage	For Two Floor	
	Local Sand	Cum	5.50
	Coarse Sand	Cum	127.74
	Stone Chips	Cum	102.27
	Cement	MT	1581.42
	Steel	MT	18.04
TOTAL COST OF CIVIL and Equipment's			
56	Internal water supply and sanitary installations	%	4.00
57	Internal Electric Installations	%	12.50
58	Provision for Air conditioning	each	1.00
19	Item of Tennis Court - 2 courts		
1	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 50 m outside the periphery of the area cleared.	100 sqm	1.70
2	Supplying and Filling in plinth with local sand and under floors including, watering, ramming consolidating and dressing complete.	cum	70.00
3	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20 kg per sqm on the prepared bituminous/granular surface cleaned with mechanical broom.	SQM	670.00
4	Brick work with bricks of class designation 100A in foundation and plinth in :Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	8.00
5	Providing and laying of ITF Classified imported material (Acrylic Coat Made In Europe) 8 layers System Synthetic Acrylic for Tennis Court :- (1 Layer) Concrete Primer, (2 layers) Resurface, (3 layer) Cushion Rubber, (2 layers) Top Coat, making provision for fixing of fittings wherever required making it good, all complete, As per the direction of Engineer-in-charge	SQM	670.00

6	Welded steel wire fabric fencing with posts of specified material and of standard design placed and embedded in cement concrete blocks 45x45x 60 cm of mix 1:5:10 (1 cement:5 fine sand : 10 graded stone aggregate 40 mm nominal size), every 15th post, last but one end post and corner post shall be strutted on both sides and end post on one side only and struts embedded in cement concrete blocks 70x45x50 cm of the same mix, provided with welded steel wire fabric fixed between the posts fitted and fixed with G.I. staples on wooden plugs or tied to 6 mm bar nibs with G.I. binding wire (cost of posts, welded steel wire fabric, painting, earth work in excavation and concrete to be paid for separately).	SQM	330.00
7	Providing and fixing tennis net and post socket system Length and width specified by the ITF, making provision for fixing of fittings wherever required making it good, all complete, As per the direction of Engineer-in-charge. Product id: 5116877-52973885830	Pair	2.00
8	Providing 20mm thick cement plaster 1:4 (1cement:4 coarse sand)	Sqm	65.00
9	Finishing walls with texture exterior paint of required shade New work(two or more coats)	Sqm	65.00
10	Carriage Cost		
	Total		
20	Cricket Stadium Ground : Estimate of RCC Drain 0.5 x 0.75 M, Chainage 2.75 KM with Grassing & Barricading		
1	Earth Work -Excavation for Structures (Earth work in excavation of foundation of structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material.)Depth up to 1.5 m	cum	656.25
2	Timbering - Open timbering in trenches including strutting and shoring complete (Measurement to be taken of the face area timbered):Depth exceeding 1.5 m but not exceeding 3 m	Sqm	656.25
3	Dewatering and pumping out water in trenches Pumping out water caused by springs, tidal or river seepage, broken water mains or drains and the like.	KL	1312.50
4	Refilling the Excavated Trenches (Backfilling) Back filling behind abutment, wing wall and return wall complete as per drawing and Technical specification	cum	328.13
5	Back filling behind abutment, wing wall and return wall complete as per drawing and Technical specification (Below Raft)	cum	437.50
6	Clearing and Grubbing Road Land (Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 meters including removal and disposal of top organic soil not exceeding 150 mm in thickness.)	Hectare	0.11
7	DISPOSAL OF EARTH Removal of unserviceable soil and disposal up to 1000 polyethylene’s (Removal of unserviceable soil including excavation, loading and disposal up to 1000 polyethylene’s lead but excluding replacement by suitable soil which shall be paid separately)	Cum	328.12
8	Labour for filling anti cement bags with local sand, stutching the bag and placing including supply of sutri etc. all complete job as per direction of	Per 100 bags	1320.00

	Engineer in charge with carriage of local sand and cost of anti-cement bag for different type of work at site.		
	CONCRETE WORK		
9	PCC 1:3:6 in foundation: Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregate 40 mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days.1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size)	Cum	61.25
10	Centering and shuttering including strutting, propping etc. and removal or form work for Foundations, footings, bases of columns etc. for mass concrete	Sqm	525.00
	REINFORCED CEMENT CONCRETE WORK		
	RCC SLAB		
11	Plain/Reinforced cement concrete in sub-structure complete as per drawing and technical specifications RCC grade M30 - with batching plant, transit mixer and concrete pump	Cum	122.50
12	Centering and shuttering including strutting, propping etc. and removal or form work for Foundations, footings, bases of columns etc. for mass concrete	Sqm	656.25
13	Plain/Reinforced cement concrete in sub-structure complete as per drawing and technical specifications RCC grade M30 - with batching plant, transit mixer and concrete pump	Cum	153.13
14	Centering and shuttering including strutting, propping etc. and removal or form work for Walls (any thickness) including attached pilasters. Butteresses, plinth and string courses etc.	Sqm	2975.00
15	REINFORCEMENT Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications	MT	43.27
16	Constructing brick masonry circular manhole 1.52 m internal dia at bottom and 0.56 m dia at top in cement mortar 1:4 (1 cement : 4 coarse sand) inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement, all complete as per standard design :	each	10.00
17	Constructing brick masonry road gully chamber 110x50x77.5 cm with bricks in cement mortar 1:4 (1 cement : 4 coarse Sand) with precast R.C.C. vertical grating complete as per standard design : (@ 1 per 20 m)	each	7.00
18	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete. (For silt traps for box drain)	kg	125.00
19	Surface dressing of the ground including removing vegetation and in-equalities not exceeding 15cm deep and disposal of rubbish, lead up to 50m and lift up to 1.5m	100 Sqm	225.00
20	Supplying and Filling in plinth with local Earth/sand and under floors including, watering, ramming consolidating and dressing complete.	cum	6750.00
21	Grassing with ' Doobs' Grass (Grassing with 'Doobs' 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 moving including supplying good earth if needed.) In rows 7.5 cm apart in either direction	Sqm	22500.00

22	Construction of a permanent type barricade made of steel components, 1.5 m high from road level, fitted with 3 horizontal rails 200 mm wide and 4 m long on 50 x 50 x 5 mm angle iron vertical support, painted with yellow and white strips, 150 mm in width at an angle of 450 C, complete as per IRC:SP:55-2001	each	150.00
23	Providing and fixing 1.2 meters high GI barbed wire fencing with 1.8 m angle iron posts 40 mm x 40 mm x 6 mm placed every 3 meters center to center founded in M15 grade cement concrete, 0.6 meter below ground level, every 15th post, last but one end post and corner post shall be strutted on both sides and end post on one side only and provided with 9 horizontal lines and 2 diagonals interwoven with horizontal wires, fixed with GI staples, turn buckles etc complete as per clause 807	Running Polyethylene	875.00
24	CARRIAGE OF MATERIALS		
	Brick	Thousand	3803.00
	Local Sand	Cum	7187.00
	Coarse Sand	Cum	154.00
	Stone Chips	Cum	299.82
	Cement	MT	2109.02
	Steel	MT	43.27
21	Development of Cleveland Memorial		
	Earth Work		
1	Surface dressing of the ground including removing vegetation and in-equalities not exceeding 15cm deep and disposal of rubbish, lead up to 50m and lift up to 1.5m	100 Sqm	70.00
2	Supplying and Filling in plinth with local Earth/sand and under floors including, watering, ramming consolidating and dressing complete.	cum	1750.00
3	Grassing with ' Doobs' Grass (Grassing with 'Doobs' 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 moving including supplying good earth if needed.)In rows 7.5 cm apart in either direction	Sqm	7000.00
4	Pathway at entry and along Water Fountain Supplying and Filling in plinth with local sand and under floors including, watering, ramming consolidating and dressing complete.	cum	72.00
5	Paver Block for Pathway Providing and laying factory made chamfered edge Cement Concrete paver blocks of required strength, thickness & size/shape, made by table vibratory method , to attain superior smooth finish using PU or equivalent moulds, laid in required Grey colour & pattern over 50mm thick compacted bed of coarse sand, compacting and proper embedding / laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with Yamuna sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand in footpath, parks, lawns, drive ways or light traffic parking etc. all complete as per (a) 80 mm thick c.c. paver block of M-35 grade with approved colour design and pattern.	Sqm	480.00
6	Water Fountain complete package in all respect (Excavation, RCC round wall, Lighting, Water motor, Cleaning and its drainage pattern etc.) as per Existing Condition and as per direction of E/I	each	200000.00

7	Muroom Pathway Supplying and Filling in plinth with moorum under floors including, watering, ramming consolidating and dressing complete.	cum	23.44
8	Renovation of Old Structure Plastering - 12 mm cement plaster of mix: 1 : 4 Applying one coat of cement primer of approved brand and manufacture on wall surface: Distemper primer	Sqm	1008.00
9	Applying one coat of cement primer of approved brand and manufacture on wall surface: Distemper primer	Sqm	1008.00
10	Distemping with oil bound washable distemper of approved brand and manufacture to give an even shade .Two or more coats on new work	Sqm	1008.00
11	RCC at Entry Providing and laying in position specified grade of reinforced cement concrete excluding the cost of ring, shuttering, finishing and reinforcement-All work up to plinth level 1:1:5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)	cum	27.00
12	Granite at Platform Providing and fixing 18 mm 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, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups,including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels.	Sqm	20.25
13	Cost of Toilet 1 No. (Amount taken from estimate of Toilet)	nos	1.00
14	U-PVC pipes (working pressure 4 kg/cm ²) Rubber (Seal) Ring 110 mm dia.	per Polyethylene	100.00
	(exclude Carriage Cost)Sub Total		
22	ESTIMATE OF TOILET BLOCK (BIG)	-	-
1	Earth work in excavation over areas (exceeding 30 cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead up to 50m and lift up to 1.5m ; disposed earth to be levelled and neatly dressed.-All kinds of soil	Cum	4.55
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth: consolidating each deposited layer by ramming and watering lead.	Cum	2.27
3	Supplying and filling in plinth with local sand and under floors including, watering, ramming consolidating and dressing complete. Below Grade Beam Sand Filling (Up to plinth)	Cum	63.01
4	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level. 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size)	Cum	3.94
5	Brick work with bricks of class designation 100A in foundation and plinth in : Cement mortar 1:4 (1 cement : 4 coarse sand)	Cum	7.00
6	Half brick masonry with bricks of class designation 100A in foundation and plinth in :Cement mortar 1:4 (1 cement : 4 coarse sand)	sqm	100.80

7	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 - 1:1:5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20 mm nominal size) Column, Grade Beam, Tie Beam, Roof Beam, Roof, Chajjas.	Cum	16.51
8	Reinforcement for RCC work including straightening. Cutting, bending, placing in position and binding all complete. Thermo-Mechanically Treated bars TMTC-500-10 mm dia.	kg	2592.07
9	Centering and shuttering including strutting, propping etc. and removal of form for:		
	a) Walls (any thickness) including attached pilasters. Butteresses, plinth and string courses etc. Column	Sqm	63.00
	b) Gread Beam	Sqm	30.80
	c) Tie Beam	Sqm	28.00
	d) Roof Beam	Sqm	30.80
	e) Roof	Sqm	50.88
	f) Chhajja	Sqm	13.50
10	Providing designation 100 A one brick flat soling joints filled with local sand including cost of watering taxes, royalty all complete as per building specification and direction of E/I.	sqm	7.00
11	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622 (Thickness to be specified by the manufacture) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer -in-Charge in skirting, risers of steps and dados over 12 mm thick bed of cement Mortar 1:3 (1cement : 3 coarse Sand) and jointing with grey cement slurry @ 3.3 kg per sqm including pointing in white cement mixed with pigment of matching shade complete.	Sqm	246.40
12	Providing and laying Ceramic glazed floor tiles 300x300 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS: 15622 of approved make in colours such shades except white, Ivory, Grey, Fume Red, Brown, laid on 20mm thick Cement mortar 1:4 (1 cement: 4 coarse Sand) including pointing the joints with white cement and matching pigment etc., complete.	Sqm	61.75
13	Kota stone slabs 25 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement : 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	Sqm	23.40
14	12 mm cement plaster of mix 1:4 (1 cement : 4 coarse sand)	sqm	1008.00
15	6 mm cement plaster to ceiling of mix.1:4 (1 cement : 4 coarse sand)	sqm	65.55
16	Applying one coat of cement primer of approved brand and manufacture on wall surface: Distemper primer	Sqm	1073.55
17	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade .Two or more coats on new work Inner Part	Sqm	536.78
18	Finishing Wall with water proofing cement paint of approved brand and manufacture and of required shade to give an even shade Outer Face New work (three or more coats)	sqm	536.78

19	Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc consisting of following operations :With average thickness of 120mm and minimum thickness at Khurra as 65 mm.	sqm	61.75
20	Providing and fixing ISI marked flush door shutters decorative type core of block board construction with frame of 1st class hard wood and well matched teak ply veneering with vertical grains or cross or cross bands and face veneers on the both faces veneers on the both face of shutters.30mm thick including stainless steel butt hinges with necessary screws	sqm	26.40
21	Providing wood work in frames of doors, windows, clearstory windows and other frames, wrought framed and fixed in position Second Class teak wood	cum	2.64
22	Providing 40 x 5 mm flat iron hold fast 40 cm long including fixing to frame with 10 mm diapolyethylene bots, nuts and wooden plugs and embeddings in cement concrete block 30x10x15 cm 1:3:6 mix (1 cement: 3 coarse sand: 6 graded stone aggregate 20 mm nominal size)	each	60.00
23	Providing and fixing aluminum sliding door bolt anodised (anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour and shade with nuts and screws etc.		
	300 x 16 mm	each	10.00
	250 x 16 mm	each	10.00
24	Providing and fixing aluminum handles anodised (anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour and shade with necessary screws etc. complete :125 mm	each	20.00
25	Providing and fixing aluminum hanging floor door stopper anodized (anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour and shade with necessary screws etc. complete. Twin rubber stopper	each	10.00
26	Providing and fixing aluminum sliding tower bolt anodised (anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour and shade with nuts and screws etc.		
	300 x 10 mm	each	10.00
	150 x 10 mm	each	10.00
27	Providing and fixing glazed shutters for doors, windows and clerestory windows using 10kg/square polyethylene (4mm thick) glass panes including black enamled M.S butt hidge with necessary screws.30 mm thick	sqm	26.40
28	Providing and fixing circular cast iron box for ceiling fan clamp 140 mm internal dia, 73 mm height, 5 mm thick rim bottom and top lids, 1.5 mm thick M.S sheet with its top surface hacked for proper bonding top lid shall be screwed into the cast iron box by means of 3.3 mm dia round headed screws, one of at the corners. Clamps shall be made of 12mm dia M.S. bar bent to shape as per standard drawing.	each	10.00
29	Applying priming coat With ready mixed pink or grey primer of approved brand and manufacture on woodwork (hard and soft wood)	sqm	116..16
30	Painting with synthetic enamel paint of approved brand and manufacture to give an even shed. Two or more coats on new work	sqm	116.16
31	Providing and fixing water closet squatting pan (Indian Type WC pan) with 100mm sand cast iron P or S trap, 10 liter low fixture complete, including cutting and making good the wall and level white PVC flushing cistern, including flush pipe, manually control device(handle lever) confirming to	Nos.	2.00

	IS:7231, with all fittings and floors where ever required. White Vitreous china, Orissa, Pattern WC pan of size 580x440 mm with integral type footrest.		
33	Providing and fixing white vitreous china pedestal type water closet. (European type) with seat and lid, 10 ltr flow level white vitreous china flushing cistern and C P flush bend with fitting and CI brackets, 40mm flush bend, over flow arrangement with special of standards make and mosquitoes proof coupling of approved municipal complete design complete, including painting of fittings and brackets, cutting and making good the walls. W.C. Pan with ISI marked white solid plastic seat. Providing and fixing white vitreous china flat back or wall corner type leaped urinal basin of 430x260x350 mm and 340x410x265 mm size respectively with automatic flushing cistern with standard flush pipe and CPP brass spreaders with brass union and GI claim complete, including painting of fittings and brackets , cutting and making good the wall and floor whenever required.	Nos.	5.00
34	Range of Two Urinal Basin with 5 ltr white PVC automatic flushing cistern.	Nos.	6.00
	Providing and fixing wash basin with CI Bracket, 15mm CP brass pillar taps, 32mm CP brass waste of standard pattern including painting of fittings and brackets, cutting and making good the wall wherever required.		
35	White vitreous China wash basin size 630x450mm with a pair of 15mm CP brass pillar taps	Nos.	6.00
	White vitreous Chaina flat back wash basin size 450x300mm with single 15mm CP brass pillar taps.	Nos.	4.00
36	Providing and fixing Cp brass angle valve for basin mixer and geyser points of approved quality confirming to IS: 8931. A 15mm nominal bore.	Nos.	18.00
37	Providing and fixing CP Brass long body bib cock of approved quality confirming to IS: standards and weighing not less than 690 grams 15 mm Nominal Bore	Nos.	6.00
38	providing and placing on terrace (at all floor levels) polyethylene water storages tank, ISI :12701 marked, with cover and suitable looking arrangement and making necessary holes for inlet , Outlet and over flow pipes but without fittings and the base support for tank.	Litre	1000.00
39	Providing and fixing mirror of superior glass (of approved quality) and of required shapes and size with plastic moulded frame of approved make and said with 6mm thick hard. Oval shape 450 x 350 mm Mirror	Nos.	8.00
40	Septic Tank (2.3 mt x 1.1 mt)	Nos.	2.00
41	Internal plumbing and electrification		0.05
23	Multipurpose Ground : Item of RCC Drain 0.5 x 0.75 M, Chainage 2.75 KM with Grassing & Landscaping		
1	Excavation for Structures (Earth work in excavation of foundation of structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material.)Depth up to 1.5 m	cum	1687.50

2	Open timbering in trenches including strutting and shoring complete (Measurement to be taken of the face area timbered):Depth exceeding 1.5 m but not exceeding 3 m Dewatering and pumping out water in trenches	Sqm	1687.50
3	Pumping out water caused by springs, tidal or river seepage, broken water mains or drains and the like.	KL	3375.00
4	Back filling behind abutment, wing wall and return wall complete as per drawing and Technical specification	cum	843.75
5	Back filling behind abutment, wing wall and return wall complete as per drawing and Technical specification (Below Raft)	cum	1125.00
6	Clearing and Grubbing Road Land (Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 meters including removal and disposal of top organic soil not exceeding 150 mm in thickness.)	Hectare	0.28
7.0	Removal of unserviceable soil and disposal up to 1000 polyethylene’s (Removal of unserviceable soil including excavation, loading and disposal up to 1000 polyethylene’s lead but excluding replacement by suitable soil which shall be paid separately)	Cum	843.75
8.0	Labour for filling anti cement bags with local sand, stitching the bag and placing including supply of sutri etc. all complete job as per direction of Engineer in charge with carriage of local sand and cost of anti-cement bag for different type of work at site.	Per 100 bags	1320.00
9	PCC 1:3:6 in foundation: Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregate 40 mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days.1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size)	Cum	157.50
10	Centering and shuttering including strutting, propping etc. and removal or form work for Foundations, footings, bases of columns etc. for mass concrete	Sqm	825.00
11	Plain/Reinforced cement concrete in sub-structure complete as per drawing and technical specifications RCC grade M30 - with batching plant, transit mixer and concrete pump	Cum	315.00
12	Centering and shuttering including strutting, propping etc. and removal or form work for Foundations, footings, bases of columns etc. for mass concrete	Sqm	1687.50
13	Plain/Reinforced cement concrete in sub-structure complete as per drawing and technical specifications RCC grade M30 - with batching plant, transit mixer and concrete pump	Cum	393.75
14	Centering and shuttering including strutting, propping etc. and removal or form work for Foundations, footings, bases of columns etc. for mass concrete	Sqm	7650.00
15	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications	MT	111.27
16	Constructing brick masonry circular manhole 1.52 m internal dia at bottom and 0.56 m dia at top in cement mortar 1:4 (1 cement : 4 coarse sand) inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement, all complete as per standard design :	each	20.00

17	Constructing brick masonry road gully chamber 110x50x77.5 cm with bricks in cement mortar 1:4 (1 cement : 4 coarse Sand) with precast R.C.C. vertical grating complete as per standard design : (@ 1 per 20 m)	each	15.00
18	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete. (For silt traps for box drain)	kg	200.00
19	Surface dressing of the ground including removing vegetation and in-equalities not exceeding 15cm deep and disposal of rubbish, lead up to 50m and lift up to 1.5m	100 Sqm	664.00
20	Supplying and Filling in plinth with local Earth/sand and under floors including, watering, ramming consolidating and dressing complete.	cum	19920.00
21	Grassing with ' Doobs' Grass (Grassing with 'Doobs' 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 moving including supplying good earth if needed.) In rows 7.5 cm apart in either direction	Sqm	66400.00
22	CARRIAGE OF MATERIALS		
	Brick	Thousand	8151.00
	Local Sand	Cum	21045.00
	Coarse Sand	Cum	393.79
	Stone Chips	Cum	770.96
	Cement	MT	2327.22
	Steel	MT	111.27
	Carriage +Sub Total		
24	Item of Sculpture Court		
1	Earth work in excavation in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m. Including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil	Cum	408.00
2	Supply and filling in plinth with local sand and under floor including watering ,ramming consolidating and dressing complete	Cum	680.00
3	Surface dressing of the ground including removing vegetation and in-equalities not exceeding 15cm deep and disposal of rubbish, lead up to 50m and lift up to 1.5m All kinds of soil	100 SQM	1360.00
4	Clearing jungle including uprooting of Rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 50 m outside the periphery of the area cleared.	100 SQM	1360.00
5	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - all work up to plinth level. 1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size)	Cum	15.54
6	Centering and shuttering including strutting, propping etc. and removal or form work for Foundations, footings, bases, columns	Sqm	1.05

7	Reinforced cement concrete in walls (any thickness) including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. up to floor five level, excluding the cost of centering, shuttering, finishing and reinforcement.1:1.5:3 (1 Cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	Cum	66.40
8	Centering and Shuttering including strutting, propping etc. and removal of form for Foundations, footings, bases of columns etc. For mass concrete.	Sqm	105.40
9	Reinforcement for R.C.C work including straightening, cutting, bending, placing in position and binding all complete. Thermo - Mechanically Treated bars TMTC - 500-10mm dia	Kg	5212.40
10	Steel work welded in built up sections/framed work including cutting hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel, etc. as required. In gratings, frames, guard bar, ladders, railings, brackets. Gates & similar works. In gratings, frames, guard bar, ladders, railings, brackets. Gates & similar works.	Kg	400.00
11	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.).	Kg	2000.00
12	Providing and laying factory made chamfered edge Cement Concrete paver blocks of required strength, thickness & size/shape, made by table vibratory method , to attain superior smooth finish using PU or equivalent moulds, laid in required Grey colour & pattern over 50mm thick compacted bed of coarse sand, compacting and proper embedding / laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with Yamuna sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand in footpath, parks, lawns, drive ways or light traffic parking etc. all complete as per Manufacturer’s specifications & direction of Engineer -in-Charge: (a) 80 mm thick c.c. paver block of M-35 grade with approved colour design and pattern.	Sqm	300.00
13	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 moving including supplying good earth if needed. In rows 5 cm apart in either direction.	100 Sqm	1000.00
25	Item of Dismantling for Boundary Wall		
1	Demolishing brick work including stacking of serviceable material and disposal of unserviceable material within 50 polyethylene’s lead:	Cum	1955.00
2	Demolishing R.C.C. work including stacking of steel bars and disposal of unserviceable material within 50 meters lead:Column,Beam	Cum	529.63
26	Item of BOUNDARY WALL Internal (30 M LENGTH)		

1	Making 25cm (10”) dia bore up to 4 M depth below ground with hand auger of approved quality in ordinary soil (vide classification of soil item-A) true to plumb and without eccentricity in any stage of operation and disposal of the excavated earth up to 50 M lead including all lifts, all complete as per approved design and direction of E/I.	Rmt	35.00
2	Making 63 cm (25”) dia under-ream at required depth with hand auger of approved quality in ordinary soil (vide classification of soil item-A) true to plumb and without eccentricity in any stage of operation and disposal of the excavated earth up to 50M lead including all lifts, all complete as per approved design and direction of E/I.	Each	8.00
3	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 M in width 10 sqm on plan)including dressing of sides and ramming of bottoms lift up to 1.5 m including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50.0m	Cum	1.75
4	Supply and filling in plinth with local sand and under floors including watering, ramming, consolidating and dressing complete	Cum	0.53
5	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering-all work up to plinth level (1:4:8)	Cum	0.53
6	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15 degree, landings, balconies, shelves, chajjas, lintels, bands, plain window sill, stair cases and spiral stair cases up to floor five level excluding the cost of centering, shuttering, finishing and reinforcement with ratio 1:1.5:3 (1 cement:1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)	Cum	4.90
7	Centering and Shuttering including strutting, propping etc. and removal of form for lintel, beams, plinth beam, girders, ressumers and cantilevers.	Sqm	49.96
8	Brick work with fly ash bricks as per IS 12894 (2002) & IS 3495 in foundations and plinth in : Cement mortar 1:6 (1 cement: 6 coarse Sand)	Cum	5.36
9	Providing 12 mm thick cement plaster 1:6 (1cement:6 coarse sand)	Sqm	147.70
10	Reinforcement for RCC work including straighten, cutting, bending, placing in position and binding all complete - Thermo -Mechanically Treated bars (FE-500) 10 mm dia	Kg	441.00
11	Finishing walls with texture exterior paint of required shade New work(two or more coats)	Sqm	147.70
TOTAL COST			
27	Item OF BOUNDARY WALL (30 M Length)		
1	Making 25cm (10”) dia bore up to 1.5 depth below ground with hand auger of approved quality in ordinary soil (vide classification of soil item-A) true to plumb and without eccentricity in any stage of operation and disposal of the excavated earth up to 50 M lead including all lifts, all complete as per approved design and direction of E/I.	cum	35.00
2	Making 63 cm (25”) dia under-ream at required depth with hand auger of approved quality in ordinary soil (vide classification of soil item-A) true to plumb and without eccentricity in any stage of operation and disposal of the excavated earth up to 50M lead including all lifts, all complete as per approved design and direction of E/I.	Each	8.00
3	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 M in width 10 sqm on plan)including dressing of sides and ramming of bottoms	Cum	19.20

	lift up to 1.5 m including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50.0m		
4	Supply and filling in plinth with local sand and under floors including watering, ramming, consolidating and dressing complete	Cum	9.60
5	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - all work up to plinth level.1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size)	Cum	3.00
6	Providing and laying in position reinforced cement concrete of specified grade excluding the cost of centering and shuttering - all work up to plinth level.1:1.5:3 (1 Cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	Cum	12.00
7	Centering and Shuttering including strutting, propping etc. and removal of form for lintel, beams, plinth beam, girders, ressumers and cantilevers.	Sqm	50.00
8	Brick work with fly ash bricks as per IS 12894(2002) & IS 3495 in foundations and plinth in :Cement mortar 1.:4 (1 cement: 4 coarse Sand)	Cum	2.00
9	Providing 20mm thick cement plaster 1:6 (1cement:6 coarse sand)	Sqm	83.50
10	Reinforcement for RCC work including straighting, cutting, bending, placing in position and binding all complete - Thermo -Mechanically Treated bars (FE-500).Thermo-Mechanically Treated bars TMTC-500-10mm dia	Kg	942.00
11	Finishing walls with texture exterior paint of required shade New work(two or more coats)	Sqm	83.50
12	Steel work welded in built up sections/framed work including cutting hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel, etc. as required.	Kg	554.60
13	Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/ recess including cutting the wall and making good the same in case of recessed conduit as required. 20 mm	Polyethylene	600.00
	CARRIAGE OF MATERIALS		
14	Brick	Thousand	988.00
	Local Sand	Cum	9.60
	Coarse Sand	Cum	8.93
	Stone Chips	Cum	13.38
	Cement	MT	13.40
	Steel	MT	1.50

28	SUMMARY OF PROJECT COST FOR ELECTRICAL OF GENERAL LIGHTING OF SANDY'S COMPOUND
Sl. NO.	DESCRIPTION OF WORK AREA
1	Entrance plaza and Parking (ONE NO.)
2	Walkway
3	Cafeteria
4	Memorial renovation
5	Sculpture court
6	Station club renovation
7	Kid's play area
8	High Mast & Solar Light
9	Renovation of existing OAT
10	Power Station
11	TOTAL COST
29	SUMMARY OF PROJECT COST FOR ELECTRICAL OF SPORTS AREA IN SANDY'S COMPOUND
Sl. NO.	DESCRIPTION OF WORK AREA
1	City Gym
2	Basketball Court
3	Cleveland Memorial
4	Tennis Court
5	Power Station
	TOTAL COST

30. Swimming pool with Mechanical

Type of Swimming Pool	:	Over Flow Type
Surface Area for Main Pool Approx	:	1250.0 M2
Depth for Main Pool Approx	:	2.0 M
Volume for Main Pool Approx	:	2500.0 M3
Volume for Balancing Tank	:	125.0 M3
Total Volume for Main Pool + Balancing tank Approx	:	2625.0 M3
Turnover Period	:	5.0 Hrs.
Flow Rate	:	525.0 M ³ /Hr. 5 Working + 1 Standby
Nos. of Pump Provided	:	Standby
Flow of Each Pump Approx	:	105.0 M3/hr.
Filtration Velocity	:	35.0 M ³ /Hr/M
Filter Offered	:	5.0 Nos.
Cross Sectional Area Required for Each Filter	:	3.00 M ²
Suggested Filter Dia	:	2000 mm
Provided Cross Sectional Area per Filter	:	3.140 M ²

Sl. No.	Description	Qty.	Unit
	EQUIPMENT PART		
1(a)	Supply of Bobbin Wound Side Mount Sand Filter manufactured with fiber glass and polyester resin,UV resistance surface,fitted with collector arms and diffuser made from unplasticised PVC and Polypropylene with lid in polyester resin and fibre glass, manual air purge and 6" PVC flanged connection for inlet and outlet, Pressure gauge, water drain/empty drain for filter etc. Complete in all respects.		
	Capacity 105000 ltrs/hr		
	Design @ 35000 ltrs/sqm/hr.		
	Diameter 2000 mm	5	Nos
	Working Pressure 2.5 kg/cm ²		
	Model: GD-301925		
(b)	Valve Battery		

	Supply of Valve Battery Manifold made in PVC with flanges for connecting to filters Consists of set of 5 - butterfly valves for carrying out filtration, back-washing, rinsing and shut down of the filters. Size : 160mm	5	Nos
	Model: GD-301935		
(c)	Coarse & Fine Sand media for filter	2250 0	Kg
2	Supply of Self Priming pumps with plastic body, in built strainer basket, Impeller in PPO, Motor shaft in stainless steel AISI-420, Mechanical seal in SIC/graphite and steatite, Motor housing in aluminum, with motor -2800rpm, F class insulation, protection IP-55. (5W+1S)		
	Capacity 105000 ltrs/hr		
	Head 16 mtr		
	HP 10.0, Three Phase	6	Nos
	Model: GSP-3020-7.5		
3	Swimming Pool U.V.Sterlizer		
	Supply of U.V. Sterilizer with S.S. Housing outside, U.V. Lamp, glass tube and all other accessories with cleaning arrangement, supports, inlet outlet connection with bypass arrangement including S.S. Cabinet with glass door of suitable size to house the U.V. Sterilizer complete with required accessories.		
	Flow rate = 100000 Ltr/Hr		
	working Pressure = 2.5 Kg/Sqm	6	Nos
	Model: UV-3010240W		
4	Dosing Pump	3	Nos
	Supply of Chemical dosing Pump for Chlorination with 200 liter.Sintext an and Accessories		
	Capacity0-20 liters/hr.		

	Head35 M		
	Model: DP-301004		
5	Stainless Steel Drain		
	Supply of Stainless steel drain grating plate made out of 316 quality S plates with suitable supporting frame and of following sizes and having holes of required size for drain out chamber.		
	Size 500X500 MM	2	Nos
	Model: DG-SS-316-04		
6	Inlet Nozzle	100	Nos
	Supply of Flow adjustable ABS inlet nozzles UV treated with S.S. screws to fit in the 2" PVC pipes		
	Model: IN-301201		
7	Suction Inlets (Vacuum points)	6	Nos
	Supply of ABS white plastic suction port / Vacuum nozzle with 2 inch solvent cement connection		
	Model: VC-301301		
8	Ladder		
	Supply of Stainless Steel 316 ladders , width: 500mm wide, handrails dia 43mm stainless steel , non-slip steps provided with anchoring Socket.		
a	6 Step Standard Ladder with Anti-skid Steps	4	Nos
	Model: LD-ST-316-6		
9	Underwater LED Lights		
	Supply of 24Volt 54 W under water stainless steel 316L LED light fixture (IP 68) including all	20	Nos

	required accessories & making connection as required. With 2 Mtr power cord.		
	Model: UWL-301615		
10	Power Supply	2	Nos
	Supply of Transformer for LED Lights 24V DC, 30 amp		.
	Model: PS24-301605		
11	Deck Box	20	Nos
	Supply of ABS white plastic deck box.		.
	Model: JB-301101		
12	Cleaning Accessories		
a	Extensive telescopic Handle, (2.4 - 4.8) meters long & 1.1mm thick for cleaning attachment in anodized aluminum.	1	Nos
	Model: GD-TP224A		.
b	Transparent Blue Polyethylene hose 40mm (1-1/2") dia 30 m length.	1	Nos
	Model: GD-H3815PE		.
c	Surface net skimmer made in poly propylene	1	Nos
	Model: GD-LS301		.
d	Deep bag net Skimmer made in poly propylene	1	Nos
	Model: GD-LS201		.
e	Curved polybristle wall brush 450 mm	1	Nos
	Model: GD-BR401		.

f	Test kit for PH and chlorine.	1	Nos .
	Model: GD-TK907		
g	Hi-grade Stainless Steel Algae Brush - 10"	1	Nos .
	Model: GD-BR404		
h	Vacuum head with SS-body, 1 1/2" connection size 900 mm long	1	Nos .
	Model: GD-SS-VH01		
i	Deluxe large Vacuum head with 4 wheels, alu-body, plastic handle, 1 1/2" connection size 445x130 mm	1	Nos .
j	Polybristle wall brush 10" (26cm)	1	Nos .
	Model: GD-BR402		
k	Chemical TCCA 90 (50 kg.) & ALUM (30 kg.)	1	Set
	Model: GD-301921		
l	nylon rope	100	Mtr
13	Competition Equipment		
i	Starting Blocks	10	Nos .
	Supply of Fixed Diving Starting Block 700mm height		
	Make: GADS/DGM		
ii	Float Lines	11	Nos .
	Supply of Roma model lane separator 50mt complete		
	Make: GADS/DGM		
iii	Anchoring Sockets	22	Nos .

	Supply of Stainless steel separator anchor.		
	Make: GADS/DGM		
iv	Float Line Roller	2	Nos .
	Supply of Separator collection wheel 1.8m		
	Make: GADS/DGM		
v	Backstroke turn indicators	2	Nos .
	Supply of backstroke indicator for pools up to 25m wide (posts are complete with cords with floats)/ pair		
	Make: GADS/DGM		
vi	Anchoring Sockets	4	Nos .
	Supply of Stainless steel separator anchor.		
	Make: GADS/DGM		
vii	False start post indicator	1	Nos .
	Supply of false indicator for pools up to 25m wide (posts are complete with cords with floats)/ pair		
	Make: GADS/DGM		
viii	Anchoring Sockets	2	Nos .
	Supply, of Stainless steel separator anchor.		
	Make: GADS/DGM		
ix	Supply of Lifeguard chair with wheels made in S/S AISI 304, dia 43mm tube. Treads, platform, chair including parasol holder made of polypropylene fiber -glass. Complete with wheeled base	2	Set
	Make: GADS/DGM		

14	Life Saving Equipment		
i	J Hook / Safety Hook	2	Nos
	Make: GADS/DGM		.
ii	Life jacket	6	Nos
	Make: GADS/DGM		.
iii	Oxygen Cylinder with trolley	1	Nos
	Make: GADS/DGM		.
iv	Single fold Stretcher	1	Nos
	Make: GADS/DGM		.
v	First Aid Kit	1	Nos
	Make: GADS/DGM		.
vi	Artificial Respirator / Ambu bag	1	Nos
	Make: GADS/DGM		.
vii	Life buoy ring	6	Nos
	Make: GADS/DGM		.
	Total Price in Rupees		
	PLUMBING & ELECTRICAL PART		
15	uPVC pipes		
	Providing and fixing uPVC pressure Pipes (10kg/cm ²) with plain socket suitable for solvent cement jointing conforming to IS:4985/2000 & fittings conforming to IS 7834/87. Cut to required lengths including all		

	necessary fittings and specials such as bends, tees, unions, reducers, flanges and plugs etc. The pipes & fittings shall be tested to a pressure of 10 Kg/Sq.cm.		
i)	32 mm dia	30	RM
ii)	50 mm dia	RO	RM
iii)	63 mm dia	78	RM
iv)	75 mm dia	6	RM
v)	90 mm dia	132	RM
vi)	110 mm dia	6	RM
vii)	160 mm dia	312	RM
viii)	200 mm dia	270	RM
vii)	250 mm dia	282	RM
viii)	315 mm dia	12	RM
16	Ball Valve		
	Providing and fixing Pvc lever operated ball valve of full flow with setting and gland of superior quality having minimum working pressure of 10 kg/cm ² with union, flanges where as required.		
i)	32mm dia	10	Nos .
ii)	40mm dia	RO	Nos .
iii)	50mm dia	RO	Nos .
iv)	63mm dia	RO	Nos .
v)	75mm dia	1	Nos .
vi)	90mm dia	RO	Nos .
17	Butterfly Valve		

	Providing and fixing uPVC butterfly valves. Tested to a pressure not less than 10 Kg/Sq.cm. Including rubber gasket, flanges, nuts, bolts, washers complete as required.		
i)	90 mm dia	12	Nos .
ii)	110 mm dia	1	Nos .
iii)	160 mm dia	7	Nos .
iv)	200 mm dia	10	Nos .
iv)	250 mm dia	3	Nos .
18	Non return valve		
a	Providing and fixing Pvc ball Type Or Spring Loaded Non Return valve with setting and gland of superior quality having minimum working pressure of 10 kg/cm ² with union, flanges where as required.		
i)	50mm dia	RO	Nos .
ii)	63mm dia	RO	Nos .
iii)	75mm dia	RO	Nos .
b	Providing and fixing of uPVC Wafer Check Valve non-return valves (PN 10) complete with matching flanges, rubber insertion, nuts, bolts and washer etc. of following sizes.		
i)	75mm dia	RO	Nos .
ii)	90 mm dia	RO	Nos .
iii)	110 mm dia	RO	Nos .

iv)	160 mm dia	6	Nos .
v)	200 mm dia	2	Nos .
vi)	250 mm dia	3	Nos .
19	Puddles Sleeve		
	Supply & fixing of following sizes of heavy duty PVC puddle flanges (uPVC pipe(10 kg/cm ²) fixed with flanges, length 400 to 600 mm length) on the wall of plant room, balancing tank and the water body walls & Slab (As required). To be laid in between the steel reinforcement before RCC. Does not include any civil work.		
i)	32 mm dia	2	Nos .
ii)	50 mm dia	RO	Nos .
iii)	63 mm dia	RO	Nos .
iv)	75 mm dia	1	Nos .
v)	90 mm dia	RO	Nos .
vi)	110 mm dia	1	Nos .
vii)	160 mm dia	1	Nos .
viii)	200 mm dia	2	Nos .
ix)	250 mm dia	7	Nos .
20	Supply, laying, testing and commissioning of SS 304 Grade 400MM DIA Pump Suction Header with 2 Nos 250mm Dia Flange Connection For Balancing Tank to Pump Suction Header, 1 No. 90 mm Dia Flange Connection For Vacuum Pipe & 1 No. 250 mm Dia Flange	1	Nos .

	Connection For Pool Drain Pipe & 6 No. 200mm Dia Flange Connection For Pump Suction.		
21	Supply, laying, testing and commissioning of SS 304 Grade 300MM DIA Pump Delivery Header with 2 Nos 200mm Dia Flange Connection For Filter Inlet Header, 1 No. 160 mm Dia Flange Connection For Drain Pipe & 6 No. 160mm Dia Flange Connection For Pump Delivery.	1	Nos
22	Supply, laying, testing and commissioning of following size PVC insulated sheathed copper conductor 1100 V grade unarmored cable with required size of sleeves complete as required.		
i	4 x 16 sq.mm	RO	RM
ii	4 x 6 sq.mm	100	RM
iii	4 x 4 sq.mm	RO	RM
vi	4 x 2.5 sq.mm	RO	RM
v	4 x 1.5 sq.mm	RO	RM
vi	3 x 6 sq.mm	RO	RM
vii	3 x 4 sq.mm	RO	RM
viii	3 x 2.5 sq.mm	RO	RM
ix	3 x 1.5 sq.mm	RO	RM
x	2 x 6 sq.mm	200	RM
xi	2 x 4 sq.mm	RO	RM
xii	2 x 2.5 sq.mm	100	RM
xiii	2 x 1.5 sq.mm	100	RM
23	Supply, laying, testing and commissioning of following size PVC insulated sheathed copper conductor flexible multi stand wire complete as required.		
i	1.5 sqmm	RO	RM

ii	2.5 sqmm	RO	RM
iii	4 sqmm	RO	RM
24	Supply, laying, testing and commissioning of following size PVC electrical conduit complete as required.		
i	20 m	RO	RM
ii	25 m	720	RM
25	G.I. earthing wire 8 gauge from all motor and M.C.C panel to be connected in as approved manner to the general earthing system complete.		
i	8 Gauge GI Wire	100	RM
26	Providing and fixing M.S. Slotted cable tray supported from ceiling at intervals of 60 cms on both ends including cable clips with nuts and bolts welding of support rods with ceiling inserts or through dash fasteners cutting and making good complete.		
i	300mm wide	30	RM
ii	150mm wide	50	RM
27	Providing and fixing M.S. support with nuts and bolts welding of support rods with ceiling inserts or wall through dash fasteners cutting and making good complete	300	kg
28	ELECTRICAL CONTROL PANEL		

	Supply, installation, testing and commissioning of following swimming pool panel 415 V, 1 / 3 Phase and 50 Hz power distribution system. The panel shall be free standing floor mounting sheet metal enclosed dust and vermin proof conforming to IP-54, compartmentalized design fabricated out of 16 SWG sheet Steel, painting earthing numbering, and danger plate as per specifications and drawings. Flush front with aluminum bus bars, separate earth bus bars to be provided throughout the length of the panel the incoming and outgoing feeder breakers, fuses, indicating lamps etc shall be accommodated in a modular multiplier arrangement. The panel shall be powder coated through 9 tank process. Adequate size cable alley shall be provided for cable termination. The outgoing feeders inside shall be connected through bus bars/ flexible cable links.	1	Set
	Bus bars shall be provided with heat shrinkable sleeves and shall be colour coded. The panels shall be suitable for cable entry from top to bottom. The panels shall be fabricated after the approval of drawings.		
	Starter shall be provided with MCB/MCCB. Suitable for the specified Kw of motor AC 3 power contractors. Single phasing preventer, on-off indication Lamps, start stop push buttons. Auto manual selector switch, ammeter with suitable auxiliary contact remote control, interlocking etc starter shall be Type 2 coordinated. "C" curve MCB's 10 KA shall be used wherever required.		
a	Incoming:		

	One (1) no. 200A TP 25 KA MCCB with thermomagnetic based overload and short circuit release.		
	Digital flush mounted 0-200A ammeter with 3 way and OFF selection switch with 3 Nos. 200/5 Amp CT.		
	1 set (3 Nos.) of phase indication lamps		
	200A 25 KA TPN Aluminum bus bar. It shall be insulated with heat shrinkable sleeves and shall be color coded.		
b	Outgoing:		
	Recirculation pump		
	Six (6) Nos. DOL starter complete with separate single phasing protection feature. ON/OFF indicating lamps, relay, contractors, start/stop push button, auto/manual selector switch, sufficient no’s of potential free spare contacts, etc for suitable HP		
	3 Nos. 6AMP DP MCB of suitable rating with correct thermal range suitable for chemical dosing		
	3 Nos. Toggle switch for LED Pool Lights		
	6 Nos. 6AMP DP MCB of suitable rating with correct thermal range suitable for UV		
	6 Nos. Toggle switch for LED Pool Lights		
	1 Nos.16AMP DP MCB of suitable rating with correct thermal range suitable for Underwater Lights		
	1 Nos. Toggle switch for LED Pool Lights		
28	Designing, Installation, testing & commissioning of Equipment’s	1	Job

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