

SABARMATI RIVER FRONT DEVELOPMENT



Sabarmati River Front Development Corporation Limited

2nd Floor, Riverfront House,
B/h H. K. Arts College,
Between Gandhi Bridge and Nehru Bridge,
Pujya Pramukh Swami Marg (River Front Road –
West)
Ahmedabad - 380 009

BID DOCUMENT

WORK OF DEVELOPMENT OF GARDEN NEAR SHANKAR BHUVAN ON EAST BANK, INCLUDING CIVIL, PLUMBING, ELECTRICAL & ELV WORKS, DEVELOPMENT OF RESIDUAL SPACE ELEMENTS ON BOTH EAST AND WEST BANK AND CONSTRUCTION OF WALL CLIMBING FACILITY NEAR SARDAR BRIDGE ON WEST BANK FOR SABARMATI RIVERFRONT DEVELOPMENT CORPORATION LIMITED

Contract Package: SRFDCL

VOLUME- 03

~~V) Form of Bid~~

VI) Bill of Quantities



~~SECTION V~~
~~FORM OF BID~~



Contractor's Bid

Description of the Works: _____

BID for

To _____ : The Chairman,
Sabarmati River Front Development Corporation Limited
Address _____ : 1st Floor, Dr. Ramanbhai Patel House, West Zone Office, Ahmedabad
Municipal Corporation, Usmanpura, Ahmedabad 13

Gentlemen,

Having examined the bidding documents including addendum, visited the site of works, we offer to execute the Works described above in accordance with the Conditions of Contract, Specifications, Drawings and Bill of Quantities accompanying this Bid at the quoted percentage above/below* the contract price mention in Bid BOQ at arrived contract Price of _____ [in figures] (_____) [in letters]¹.

The advance Payment required is: Rupees _____.

This Bid and your written acceptance of it shall constitute a binding contract between us. We understand that you are not bound to accept the lowest or any Bid you receive.

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

Commissions or gratuities, if any, paid or to be paid by us to agents relating to this Bid, and to contract execution if we are awarded the contract, are listed below:

<u>Name and address of agent</u>	<u>Amount</u>	<u>Purpose of Commission or gratuity</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

(if none, state "none")

We hereby confirm that this Bid complies with the Bid Validity and Bid Security required by the Bidding documents.

*: **Strike out which is not applicable.**

We attached herewith proof of submission of income tax returns along with profit & loss statement attached with tax returns.

Yours faithfully,

Authorised Signature _____:

Name & Title of Signatory _____:

Name of Bidder _____:

Address _____:

¹ To be filled in by the Bidder, together with his particulars and date of submission at the bottom of the Form of Bid.



**SECTION VI
BILL OF QUANTITIES**



MEASUREMENT PREAMBLE

1. All quantities in the Bill of Quantities are estimated quantities. For all payment purposes measurements, as prescribed in the contract document shall be taken and quantities shall be computed from such measurements.
2. The inclusions and exclusions from quoted rates are specified in the details of each item of work in the specifications and the Bill of Quantities. In case there is no specific mention of a particular detail, the mode of measurements as prescribed in MORTH specifications or other standard specification for such an item shall be followed.
3. In the event of contradiction between the MORTH specifications or other standard specification referred to above and this Contract document, the provisions of this Contract document shall prevail.

**SECTION VI
BILL OF QUANTITIES**

WORK OF DEVELOPMENT OF GARDEN NEAR SHANKAR BHUVAN ON EAST BANK, INCLUDING CIVIL, PLUMBING, ELECTRICAL & ELV WORKS, DEVELOPMENT OF RESIDUAL SPACE ELEMENTS ON BOTH EAST AND WEST BANK AND CONSTRUCTION OF WALL CLIMBING FACILITY NEAR SARDAR BRIDGE ON WEST BANK FOR SABARMATI RIVERFRONT DEVELOPMENT CORPORATION LIMITED

SUMMARY SHEET

Section	Amount (Rs.) As per SOR
Sub Section : 6.1 Shankarbhuvan Garden	
Sub Section : 6.1 a Civil Works	4,77,93,030
Sub Section : 6.1 b Electrical Works	44,45,369
Sub Section : 6.1 c Irrigation and Horticulture Works	79,51,201
Sub Section : 6.1 d Plumbing Works	14,07,289
Sub Section : 6.2 Residual Elements	86,66,479
Sub Section : 6.3 Wall Climbing	58,63,373
Grand Total	7,61,26,742

BILL OF QUANTITIES

SUB SECTION

6.1 a CIVIL WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
1	EARTH WORK & CARRIAGE OF MATERIAL				
	Note: 1) The method of excavation shall be approved by the Engineer in charge before execution. 2) Excavation shall be carried out very carefully without damaging existing structures and surrounding if any. 3) If required, the contractor shall provide stabilization by any means to protect the foundation of the existing structure and building without any extra cost. 4) Rate shall include dewatering work (pumping out and removing slush) while execution in underwater condition if required.				
1	Excavation for all kinds of soil Earthwork in excavation for all kind of soil by any means including getting out the excavated soil, sorting and stacking of useful material, dressing of the sides, ramming of bottom, and disposal of surplus excavated earth for all lead within the site area at non objectionable place and lift up to 1.5 mt depth , including dewatering and working in or under water and /or liquid mud, including pumping out water/slush as required etc complete as directed by engineer-in-charge. In case of excavation for pipe, cable, any services trenches, making base for road work, pavement works walkway, etc, proper slop and camber by any means shall be maintain and dressing of the sides shall be made as per requirement and as directed by engineer-in-charge.	Cum	1878	149.00	2,79,822
2	Excavation for all kinds of soil Earthwork in excavation for all kind of soil by any means including getting out the excavated soil, sorting and stacking of useful material, dressing of the sides, ramming of the bottom, and disposal of surplus excavated earth for all lead within the site area at non objectionable place and lift from 1.5 mt to 3.0 mt depth , including dewatering and working in or under water and /or liquid mud, including pumping out water/slush as required etc complete as directed by engineer-in-charge. In case of excavation for pipe, cable, any services trenches, making base for road work, pavement works walkway, etc, proper slop and camber by any means shall be maintain and dressing of the sides shall be made as per requirement and as directed by engineer-in-charge.	Cum	29	162.00	4,698
3	Excavation for all kinds of soil Earthwork in excavation for all kind of soil by any means including getting out the excavated soil, sorting and stacking of useful material, dressing of the sides, ramming of the bottom, and disposal of surplus excavated earth for all lead within the site area at non objectionable place and lift from 3.0 mt to 5.0 mt depth , including dewatering and working in or under water and /or liquid mud, including pumping out water/slush as required etc complete as directed by engineer-in-charge. In case of excavation for pipe, cable, any services trenches, making base for road work, pavement works walkway, etc, proper slop and camber by any means shall be maintain and dressing of the sides shall be made as per requirement and as directed by engineer-in-charge.	Cum	20	174.00	3,480
4	Filling available excavated earth (excluding rock) Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations, plot filling, etc. in layers not exceeding 20cm in depth, with optimum moisture content to give at least 95% of the maximum dry density (proctor density) including watering, ramming and compacting by any means, including transportation, loading, unloading, screening, passes etc. all complete for all lead (from anywhere from the campus area) and lift and as directed by the Engineer-in-charge.	Cum	1300	192.00	2,49,600
5	Filling in foundation and plinth with good earth/ murrum Excavating, supplying, and filling of good earth/ murrum brought from outside (including royalty) by any means; in trenches, plinths, sides of foundations, plot filling, etc. in layers not exceeding 20cm in depth, with optimum moisture content to achieve at least 95% of the maximum dry density (proctor density) including watering, ramming and compacting using any means for compaction, including transportation, loading, unloading, screening, passes etc. all complete for all lead and all lift and as directed by the Engineer-in-charge.	Cum	11921	289.00	34,45,169
6	Bitumen Cutting Labour charge of cutting in bituminous pavement before fixing kerb stone. Cutting to be done with heavy duty tandem cutting machine consist of diamond blade. Minimum cutting depth shall be 20 cm from the finished level. Cutting shall be perfectly in line. The width and depth of the removal of asphalt towards kerb stone shall be as directed by engineer in charge. Bitumen shall be carefully removed so that the cutting edge towards the road shall not be disturbed. Bitumen and other debris shall be disposed for all lead and lift at non objectional place and as per the direction of the engineer in charge. Surroundings shall be cleaned up to the satisfaction of engineer in charge.	Sqm	202	290.00	58,580
7	Clearing and grubbing of top soil, cutting , removing and disposing of all materials such as trees, bushes, shrubs, stumps, roots, grass, weeds, top organic soil not exceeding 100 mm in thickness, rubbish etc. and disposal of cleared materials. stacking of useful material with all lead and lift as per MORT&H specification.	Hectare	1	39,345.00	39,345
	Total Carried Over to Summary				40,80,694

BILL OF QUANTITIES

SUB SECTION

6.1 a CIVIL WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
2	PLAIN & REINFORCEMENT CEMENT CONCRETE WORK				
	<p>Note -</p> <p>1) All types of shuttering shall be designed by the contractor and submitted to the Engineer in charge along with design calculations (if required) and approved by the Engineer in charge. However, the Stability and compatibility of shuttering shall be the responsibility of the contractor. Shuttering shall be executed as per the approved shop drawing. No extra payment shall be made for the above.</p> <p>2) Rate shall be inclusive of dewatering work (pumping out and removing slush) while execution in underwater conditions. The contractor shall not claim for dewatering if required.</p> <p>3) Rate shall be inclusive of providing grooves, drip moulds, pockets, cut-outs, etc., and co-ordination of insert sleeves, insert plate (cost of insert sleeves/ plate shall be paid separately), encasing if any wherever required while casting for all level all height.</p> <p>4) If required concrete batching and mixing plant of minimum 60 cum/hr capacity shall be set up by contractor.</p> <p>5) Mould release agent of approved make shall be used at every repetition on formwork material.</p> <p>6) Shuttering shall be compatible with self-compacting concrete (SCC) work, wherever required.</p> <p>7) Shuttering shall be compatible with heavy/bulky RCC elements, wherever required.</p>				
8	<p>Concrete (PCC) of grade - M15 Providing and laying in position Controlled cement concrete /Ready mix concrete/ batch mix concrete of cement concrete (PCC) of grade - M15 cement concrete work, using cement content as per approved design mix (Min cementitious level as per latest IS 456 shall be maintained) manufactured in fully automatic batching plant and transported to the site of work in transit mixer for all lead having a continuous agitated mixer, for reinforced cement concrete work including pumping from transit mixer to site of laying; cost of admixtures in recommended proportions as per IS: 9103 to accelerate, retard the setting of concrete, improve workability without impairing strength and durability; finishing, compacting, vibrating, curing, dewatering (if required), etc. including the cost of form work and removal of formwork, dewatering (if required), etc. complete for all level, all height/ depth and for all lead and lift and as directed by the Engineer.</p>	Cum	485	4,290.00	20,80,650
9	<p>Providing and laying in position Fair Finish Controlled cement concrete /Ready mix concrete/ batch mix concrete of specified grade for reinforced cement concrete work, using cement content as per approved design mix (Min cementitious level as per latest IS 456 shall be maintained) manufactured in fully automatic batching plant and transported to the site of work in transit mixer for all lead having a continuous agitated mixer, for reinforced cement concrete work including pumping from transit mixer to site of laying; Pouring by tower crane or boom placer or any other means where required, cost of admixtures in recommended proportions as per IS: 9103 to accelerate, retard the setting of concrete, improve workability without impairing strength and durability; finishing, compacting, vibrating, curing, dewatering (if required), the Formwork/shuttering/scaffolding etc for any RCC Element and removal of formwork etc, excluding the cost of the reinforcement, etc complete for all elements, all floors, all level, any heights/ depths, any lead and lift as directed by Engineer In charge.</p>				
	<p>Rate shall be inclusive of shuttering and centering/ formwork (shuttering plate made of welded smooth finish plate of min 3mm thick MS plate, thickness of formwork shall be such that no bulging or deformation of concrete element occurs) for fair finish concrete with or without pattern, lift charges, scaffolding, staging, propping etc and tie rod assembly of PVC cone and coil on both side of the concrete walls, filling the same with non shrink grout or polymer mortar and excluding cost of steel reinforcement. Full height shuttering with single pour system shall be followed wherever required. Contractor shall prepare shuttering drawing as per the shuttering pattern given by architect. All concrete work shall be with finish (without any honey comb) up to the satisfaction of the engineer incharge. Contractor shall use mould release agent of approved make before use of shuttering material every time. The Contractor shall get prior approval for the reuse of the shuttering material for repetition from the Engineer-in-charge</p> <p>A sample of each element shall be prepared with and without shuttering pattern at location as per instruction of Architect and SRFDCL Engineer in charge for review and approval before mass execution. In case of Exposed finish concrete work, Extra rate for exposed finish shuttering shall be paid in relevant tender item, However, Finishing of exposed concrete shall be up to the satisfaction of the architect and the SRFDCL Engineer in charge.</p>				
9.1	Concrete of M 25 grade	Cum	322	6,865.00	22,10,530
9.2	Concrete of M 30 grade	Cum	525	7,057.00	37,04,925

BILL OF QUANTITIES

SUB SECTION

6.1 a CIVIL WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
10	Providing and laying in position Exposed Finish controlled cement concrete manufactured in fully automatic batch mixed plant of specified/ required capacity (batch mix plant shall be installed by contractor on site) for reinforced cement concrete work as per design mix of specified grade using graded black trap stone aggregates of maximum 20mm nominal (down graded) size including fine aggregates conforming to latest IS 383 with minimum cement content (without fly ash) for durability (followed as per IS-456 and technical specification) shall be followed as per approved design mix for all elements of any shape and size, at all places and heights/ depths including transporting by transit mixer for any lead having continuous agitated mixer, laying of concrete to site by any means like pumping, tower crane or boom placer etc., vibrating, finishing and curing etc. and including admixtures in recommended proportions as per IS 9103 to accelerate, retard setting of concrete, to improve workability without impairing strength and durability as per direction of Engineer-in-charge. Rate shall be inclusive of providing grooves, drip moulds, ghis, pockets, cutouts etc. and labour for insert sleeves if any wherever required while casting.				
	Rate shall be inclusive of shuttering and centering/ formwork (shuttering plate made of welded smooth finish plate of min 3mm thick MS plate, thickness of formwork shall be such that no bulging or deformation of concrete element occurs) for exposed finish concrete with pattern, lift charges, scaffolding, staging, propping etc and tie rod assembly of PVC cone and coil on both side of the concrete walls, filling the same with non shrink grout or polymer mortar and excluding cost of steel reinforcement. Full height shuttering with single pour system shall be followed. Contractor to prepare shuttering drawing as per the shuttering pattern given by architect. All concrete work shall be exposed finish (without any honey comb). Contractor shall use mould release agent of approved make before use of shuttering material every time. A sample of each element shall be prepared with and without shuttering pattern at location as per instruction of Architect and SRFDCL Engineer in charge for review and approval before mass execution. Contractor may use 18mm laminated ply at some specific place, after taking prior written permission from Architect in charge and SRFDCL before using the ply.				
10.1	Concrete of M 25 grade	Cum	10	7,255.00	72,550
10.2	Concrete of M 30 grade	Cum	38	7,447.00	2,82,986
11	Providing and fixing Thermo-Mechanically Treated bars (Fe 550 D) Reinforcement for R.C.C. work including transporting to the work site, straightening, cutting, bending, cranking, fabricating to required shape, placing/ lowering in position by suitable method, and tying / binding the system (with GI wire) all complete for all leads and lifts, all levels, all floors, all heights/ depth, etc complete and as directed by the Engineer in charge. Measurement will be made on the length basis and converted into weight by using standard coefficient (rolling margin's and wastage shall not be paid). No separate payment shall be made for laps, chairs, pins, lifting hooks, spacers, and binding wire.	Kg.	109587	94.00	1,03,01,178
12	Providing and fixing premoulded compressible, high performance closed cell, bitumen free expansion joint filler board (Cap cell HD 100 of Supreme or equivalent) of 25mm thickness in black color, conforming to MORTH specification (clause 1015), having minimum density 95 Kg/Cum, non Staining with less than 0.08% water absorption & compression recovery of 93% minimum as per specifications including cutting to required size and shape, placing in position, maintaining in position while formwork and concreting at all levels/ all floors/ all heights, etc. complete, as per drawings/ specification and as directed by Engineer in Charge.	Sqm	10	1,083.00	10,830
13	Polysulphide sealant Providing and filling the expansion joints, with polysulphide sealant with the application of primer including scraping/removing the expansion filler materials from the joints, cleaning, repairing the edges with epoxy mortar of approved color and make, placing backup material (polyethylene backer rod), fixing of abro masking tapes on the edges to protect the adjoining surface, at all levels/ all floors/all height etc. complete as directed by the Engineer-in-charge. The Polysulphide sealant shall conform to BS-4254:1983 and ASTM C920, and be resistant to water, diluted alkalis, cement grout, water-dispersed detergents, etc. The Contractor shall furnish a performance guarantee of 5 years against leakage, and debonding from the edges. Size of expansion joint upto 25 mm width x 12 mm depth	Rmt	10	273.00	2,730
	PVC pipe sleeves Providing in position rigid PVC pipe sleeves of 6Kg/cm ² and length as per design for following diameters for services wherever pipes pass through walls/ slabs/ beam before concreting for all floors/ all levels/ all heights. All pipes shall be accurately cut to the required sizes, laid as per drawing, kept in the position while laying reinforcement and shuttering, sleeves shall not get displaced while concreting, and burrs removed before laying. Open ends of the pipe shall be closed as the pipe is installed to avoid clogging while concreting. The rate shall be inclusive of the removal of sleeves before waterproofing or grouting. The location of the sleeve shall be approved by the Engineer-in-charge.				
14	PVC sleeve - Beyond 110mm and Up to 200 mm Diameter	Rmt	10	949.00	9,490

BILL OF QUANTITIES

SUB SECTION

6.1 a CIVIL WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
	Providing and fixing 110 mm dia PVC pipe having capacity of 6 Kg/cm ² with ISI mark of required length as shown in the structure drawing wherever pipes pass through walls as weep hole before concreting for all level/ all depth/ height. All pipes shall be accurately cut to the required sizes, laid as per drawing, kept in the position while laying reinforcement and shuttering, sleeves shall not get displaced while concreting, and burrs removed before laying. Open ends of the pipe shall be closed as the pipe is installed to avoid clogging while concreting. At one side of pipe, SS 304 mesh shall be placed to protect filled soil. Rate shall be inclusive of pipe and SS 304 mesh. Item shall not be used for diaphragm wall construction. Actual installed length of pipe shall be measured for payment.				
15	PVC sleeve - Up to 110 mm Diameter	Rmt	10	389.00	3,890
	Total Carried Over to Summary				1,86,79,759
3	WATERPROOFING WORK				
	<p>Note:-</p> <p>1) All waterproofing treatment/work shall be executed through an approved water-proofing agency of an approved manufacturer. The Contractor shall submit technical data sheets for each product that will be used for execution.</p> <p>2) The Contractor shall submit a methodology statement with all relevant details in illustrative sketch form and get them approved by the Engineer-in-charge.</p> <p>3) A written guarantee/bond on non-judicial stamp paper (tri-party) shall be submitted by the main Contractor and provided by the principal manufacturer and applicator, who has carried out the work. The guarantee/bond shall be for a period of five years from the certified date of completion of the overall work. The guarantee shall be for a composite warranty against leakages/seepage/dampness and for the satisfactory performance of the entire waterproofing system.</p> <p>4) Waterproofing shall be executed under the supervision of the technical team of the manufacturer. Waterproofing shall be tested and approved by the Engineer-in-charge before proceeding with subsequent activities.</p> <p>5) The Contractor shall repair the concrete elements by injection grouting of suitable non-shrink grout and other suitable methods in case of defective concreting of retaining walls, water tanks, slabs, beams, etc., for which no extra costs shall be payable.</p> <p>6) Rate shall be inclusive of surface preparation, repairing, injection grouting, saw cutting of construction joints and filling with patch repair mortar, making polymer mortar/Polymer CC fillets at horizontal as well as vertical corners, etc complete. The rate shall be inclusive of testing of elements and the system before and after waterproofing application.</p> <p>7) Rate shall be inclusive of dewatering work (pumping out and removing slush) while execution in under water conditions.</p> <p>8) The latest technical system/product shall be adopted at the time of execution.</p>				
16	<p>Providing and applying Coal tar extended epoxy resin coating of approved make in two coats having 250 micron DFT on RCC surface as per following steps and as per manufacturer's specifications with coverage recommended 3.0 – 4.0 Sqm/ litre for two coat application to achieve approx. 250 +/- 10 micron DFT:</p> <p>1) Proper surface preparation, remove dirt, rust, oil, grease, cement slurry from wall surface. Thoroughly clean the concrete surface with wire brush/ compressed air etc</p> <p>2) Carry out cementitious injection grouting at construction joints and at leakage points using plasticised expansive grout admixture,</p> <p>3) Treatment of construction joints using polymer modified mortar,</p> <p>4) Filling pipe cutouts using non shrink cementitious grout,</p> <p>5) Mixing base and hardener component of coal tar extended epoxy resin coating, apply first coat using suitable brush or roller, allow the first coat to dry</p> <p>6) Application of second coat in perpendicular direction to first coat as per manufacturer's specification.</p> <p>Coal tar epoxy shall be having 100% solid contents by weight, specific gravity - min 1.24, Water absorption <0.01 % (ASTM D 570), Bond Strength: min 1 N/mm² (BS 1881 Pt 207), Water Permeability: nil at @ 2 bars pressure over 3 months.</p> <p>Actual applied area of coal tar epoxy shall be measured for payment.</p>	Sqm	539	146.00	78,694
17	Providing and placing in position 225 mm wide x 12mm thick PVC water stops (made of 100% virgin polymer material and ROHS non - hazardous standard product) conforming to IS:12200 for construction/ expansion joints between two RCC members as shown in the structure drawings and fixed to the reinforcement with GI binding wire before pouring concrete etc. complete and as directed by engineer in charge. Rate shall also include fixing arrangement in stop end pipe/ plate. Item shall not be executed for diaphragm wall work.	Rmt.	50	513.00	25,650

BILL OF QUANTITIES

SUB SECTION

6.1 a CIVIL WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
18	<p>Waterproofing</p> <p>Providing and applying Two-part acrylic polymer modified cementitious elastomeric waterproof coating of minimum 1.5mm thickness DFT having minimum 1 N/mm² tensile strength, and shall cover 2.2 kg/sqm per mm of thickness. The coating shall have an elongation of a minimum of 80% when tested as per ASTM D 412 resisting 5 bars hydrostatic pressure as per DIN 1048 and having crack bridging ability of up to 2mm. Thorough surface preparation to be carried out by mechanical means to level and plain the surface of walls and floors of the toilet areas. All cracks and crevices shall be filled and made good to receive waterproof coating treatment The coating shall cover all the floor area of the wet area and shall also be applied over the vertical walls for a minimum of 300mm height above the floor in two or more coats to achieve the required thickness. The periphery of the floor shall be additionally reinforced with an extra third coat of the coating with a fiber band (glass fiber mesh of minimum 80 gsm) sandwiched between the first and the second coat, which shall also be done around protrusions (pipes) meant for plumbing purposes. The last coat (second/ third coat) when wet, shall be sprinkled with clean and washed sand, to facilitate the floor screed or plaster.</p>	Sqm	29	439.00	12,731
	<p>Pipes being fixed for plumbing shall be fixed in holes that are mechanically core cut, more than the diameter of the pipes. Pipes shall be fixed by grouting the annular space with non-shrink cementitious grout of proprietary make. Before grouting, the pipes shall be wrapped with a two-way self-adhesive tape at least 50mm wide and then grouted to fill in the grout, ensuring total watertight plumbing fittings. The Contractor shall submit a methodology statement with all details in illustrative sketch form and get approval from the Engineer-in-charge. Application shall be carried out by the approved applicator of the manufacturer and as per the manufacturer's recommendation The actual applied area on the floor & wall shall be measured for payment. Cost includes all material (for surface preparation, coating, and hole packing), labour, T&P, and wastage involved as mentioned in the item.</p>				
19	<p>Integral crystalline slurry - RCC structures</p> <p>Providing and applying integral crystalline slurry, hydrophilic in nature, for waterproofing treatment (surface coating) of approved make to any type of concrete structure etc. prepared by mixing in the ratio of 5: 2 (5 parts integral crystalline slurry: 2 parts water) for vertical surfaces and 3: 1 (3 parts integral crystalline slurry: 1 part water) for horizontal surfaces with required consumption as per manufacturer's specification and applying the same from negative (internal) side. The material shall meet the requirements as specified in ACI - 212-3R-2010 i.e. by reducing the permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on the negative side.</p> <p>The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm.</p> <p>Rate shall be inclusive of surface preparation, grouting of any type of damage, cracks, joints etc using crystalline mortar, construction joint tie hole treatment, and honey comb concrete treatment as per manufacturer's specifications etc complete for all level, all height.</p> <p>Work shall be carried out by approved applicator and as per method of waterproofing accepted by manufacturer and directions of the Engineer-in-charge.</p>	Sqm	348	392.00	1,36,416
20	<p>Waterproofing for RCC Raft Foundation - HDPE-based waterproofing composite sheet membrane</p> <p>Providing & laying under the RCC Raft Foundation, a HDPE based waterproofing white composite sheet membrane, at minimum 1.2mm thickness (bare sheet thickness), when tested as per ASTM D 3767, consisting of high-density polyethylene film/sandblasted surface, a pressure sensitive adhesive and a trafficable weather resistant coating. The membrane shall form an integral, adhesive, and permanent bond to poured concrete to prevent water migration at the interface of the membrane and structural concrete and shall include with overlaps to be treated with hot air welding technology/dual adhesive tape lap seam technology to complete the side laps and secure adjacent sheets. HDPE Membrane shall be applied with the following steps and as per the manufacturer's recommendation:</p> <ol style="list-style-type: none"> 1) Cleaning of PCC surface to remove dust, loose particles, etc with compressed air or any other suitable technique depending on site conditions, grinding any sharp edges, etc 2) HDPE membrane laid over PCC and continued over the side of the raft, the vertical portion of the retaining wall and over the kicker joint, and terminated over the kicker joint, into a saw cut groove provided at an angle of 45 degrees to the vertical, to tuck in the HDPE membrane and sealed off with a PU sealant. 	Sqm	36	791.00	28,476
21	<p>Integral crystalline admixture - RCC structures</p> <p>Providing and mixing integral crystalline admixture for waterproofing treatment to RCC structures like basement rafts, retaining walls, sewage & water treatment plant, tunnels/subway, etc. at the time of transporting of concrete into the drum of the ready-mix truck/ at RMC plant as per direction of the Engineer-in-charge, using integral crystalline admixture @ 0.80% (minimum to the weight of cement content per cubic meter of concrete) or maximum 2.4 Kg/Cum or as recommended by the manufacturer's specifications. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e. by reducing permeability of concrete by more than 90%, compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure. The crystalline admixture shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out as per specifications and the directions of the Engineer-in-charge.</p>	Kg	477	320.00	1,52,640
22	<p>Food-grade epoxy coating for the water tank</p> <p>Providing and applying food-grade epoxy coating treatment to the water tank on the inside surface after proper surface preparation. Food grade epoxy shall be applied over the plastered surface with one coat of epoxy or PU primer and two coats of Solvent-free food-grade epoxy resin coating @ 200 microns DFT in 2 coats, etc. complete, including all tools and tackles as per the manufacturer's specifications. Food grade epoxy coating shall have adhesive bond strength - > 1 Mpa, Pot life of 30 min @ 30 °C and cured film shall be non-toxic and shall meet the requirements of IS: 9833:1981. The Contractor shall carry out the application of polymer modified vatta/fillet at the floor-wall junctions prepared using SBR and filling pipe cut-outs using Non-shrink cementitious grout etc. The Contractor shall furnish 10 years warranty for the coating. The application shall be carried out by an approved applicator of the manufacturer and as per recommendations of the manufacturer. The actual applied area of epoxy coating shall be measured for payment. The rate shall be inclusive of surface preparation, fillet making, pipe cut-out filling, and epoxy coating with primer application, but excluding plaster and waterproof coating & treatment if any under the plaster which shall be payable under relevant agreement items.</p>	Sqm	348	316.00	1,09,968
Total Carried Over to Summary					5,44,575

BILL OF QUANTITIES

SUB SECTION

6.1 a CIVIL WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
4	MASONRY WORK				
23	Providing and laying Brick masonry works using common burnt clay bricks confirming to IS 1077-1992 having Compressive strength not less than 35 kg/Sq.cm in cement mortar 1:5 (1 cement: 5 coarse sand) in any shape, any thickness including finishing, curing, scaffolding racking / flush jointing, etc. complete for all level, all depth/height, as per drawing and as directed by Engineer in Charge.	Cum	123	4,388.00	5,39,724
Total Carried Over to Summary					5,39,724
5	PLASTER WORK				
24	12-15 mm thick plaster Providing and laying 12 to 15 mm thick single coat mala cement plaster on masonry work/ concrete work in cement mortar (1 Cement : 3 coarse sand) finished with trowel including making grooves, forming pattas, scaffolding, curing, hacking properly RCC surface etc. complete for all level, all shape, all heights and as directed by Engineer in Charge.	Sqm	1427	176.00	2,51,152
25	12 to 15 mm thick water proof Plaster Providing and laying 12 to 15 mm thick water proof single coat smooth / wired finish cement plaster on sides of masonry work / block work / RCC work, in any shape, in CM 1:3 (1 cement : 3 fine sand) and water proofing compound of approved make in proportions recommended by the manufacturer, finishing the surface wired finish/ smooth finish with a floating coat of neat cement slurry for all floors, all height including hacking to RCC surface, scaffolding, curing etc. complete as directed by engineer-in-charge.	Sqm	534	184.00	98,256
Total Carried Over to Summary					3,49,408
6	FLOORING WORK				
	Kota stones - for flooring - fixing with adhesive Providing and laying machine-cut Kota stones of specified thickness, specified finish, any shade (uniform), any size, and any shape for flooring in required design and patterns as per the drawings, laid over existing bedding (cement mortar bedding/concrete screed), fixed with minimum 6mm thick stone fixing adhesive as per IS-15477 of an approved make and joined (paper joint) with grey/white cement slurry mixed with a pigment to match the shade of the slabs, including finishing, rubbing, curing, polishing, cleaning, protection, scaffolding, wastage, etc. all complete, for all levels, all floors, all heights, as directed by the Engineer-in-Charge. The rate shall be inclusive of Kota stones (as per the approved sample), adhesive for fixing, cement slurry, matching pigment, all labour, etc complete, but excluding cement mortar bedding/concrete screed bedding which shall be payable under the relevant Tender items. The Contractor shall arrange loose samples for approval from the Engineer-in-Charge before mass execution. The actual laid area of the Kota stones shall be measured for payment without considering any wastage.				
26	25 mm thick any type of polish and textured finish Kota stones i.e. polish, river washed, leather finish, linen finish, lappato finish or similar finish	Sqm	29	1,339.00	38,831
	Kota Stones - for skirtings - fixing with adhesive Providing and laying machine-cut polished Kota stones of specified thickness, specified finish, of any shade (uniform), any size, and any shape for skirtings (flush with plaster or adjoining surface) as per the drawings, laid in any pattern, fixed on any type of leveled surface with minimum 6mm thick stone fixing adhesive as per IS-15477 of an approved make and joined (paper joint) with grey cement slurry mixed with a pigment to match the shade of the slab, including providing 6 to 10mm wide grooves between the skirting and the plaster, finishing, rubbing, curing, polishing, cleaning, protection, scaffolding, wastage, etc. all complete, for all levels, all floors, all heights, and as directed by the Engineer-in-Charge. The length of stone for skirting shall be as per design to match the joints and pattern. The shade of the skirting must match with flooring if not specified elsewhere. The rate shall be inclusive of Kota stones (as per the approved sample), adhesive for fixing, cement slurry, matching pigment, all labour, etc complete. The Contractor shall arrange loose samples for approval from the Engineer-in-Charge before mass execution. The actual laid area of the Kota stones shall be measured for payment without considering any wastage.				
27	8 - 10 mm thick any type of polish and textured finish Kota stones i.e. polish, river washed, leather finish, linen finish, lappato finish, or similar finish	Sqm	3	914.00	2,742
28	China Mosaic flooring Providing & laying china mosaic flooring for plain and curved surfaces, comprising of 20 to 25 mm size broken white/colour pieces of ceramic/glazed tiles laid over 12 to 15mm thick cement mortar, 1:6 (1 cement: 4 coarse sand) bedding including applying cement slurry at the rate of 2.75 kg per sqm on plain or sloped surfaces with joints not exceeding 5 mm, including filling the gaps with white cement mixture & mixing with synthetic polyester fiber, triangular in shape having specific gravity of 1.34 to 1.40, cross-section size ranging from 10 to 40 micron & length up to 6mm, mixing fiber @ 125 grams per 50kg of cement in cement mortar, including providing and mixing waterproofing material in mortar @ 1 kg per 50 kg of cement, all complete as per the direction of the Engineer-in-charge. The flooring shall be tampered with a wooden rammer not exceeding 2 Kg in weight to bring the mortar up to the surface, including rounding of the junctions and extending them up to 150 mm. along the parapet wall. The rate shall include bands if a different colour is used, any pattern or design as per drawing and direction, making vata/ fillet, curing, cleaning with water and oxalic acid, etc. complete. Only the Plan area shall be measured for payment.	Sqm	15	938.00	14,070

BILL OF QUANTITIES

SUB SECTION

6.1 a CIVIL WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
29	Additional Floor bedding with concrete screed : Cement concrete pavement/ flooring/ for additional floor screed with M10 grade, including spreading as per gradient, levelling, finishing and curing complete as directed by Engineer in charge. Actual laid volume for floor bedding shall be measured for payment without considering any wastage.	Cum	2	3,005.00	6,010
					61,653
7	PAINT WORK				
	Note:- 1) All adhesives, sealants & paint shall be water based, with low VOC with acceptable VOC content as per Green Building Norms requirements and lead free. 2) Paint shall be applied after thoroughly brushing the surfaces, free from mortar dropping and other foreign matter, preparing the surface even and sand papered smooth etc, after applying every coat of putty and primer complete. 3) Contractor shall furnish warranty paper, wherever applicable. 4) If necessary more coats shall be applied till the surface presents a uniform appearance without any extra cost. 5) Paint shall be applied with any means (i.e. brush, roller, spray etc) 6) Contractor shall prepare sample of minimum three shades as suggested by engineer in charge for approval. 7) The rate shall be applicable for all floor, all level, all height by any means of scaffolding.				
30	Acrylic emulsion paint with primer - Exterior grade Providing and applying 100% Acrylic Smooth exterior paint with exterior primer of Two or more coats of paint including required number of priming coat of exterior primer as per manufacturer's specification of approved make and shade, having VOC (Volatile Organic Compound) content less than 50 grams/ litre of required shade over any surface etc complete for all floors all heights all levels. Exterior paint and primer shall have minimum 5 years warranty.	Sqm	534	112.00	59,808
31	Stain-repellent transparent coating - For exposed concrete work Providing and applying (solvent/ water based), low VOC, breathable and biodegradable, water, oil, and stain-repellent transparent fluorocarbon-based coating with anti-graffiti properties (suitable product according to natural stone, exposed concrete work) of approved make having fluoro carbon-based nanotechnology at all heights & leads and wherever instructed by Engineer-In-Charge. The treatment shall be in two coats wet-on-wet or as recommended by the approved manufacturer including preparation of surfaces by cleaning, curing, protecting, scaffolding, etc complete. The rate includes the cost of all materials, their application by specialized applicators by spray coating with an airless sprayer, cleaning the substrate of all laitance, construction dust, contaminants, scaffolding, labour, etc., all complete and at all levels, leads and heights as per particular specification & directions of Engineer-in-Charge. Guarantee Bond in the prescribed proforma shall be executed by the contractor for the satisfactory performance of the application for 5 years. The look and feel of the natural stone surface, and exposed concrete shall not be affected by coating.	Sqm	75	171.00	12,825
	Total Carried Over to Summary				72,633
8	METAL WORK				
	Note - 1. Contractor shall prepare shop drawing base on concept design/ drawing for any type of fabrication work and get approved. Contractor shall prepare mock-up/ prototype (as suggested) as per approved shop drawing for approval. Work shall be carried out as per approved shop drawing, approved mock-up/ prototype and as suggested by Engineer in charge. 2. Rate shall be for all floor, all level all height. 3. The rate shall include cost of all types of fasteners (ETA approved) to be used for fixing. 4. Structural stability shall be responsibility of contractor for all kind of metal work. 5. All elements shall be factory fabricated and finished, only final finishing to be made on site with all precautions. 6. Contractor shall coordinate all services work (cut-outs and provisions) in metal work. All cut-out and services provisions shall be finished at factory/ work shop. 7. contractor shall provide PVC/ nylon separator, where two different metals connect to avoid galvanic reactions.				

BILL OF QUANTITIES

SUB SECTION

6.1 a CIVIL WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
32	<p>Structural steel work - Fabrication works - with paint Providing, fabricating, assembling, hoisting, erecting and fixing in position structural steel work at all heights/ all levels/ all shapes & sizes with all leads & lifts using any type of MS section like rolled steel sections, hollow sections, plates, chequered plates, bar, sheet, rod, threaded bolt, railing etc. all confirming to latest relevant IS codes for the metal elements i.e. window grill, transom bar, bright bar in wooden door - window frame, railings, gates, grills, bracings, foundation plate & bolt, support at truss system, truss, purlin, rafter, cleat, platforms, brackets, fencing pole, platform, trench cover, flag fixing sleeve pole, garbage box, signage pole, service elements, Jali, clamp, logo, metal dustbin as per design intent etc. including straightening, cutting, bending, profile cutting, embossing, bolting and welding, eatching (if required) the members all as per structural drawings and as per detailed specifications (for materials & workmanship) including profile cutting, smooth grinding, machining of edges/ faces, necessary welding (electric arc welding) for required weld lengths and sizes, machine drilling of holes for joining/ anchoring/bolting, necessary arrangements of templates to keep the foundation bolts in position dry sanding, degreasing (wet cleaning) & preparation of rust-free surface manually or mechanically, metal putty to make the surface even and smooth, necessary scaffolding/ staging, anchor fasteners, extra for bending elements for fixing etc complete. Incase of Metal dustbin, openable MS Shutter shall be with invisible self-closing hinge of required capacity and locking arrangement inside the shutter as per design intent. Contractor shall prepare mock-up of any element wherever required as directed by the Engineer-in-charge.</p>	Kg.	7453	158.00	11,77,574
	<p>Contractor shop/ fabrication prepare shop drawing and get approved. The fabrication work shall start only after approval of the fabrication drawings. Fabrication shall be in a perfect Architectural workmanship manner and as provided in Section V & VI of IS 800 & IS 7215. Contractor shall responsible against stability, safety etc all complete The rate shall include for applying (on all surfaces of MS member) two or more coats PU paint (DFT min 40 micron per coat) of approved make and shade over two coat (DFT min 50 micron per coat) of anti corrosive epoxy base primer for PU paint, as per manufacturer's specification, anchor fastener etc all complete.</p>				
33	<p>Extra charges for providing hot dip galvanizing work conforming to IS 4759/2629/2633 with a zinc coating of 610 GSM thickness on any type of MS sections for various elements like Dustbins, Railing, Handrail, gate, grill, platform, trench cover, flag fixing sleeve pole, garbage box, signage pole, Street furniture and similar works etc. made for all locations, heights, and levels as per the drawings and as instructed by the Engineer-in-Charge. The rate includes surface preparation by shot blasting or acid washing prior to hot dip galvanizing, as well as all necessary labour, tools, and machinery (sample to be approved). The weight of the steel sections before galvanization shall be measured for payment without considering any wastage. A sample and mock-up shall be prepared for approval by the Engineer-in-Charge before mass execution.</p>	Kg.	7453	58.00	4,32,274
34	<p>Extra for providing and making CNC cutting on any type of metal surface of any type, any size, any shape etc as per design and drawing. Contractor shall provide shop drawing based on design for approval. Work shall be carried out as per approved shop drawing. For payment purpose, out to out dimension of Metal elements before CNC cutting shall be consider for payment.</p>	Sqm	50	938.00	46,900
Total Carried Over to Summary					16,56,748
9	EXTERNAL DEVELOPMENT WORK				
	<p>Note - 1) Stones shall be free from cracks, lines, stains, white spots of efflorescence and even in shade for all kind of stone work. 2) Stones shall be selected and sorted for uniform colour, figure and thickness and approved by Engineer in charge prior to procurement. 3) Stone shall be from same lot and/ or source (stone quarry) for same kind of work and as approved by Engineer in charge. 4) Contractor shall apply Stone Impregnation primer/ sealer coat on back side and all edges (after cutting and finishing of the stone as per size) of stones of approved make. Stone Impregnation primer/ sealer coat shall be of water based with pH value 7 to 10 in minimum two coat as per manufacturer's specification and as directed by Engineer in charge. No extra shall be paid for the same. 5) Contractor shall prepare and submit shop drawing for all kind of stone work with sub base/ framing work/ fixing arrangement/ joinery with all required fasteners and get approval from Engineer in charge. 6) Mock up/ sample shall be prepared as per approved shop drawing and get approved by Engineer in charge before execution of work. 7) All adhesives and sealants shall be with low VOC and lead free with acceptable VOC content as per Green Building requirements. 8) Stone work shall be carried out for all floor, all level, all height, all places including loading, unloading, stacking, transporting, hoisting, erecting by any means (mechanical or manual).</p>				
	<p>9) All type of stones shall be cut to size with help of with water jet cutting/ laser cut/ CNC machine according to the design and shape for best workmanship as per shop drawing. 10) Granite shall be mirror polished/ flame finished/ sand blasted/ river wash finish or other as per specified. 11) All type of stone/ stone elements shall be factory cut and factory finished. Finish on any stone shall be as per satisfaction of Engineer in charge. If required, final finish/ touch-up shall be executed at site as per direction of Engineer in charge. 12) Structural stability of solid stone work shall be responsibility of contractor. 13) Contractor shall make necessary provision for any services cut-out/ other required provision, co-ordinate with all services work and making good etc complete. 14) All visible surfaces of stone shall be same finished.</p>				

BILL OF QUANTITIES

SUB SECTION

6.1 a CIVIL WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
35	Sub grade preparation and consolidation Preparation, consolidation and compacting of sub grade with power road roller of 8 to 12 tonne capacity after excavating earth to an required depth, dressing to camber, consolidating and compacting with road roller or by any other means as directed by the engineer incharge including making good the undulations etc. and re-rolling the sub grade and disposal of surplus earth with all lead and lift.	Sqm	1950	22.00	42,900
36	Providing and laying of Dry Lean Cement Concrete (DLC) of M15 grade below concrete pavement, cycle track, footpath, hard scape or any similar element/ for sublayers as per design requirement and compacting the same with 8 to 10 Tone vibratory roller as per the specifications and as per drawing and as directed by the Engineer. Rate shall include cost of formwork if any.	Cum	50	3,532.00	1,76,600
37	GSB Construction of granular sub-base (GSB) by providing close graded Crusher run Material conforming to required grade with required size of aggregate (respective as per grade) having CBR Value as per respective grade specifications/crusher run, mixing in a mechanical mix/mix in place method plant at OMC, carriage of mixed material by tipper to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per MoRTH clause 401 and as directed by Engineer in charge.	Cum	843	1,742.00	14,68,506
38	WMM Providing, laying, spreading and compacting required graded stone aggregate to wet mix macadam (WMM) as per specification including premixing the material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density, complete as per specifications and directions of Engineer-in-charge. Aggregate shall be in compliance of MORTH.	Cum	90	1,098.00	98,820
39	Primer Coat Providing and applying primer coat with cationic bitumen emulsion SS1 grade conforming to ASTM GRADE on prepared surface of wet mix macadam including clearing of GSB/Wet mix macadam surface with air compressor to remove all loose material other foreign material. The primer shall be sprayed uniformly at the rate of 0.70-1.0 kg/sqm. It shall be applied by a self-propelled or towed bitumen pressure sprayer, equipped for spraying the material uniformly at a specified rate. No dilution or heating at site of SS1 bitumen emulsion shall be permitted.	Sqm	594	24.00	14,256
40	DBM Dense Graded Bituminous Macadam Providing, Carting and laying of dense bituminous macadam with batch type HMP producing an output of 80 to 120 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder VG-40 grade @ min 4.5% by weight of total mix, transporting the hot mix to work site, laying with a self-propelled paving machine equipped with an electronic sensing device to the required grade, level and alignment, rolling with 8-10 tonne static weight or vibratory roller or with a pneumatic tyre roller of 12 to 15 tonne weight to achieve the desired compaction as per approved design mix for As per Morth 5th Revision specification clause No. 505 complete in all respects.	Cum	54	8,577.00	4,63,158
41	Tack Coat Providing & applying Tack coat with VG-40 Grade bitumen using bitumen pressure distributor at the rate of 0.20-0.30 kg/sqm on the existing bituminous surface cleaned with Air Compressor etc complete.	Sqm	1188	13.00	15,444
42	Bituminous Concrete Providing, Carting and laying of bituminous concrete with batch type hot mix plant producing an output of 80 to 120 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder VG-40 @ min. 5.4 % of mix, transporting the hot mix to work site, laying with a self-propelled paving machine equipped with an electronic sensing device to the required grade, level and alignment, rolling with 8-10 tonne static weight or vibratory roller or with a pneumatic tyre roller of 12 to 15 tonne weight to achieve the desired compaction as per approved design mix. for As per Morth 5th Revision specification clause No. 507 complete in all respects.	Cum	24	9,775.00	2,34,600
43	Providing and Laying Micro surfacing as per MoRTH Specification (Section-514) & SP 81:200, Type-III grading of Specification, Polymer modified cationic bitumen emulsion, Ordinary Portland Cement, Chemical Additives and Water.	Sqm	1188	202.00	2,39,976

BILL OF QUANTITIES

SUB SECTION

6.1 a CIVIL WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
44	<p>CC Pavement - M 25 Providing and laying cement concrete pavement of mix M-25 with ready mixed concrete from batching plant. The ready mixed concrete shall be laid and finished with vacuum dewatering process and Power floater treatment in roads, pavements, platform, floors etc well compacted, mechanically vibrated with screed vibrator, finished to required levels, floated with neat cement and power trowelled to get desired smooth finish/ broom finish as per design, over a levelling course, including casted in panel, MS channel or box shuttering, curing etc as directed by Engineer. The size of panel should be as per drawing as directed by Engineer. The Contraction joints to be formed at every less than 3m distance by grooving with mechanical saw within 48 hrs. Groove/ sawed joints/ longitudinal joints shall be made of 6mm width and 40 mm depth min (1/3 rd depth of the pavement) as shown in the drawing. LDPE sheet (min 125 gsm) shall be laid below pavement. The rate shall be inclusive of labour, making the grooves, filing grooves with approved sealant and backer rod, provision of expansion joint, LDPE sheet and machinery cost etc complete and as directed by Engineer in charge. Reinforcement if required shall be paid in relevant tender item. Mock up for concrete pavement work (for brooming pattern and joints as per drawing) shall be prepared by contractor and got approved from architects in all respect prior to mass execution works. Architect reserves right to reject part or all work of sub standard or not in confirmation to sample approved as per mock up.</p>	Cum	50	4,902.00	2,45,100
45	<p>CC Pavement - M 30 Providing and laying cement concrete pavement of mix M-30 with ready mixed concrete from batching plant. The ready mixed concrete shall be laid and finished with vacuum dewatering process and Power floater treatment in roads, pavements, platform, floors etc well compacted, mechanically vibrated with screed vibrator, finished to required levels, floated with neat cement and power trowelled to get desired smooth finish/ broom finish as per design, over a levelling course, including casted in panel, MS channel or box shuttering, curing etc as directed by Engineer. The Contraction joints to be formed at every 5m distance by grooving with mechanical saw within 48 hrs. Groove/ sawed joints/ longitudinal joints shall be made of 6mm width and 40 mm depth min (1/3 rd depth of the pavement) as shown in the drawing. LDPE sheet (min 125 gsm) shall be laid below pavement. The rate shall be inclusive of labour, making the grooves, filing grooves with approved sealant and backer rod, provision of expansion joint, LDPE sheet and machinery cost etc complete and as directed by Engineer in charge. Reinforcement if required shall be paid in relevant tender item. Mock up for concrete pavement work (for brooming pattern and joints as per drawing) shall be prepared by contractor and got approved from architects in all respect prior to mass execution works. Architect reserves right to reject part or all work of sub standard or not in confirmation to sample approved as per mock up.</p>	Cum	55	5,080.00	2,79,400
46	<p>CC Pavement - M 40 Providing and laying cement concrete pavement/ Pavement Quality Concrete (PQC) of mix M-40 with ready mixed concrete from batching plant. The ready mixed concrete shall be laid and finished with vacuum dewatering process and Power floater treatment in roads, pavements, platform, floors etc well compacted, mechanically vibrated with screed vibrator, finished to required levels, floated with neat cement and power trowelled to get desired smooth finish/ broom finish as per design, over a levelling course, including casted in panel, MS channel or box shuttering, curing, as per Specifications and in conformity with the lines, grades and cross sections shown on the drawings etc as directed by Engineer. The size of panel should be as per drawing as directed by Engineer. The Contraction joints to be formed at location as per drawing by grooving with mechanical saw within 48 hrs. Groove/ sawed joints/ longitudinal joints shall be made of approximate 6mm width and approximate 40 mm depth min (1/3 rd depth of the pavement) or joint/groove shall be as per shown in the drawing. LDPE sheet (min 125 gsm) shall be laid below pavement if required as per design intent. The rate shall be inclusive of labour, making the grooves, filing grooves with approved sealant and backer rod, provision of expansion joint, construction joint, longitudinal joints, LDPE sheet and machinery cost etc complete and as directed by Engineer in charge. Dowel bar, Tie bar & other Reinforcement bars if required as per drawing, shall be paid in relevant tender item. Mock up for concrete pavement work (for brooming pattern and joints as per drawing) shall be prepared by contractor and got approved from architects in all respect prior to mass execution works. Architect reserves right to reject part or all work of sub standard or not in confirmation to sample approved as per mock up.</p>	Cum	381	6,308.00	24,03,348
47	<p>Kota Stone - For Flooring - fixing with cement mortar Providing and laying machine-cut 40 mm thick any type of Polished/ Textured (i.e. river wash finish, leather finish, linen finish, canvas finish etc) finish Kota stone of specified thickness, specified finish, any shade (uniform), any size, and any shape for flooring in required design and patterns as per the drawings, laid over upto bedding 20 mm thick cement mortar 1:6 (1 cement: 6 coarse sand) with cement mortar of 1:2 (1 cement: 2 sand) applied to the sides of the stones, with the groove or without groove and jointed with grey/white cement slurry mixed and filling of grooves with cement mortar with pigment to match the shade of the slabs, including finishing, rubbing, curing, polishing, cleaning, protection, scaffolding, wastage, etc. all complete for all levels, all floor, all height, as specified and as directed by the Engineer-in-Charge. The rate shall be inclusive of Kota stone (as per the approved sample), fixed with cement mortar bedding, cement slurry, matching pigment, all labour, etc complete but excluding filling with epoxy grout and additional cement mortar bedding/ concrete screed bedding (if required as per drawing) which shall be payable under the relevant item. The contractor shall arrange loose Samples for approval from the Engineer-in-Charge before mass execution. The actual laid area of the Kota stone shall be measured for payment without considering any wastage.</p>	Sqm	470	1,532.00	7,20,040

BILL OF QUANTITIES

SUB SECTION

6.1 a CIVIL WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
	<p>Kota stones - for treads/copping/seating - fixing with adhesive Providing and laying machine-cut Kota stones in a single piece of specified thickness, specified finish, of any shade (uniform), any size, and any shape for treads of steps, coping and seating, sill and jamb etc as per the drawings. Kota stone slabs to have pencil corners and polished at the exposed edges in even and uniform thickness and laid over existing cement mortar bedding, and fixed with minimum 6-10mm thick stone fixing adhesive as per IS-15477, of an approved make, and joined (paper joint) with grey/white cement slurry mixed with a pigment to match the shade of the slabs, including finishing, rubbing, curing, polishing, cleaning, protection, scaffolding, wastage, etc. all complete, for all levels, all floors, all heights, and as directed by the Engineer-in-Charge. The joint between the treads and risers shall be finished as per the drawing. Kotastone shall be used in single possible length/as per drawing for coping / seating on bench. The rate shall be inclusive of Kota stones (as per the approved sample), adhesive for fixing, cement slurry, matching pigment, all labour, etc, complete, but excluding cement mortar/screed bedding, which shall be payable under the relevant Tender items. The Contractor shall arrange loose samples for approval from the Engineer-in-Charge before mass execution. The actual laid area of the Kota stones shall be measured for payment without considering any wastage.</p>	Sqm			
48	40 mm thick any type of polish and textured finish Kota stones i.e. polish, river washed, leather finish, linen finish, lappato finish or similar finish	Sqm	38	2,207.00	83,866
49	<p>Kota Stone - For risers of steps, dado etc. or similar - fixing with cement mortar Providing and laying machine-cut Kota stone 25 mm thick any type of Polished/ Textured (i.e. river wash finish, leather finish, linen finish, canvas finish etc) finish Kota stone in a single piece of any shade (uniform), any size, and any shape in the risers of steps, dado or similar etc. as per the drawings. Kota stone slab having pencil corner and same polished at the exposed edge in even and uniform thickness and laid in any pattern fixed on any type of leveled surface with approximate 12 mm thick (average) cement mortar 1:3 (1 cement : 3 coarse sand)/suitable adhesive as per manufacturer specification, and jointed (paper joint) with grey/ white cement slurry mixed with pigment to match the shade of the slabs, including finishing, rubbing, curing, polishing, cleaning, protection, scaffolding, wastage, etc. all complete for all levels, all floor, all height, and as directed by the Engineer-in-Charge. The joint between the tread and riser shall be finished as per the drawing. The rate shall be inclusive of Kota stone (as per the approved sample), cement mortar for fixing/ adhesive, cement slurry, matching pigment, all labour, etc complete. The contractor shall arrange loose Samples for approval from the Engineer-in-Charge before mass execution. The actual laid area of the Kota stone shall be measured for payment without considering any wastage.</p>	Sqm	20	1,286.00	25,720
50	<p>Kota Stone - For risers of steps, dado etc. or similar - fixing with cement mortar Providing and laying machine-cut Kota stone 55 to 65 mm thick any type of Polished/ Textured (i.e. river wash finish, leather finish, linen finish, canvas finish etc) finish Kota stone in a single piece of any shade (uniform), any size, and any shape in the risers of steps, dado, planter sides, or similar etc. as per the drawings. Kota stone slab having pencil corner and same polished at the exposed edge in even and uniform thickness and laid in any pattern fixed on any type of leveled surface with approximate 12 mm thick (average) cement mortar 1:3 (1 cement : 3 coarse sand)/suitable adhesive as per manufacturer specification, and jointed (paper joint) with grey/ white cement slurry mixed with pigment to match the shade of the slabs, including finishing, rubbing, curing, polishing, cleaning, protection, scaffolding, wastage, etc. all complete for all levels, all floor, all height, and as directed by the Engineer-in-Charge. The joint between the tread and riser shall be finished as per the drawing. The rate shall be inclusive of Kota stone (as per the approved sample), cement mortar for fixing/adhesive, cement slurry, matching pigment, all labour, etc complete. The contractor shall arrange loose Samples for approval from the Engineer-in-Charge before mass execution. The actual laid area of the Kota stone shall be measured for payment without considering any wastage.</p>	Sqm	20	1,834.00	36,680
51	<p>Additional Floor bedding with Cement mortar : Providing and laying cement mortar 1:6 (1 cement : 6 coarse sand) for additional thickness below flooring item required for gradient and as per drawing and as directed by engineer in charge including spreading as per gradient, levelling, finishing, curing etc complete as directed by Engineer in charge. Actual laid volume for floor bedding shall be measured for payment without considering any wastage.</p>	Cum	125	3,800.00	4,75,000
52	<p>Precast Cement Concrete Paver Block - 60mm thick, M-35 Grade Providing and laying factory-made chamfered edge shot blasted/sand blasted finished, non-interlocking type, square/ rectangle shape paver blocks of approved make, any sizes, any shade, any pattern, any color having 60 mm thickness and minimum M-35 grade, machine made, factory finished for footpath, parking areas, service lanes and other similar areas as mentioned in the drawing Including providing and laying 50 to 80 mm thick average bedding layer of coarse sand below paver block as per required grading and specification. The laid paver block shall be mechanically compacted. The work of the paving blocks shall be executed in line and level. The paver block shall be cut by mechanical means only, if required. Paver blocks shall be compacted and shall be re-laid if necessary. The actual laid area shall be measured for payment without any wastage. The Sample and mock-up shall be approved before execution. damaged block shall not be used in laying. Sample and mock shall not be payable if rejected.</p>	Sqm	50	1,122.00	56,100

BILL OF QUANTITIES

SUB SECTION

6.1 a CIVIL WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
53	Precast Cement Concrete Paver Block - 80mm thick, M-40 Grade Providing and laying factory-made chamfered edge shot blasted/sand blasted finished, non-interlocking type, square/ rectangle shape paver blocks of approved make, any sizes, any shade, any pattern, any color having 80 mm thickness and minimum M-40 grade, machine made, factory finished for footpath, parking areas, service lanes and other similar areas as mentioned in the drawing Including providing and laying 50 to 80 mm thick average bedding layer of coarse sand below paver block as per required grading and specification. The laid paver block shall be mechanically compacted. The work of the paving blocks shall be executed in line and level. The paver block shall be cut by mechanical means only, if required. Paver blocks shall be compacted and shall be re-laid if necessary. The actual laid area shall be measured for payment without any wastage. The Sample and mock-up shall be approved before execution. damaged block shall not be used in laying. Sample and mock shall not be payable if rejected.	Sqm	50	1,196.00	59,800
54	Providing and fixing Modular Concrete Cobble block in different sizes with 60mm thickness, Shot blasted finish, grey/ coloured, of Vyara (Beganit) make or equivalent as per design. Top coat/ wear coat (not less than 5mm) shall have using UV resistant colour pigments from Lanxess, compressive strength 400kg/ cm2. Including providing and laying 50 to 80 mm thick average bedding layer of coarse sand below cobble block as per required grading and specification. Laid cobble block shall be mechanically compacted. Cutting of paver block by machine cut only and laying to be done by skilled flooring mason. cobbles shall be compacted and shall be re-laid if necessary. Sample to be approved by the Architect & Engineer-in-charge.	Sqm	50	1,515.00	75,750
55	Pre-cast concrete kerb Providing & fixing minimum M25 grade of customized concrete factory-made precast exposed concrete finish kerb of approved make and as per sample approved of specified sizes, specified shape etc. complete. (finish of precast element shall be upto the satisfaction of the engineer in charge & Architect.) Kerb shall have chamfered type/ pencil corner edges. Kerbs shall be fixed on the base PCC with cement mortar 1:2 including flush pointing in CM (1:2) or suitable approved make adhesive for all joints of the kerbstones, curing, etc. complete. The rate shall also include erecting and fixing in position all varieties/ shapes of kerbs (i.e. radius kerbs, corner kerb, quadrant kerbs, drain out kerb, flat kerb, parking edge kerb, ramp kerb or other any type of kerb with any shape as per drawing/design intent etc) as per drawing. Precast kerb shall be protected with good quality plastic sheet for protection against bituminous/ concrete work. The rate shall include the joining, curing, finishing, protection etc complete as directed by the engineer in charge. Actual installed kerb volume shall be measured in payment. The rate shall include the cost of base excavation, base PCC M15 grade, joining, curing, protection etc complete as directed by engineer in charge. Rate shall be unit of One Cum. For the payment kerb volume shall be considered. (Sample must be approved). Sample and Mock-up shall be carried out as suggested by the Architect and as directed by the Engineer in charge. Sample and mock shall not be payable if rejected.	Cum	31	19,490.00	6,04,190
56	Flexible/ Spring Post Providing and fixing in position flexible/ spring post of approximately size of 80 mm dia., base 200 mm dia. and height 900 mm with 75 mm wide retro reflective strips of 3 nos. and any color, any shape etc. complete as per design intent. The post shall be made of high-impact resistant polyurethane with strong and resistant against crashes and shocks as per manufacturer's specification for approved make and as directed by Engineer in charge and architect. The flexible spring post fixed on bituminous/ concrete base with required anchor fastener, bolts, other accessories etc. complete fixed can be bolted/fastner/ anchor to the floor using the base. The post of high-quality UV-stabilized polyurethane, designed to provide durable, high-visibility lane segregation and to withstand repeated vehicle impacts while returning to its original upright position. The rate shall be inclusive of flexible post (as per the approved sample), fixed with anchor bolts and epoxy adhesive, all labour, arranging in position, loading, transportation, unloading, etc complete as directed by Engineer in charge. The contractor shall arrange loose samples for approval from the Engineer-in-Charge before mass execution.	No.	5	1,046.00	5,230
57	Terrazzo Providing, applying and polishing of self levelling type factory premixed Terrazzo for Horizontal, Vertical, inclind, or any shape with all exposed rounding edge or similar location, 10 to 12 mm thick in approved base colour and with selected and approved coloured natural stone aggregates including densification and sealing as per following : 1) Surface preparation - surface shall be without any pot holes, cracks or any other defects, if any found, proper repair work shall be carried out i.e. grouting etc. Surface shall be in proper level. 2) provision of Aluminium divider Strips for joints as required 3) Primer application as per manufacturer's specification. If required, cement mortar 1:4 (1 cement : 4 coarse sand) to be applied before application of terrazzo. 4) Application of terrazzo ready-mix in required thickness in proper level and with provision of groove 5) Proper curing as per manufacturer's specification 6) Use of suitable Terrazzo Grout of matching colour as the terrazzo and densifier as per manufacturer's specification 7) Carrying out the polishing on the terrazzo, to provide mirror polish finish, as per the sample approved and as per manufacturer's specification. 8) application of water resistant non film forming sealer of same manufacturer as terrazzo pre mix, as a sealer for the polished surface. 9) Manufacturers application method is required at each stage to get desired finish. 10) Cleaning off and protection after each stage of works as required. The contractor shall submit construction methodology for the confirmation of engineer in charge. Terrazzo applied area shall be measured for payment. Loose sample for material and required number of mock-up for terrazzo work to be prepared by contractor and got approved from architects prior to mass execution works. Architect reserves right to reject part or all work of sub standard or not in confirmation to sample approved as per mock up.	Sqm	5	961.00	4,805

BILL OF QUANTITIES

SUB SECTION

6.1 a CIVIL WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
58	Precast elements for misc. items Providing, hoisting and fixing exposed concrete finish Precast Concrete of minimum M 25 grade in light pole cover, base of dustbin, duct covers, manhole covers, saucer drain, coping etc. (finish of precast element shall be upto the satisfaction of the engineer in charge & Architect.) including cost of required centring and shuttering and arranging precast members in position with required joining arrangement, MS stud or anchor/bolting with grouting etc complete all material, loading, transportation, unloading, tools, tackles, scaffolding, machinery, equipment, for all level, for all height/ depth, and as per direction of Engineer-in-Charge. Contractor shall provide loosed sample of each elements at location suggested by engineer incharge for review and approval from Engineer in charge before mass production/ execution. Architect reserves right to reject part or all work of sub standard or not in confirmation to approved sample as per mock up. Contractor shall prepare coordinated shop drawing for all elements with all members including all services/other allied civil works provision and get approval from Architect and engineer in charge. If required, excavation and base preparation work shall be paid in relevant tender items. Actual volume of installed precast elements shall be measured for payment. Sample and mock shall not be payable if rejected or casted in other location (not in scope of work area).	Cum	4	15,580.00	62,320
59	FRP Recessed Manhole cover Providing and Fixing heavy duty double seal FRP recessed Manhole cover with frame of 12.5MT capacity, in matching shade of surrounding pavement and design according to EN - 124:1994 of approved make and shade having clear opening size of 600mm x 600mm and recessed depth upto 80mm with client's logo etc. complete for all lead and lift. Cover shall be with 4 number lifting key with proper lifting arrangement. Frame shall be embedded in concrete of required grade and top level of frame shall be flush with road/surrounding level as per drawing and as directed by Engineer in charge. Rate shall be inclusive of cover frame and concrete work for fixing the frame. Sample and mock-up shall be approved by architect before execution.	No.	15	7,015.00	1,05,225
60	Recessed manhole cover Providing and fixing recessed manhole cover having capacity of 40T made with corrosion resistant metal (GI) with clear opening 600mm x 600mm. Recessed manhole cover shall be with frame and double seal system. Recessed manhole cover shall be with four side lifting arrangement with minimal dimensions and two lifting keys. The cover shall be with proper drainage arrangement, if cover to be used for softscape/ lawn area. Recess depth shall be as per adjoining development material and as per approved shop drawing. The contractor shall submit a shop drawing of cover with test certificate. Cover shall be installed in proper level as per adjoining surfaces.	No.	29	12,793.00	3,70,997
61	Precast Perforated Drain Cover Providing and placing in position factory made exposed concrete finish Precast RCC frame & perforated cover on drains of size 600mm x 600mm x 100mm of approved make of footpath of various sizes, of M-25 grade cement concrete for RCC work, including cost of moulding, reinforcement, rendering, etc i.e. cost of transportation for all leads & lift, handling at site etc. all complete (finish of precast element shall be upto the satisfaction of the engineer in charge & Architect.) as per direction of Engineer-in-Charge. Sample and mockup shall be approved by Architect before execution.	No.	20	2,111.00	42,220
62	Providing and fixing FRC Heavy Duty (HD35) Man hole cover with frame 600mm x 600mm or 600mm dia clear opening with 100 x 2mm MS flat all-round, 16mm ø plain round bar for lifting the cover & shall be fitted with plastic cups. On the upper periphery of frame 25 x 3 mm wide MS flat with hot dip galvanizing shall be well embed in concrete to protect the edges of frame. Frame shall be fixed with cement mortar or cement concrete as per site condition, as per drawing and as directed by Engineer in charge. Sample shall be approved before execution.	No.	14	4,118.00	57,652
63	Providing and fixing FRC Heavy Duty (HD35) Man hole cover with frame 900mm x 900mm or 900mm dia clear opening with 100 x 2mm MS flat all-round, 16mm ø plain round bar for lifting the cover & shall be fitted with plastic cups. On the upper periphery of frame 25 x 3 mm wide MS flat with hot dip galvanizing shall be well embed in concrete to protect the edges of frame. Frame shall be fixed with cement mortar or cement concrete as per site condition, as per drawing and as directed by Engineer in charge. Sample shall be approved before execution.	No.	7	9,925.00	69,475
64	Hume pipe for Tree Pit Providing and fixing RCC NP3 class hume pipe of 750mm internal dia. and required length in single piece or two circular half for tree pit shall be placed in excavated pit as per drawing and as directed by engineer in charge. Rate shall be inclusive of material, labour for cutting, excavation, placing in position etc complete. After Execution of Tree pit, If it is filled with debries or C&D waste due to any reason, It shall be removed without any extra cost before filling garden soil in tree pit. Tree pit shall be filled with garden soil only however garden soil filling shall be paid in relevant tender item.	Rmt	10	4,096.00	40,960
65	Supplying and fixing Cat Eye (Stimsonite) made out from Acrilo beautile sterine injuction high compressed molding with reflector made of MMC (prismatic type of size 12cm x 6cm x 2.5cm) with each unit for foxing. (High intensity grade).	No.	30	375.00	11,250
66	Providing and applying 2.5 mm thick road marking strips (retro reflective) or graphic/ letter/ arrows etc of specified shade/ colour using hot thermoplastic material by fully/ semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on concrete/ tar road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	Sqm	277	367.00	1,01,659

BILL OF QUANTITIES

SUB SECTION

6.1 a CIVIL WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
67	ACP sheet signage on Existing Pole/ New Pole for Vehicular Direction Signages: Providing, making and fixing 4 mm thick ACP sign of any shape and size and of approved make to be cut on CNC router cutting and smoothen all corners and edges. Matter shall be cut in 3M High intensity prismatic Reflective vinyl ASTM Type 4 and paste on it as per design and detail and as per manufacturer's specifications. UV stabilized lamination (exterior grade) shall be done on it. The ACP sheet shall be fixed with clamp and angle on new or any type of Pole as per drawing. Content of sign shall be letters (in any language), number, graphics/ maps, signs, arrows, etc. in any colour as per design, drawing and approved by Architect and Engineer. All side of box shall be covered with ACP sheet, but only one side elevation area shall be measured and paid in sqm. Cost of MS Pole, MS framing and civil works shall be paid as per relevant tender items. The rate shall also include cost of scaffolding, drilling, fabrication, finishing, adhesive material, back and sides plain cap sheet, fixing charges, etc at all height and all lead. The contractor shall submit the drawings with as per concept design and do the sampling and get it approved before execution.	Sqm	50	8,305.00	4,15,250
68	Vinyl Stickers: Providing, Cutting & pasting of vinyl stickers of approved make and shade with digitally printed graphic/ letter as per design and as directed by engineer in charge. Pasting of vinyl must be accurate as per the design on the approved size ACP without any kind of bubbles. The rate shall also include cost of scaffolding, drilling, fabrication, finishing, adhesive material etc at all height and all lead. Only out to out area elevation vinyl stickers shall be measured and paid in sqmt. The contractor should submit the drawings based on concept design and do the sampling and get it approval before execution.	Sqm	50	4,239.00	2,11,950
69	SS Plate Signs : Providing Making and fixing SS plate signs on 2mm thick ISI Brushed S.S. Grade 304 plate with acid etching and duco painting. All plates will be made in CNC Water Jet Cutting, with all edges smoothen and all corner to be cute round. Acid etching should be done 0.3mm deep and Use ICI duco paint for colour infill of approved colour. The letters of made of Vinyl stickers. The font colour shall be of as per drawing and specified by Architect. The plate will be fixed on wall with the stud/ fastener/ adhesive tape of 3M, jointing sealant as per design as per specification and approved by Architect or Engineer in charge. The rate shall be inclusive of scaffolding, drilling, fasteners/ adhesive material etc. at all heights as directed by engineer in charge. Only elevation area shall be measured and paid. The rate shall also include cost of scaffolding, drilling, fabrication, finishing, adhesive material etc at all height and all lead. The contractor should submit the drawings based on concept design and do the sampling and get it approval before execution.	Sqm	50	45,746.00	22,87,300
70	Map Sign: Providing, making and fixing Modular system signage of approved make system for Direction Signs as per concept drawings. Modular sign using Aluminium extrusions (Alloy 6060) with Anodizing (Thickness 15-20 microns) according to ISO:9001-2008 product with Premium grade Anodizing as per Qualanod and Qualicoat International standards and warranty as per manufacturer's specifications. Sections can be used to create totems upto 6m with variable depths as per requirement. Providing, Making and fixing 4 mm thick ACP sign of any shape and size of Flexi bond or as per approved make to be cut on CNC router cutting and make all corners and edges smooth with matter and graphic as per the concept design and manufacturer's specifications. Protective coating shall be applied over the surface of ACP. The Rate shall include all civil work related to foundation, fixing and ACP with printed matter (both side), protective coating (both side), co-sign profile, finishing good etc. for all height all level. Only one side elevation area shall be measured and paid in sqmt. The contractor should submit the drawings based on concept design and do the sampling and get it approved before mass production. The contractor shall submit the drawings based on concept design and do the sampling and get it approval before execution.	Sqm	50	56,332.00	28,16,600
71	Providing, laying and joining ISI Marked (Conforming to IS 458) RCC NP3 Hume pipe of various diameter with socket spigot joint with "O" ring. Rate shall also include freight, taxes, insurance, laying, jointing, testing , as per site condition etc.complete and as instructed by Engineer in charge.				
71.1	a) 150 mm dia	Rmt	10	397.00	3,970
71.2	b) 300 mm dia	Rmt	10	924.00	9,240
71.3	c) 450 mm dia	Rmt	10	1,620.00	16,200
71.4	d) 600 mm dia	Rmt	10	2,299.00	22,990
71.5	e) 750 mm dia	Rmt	10	3,359.00	33,590
71.6	f) 900 mm dia	Rmt	10	4,171.00	41,710
71.7	g) 1000 mm dia	Rmt	10	5,505.00	55,050
71.8	h) 1200 mm dia	Rmt	10	6,713.00	67,130
72	Providing, laying and joining ISI Marked (Conforming to IS 458) RCC NP4 Hume pipe of various diameter with socket spigot joint with "O" ring. Rate shall also include freight, taxes, insurance, laying, jointing, testing , as per site condition etc.complete and as instructed by Engineer in charge.				
72.1	a) 300 mm dia	Rmt	10	1,276.00	12,760
72.2	b) 450 mm dia	Rmt	10	2,491.00	24,910

BILL OF QUANTITIES

SUB SECTION

6.1 a CIVIL WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
72.3	c) 600 mm dia	Rmt	10	3,415.00	34,150
72.4	d) 900 mm dia	Rmt	10	7,410.00	74,100
72.5	e) 1000 mm dia	Rmt	10	9,184.00	91,840
72.6	f) 1200 mm dia	Rmt	10	10,758.00	1,07,580
73	Providing and fixing FRP steps of size 500 mm x 150 mm x 25 mm including fixing in manholes with cement concrete block or grouting, curing etc complete as per design and as directed by Engineer in charge.	Nos	77	469.00	36,113
74	Tree pit cover Providing and fixing tree pit cover around the tree pit, made of FRP Tree pit cover block shall be in two/four halves of size approximately up to - 1.2 Mt dia, including casting the cover in pattern and cut outs as per drawing and as per the architect in charge, transporting, fixing, etc., complete as directed by Engineer in charge. The rate shall also include for erecting and fixing the pieces in position as shown in the drawing with necessary equipments without any damage. (Sample shall be prepared by contractor for approval of architect before mass execution)	Nos	10	4,999.00	49,990
75	Granite Stone - 40mm thick - For Paving/ Flooring Providing and laying 40 mm thick Granite stone of any type, any finished i.e. polished, river wash, flamed finish, leather finish, linen finish, sandblasted finish or similar finish in any shade (uniform), any size and any shape for flooring, otta, pavement, copping, tread of stair, Riser of stairs similar works etc in required design and patterns as per the drawings, laid over average 40 mm thick cement mortar 1:4 (1 cement : 4 sand) bedding, side buttered with cement mortar 1:2 (1 cement : 2 sand) including provision of groove of minimum 5mm size (if required as per design intent, pointing, finishing and filling the grooves with cement mortar and matching pigment as sample approved, including curing and cleaning with wire brush to remove excess cement on the sides of stone up to the satisfaction of the Architect and Engineer-in-charges etc. Granite shall be used in single possible length for tread/riser of stair. No mortar is to be visible on the surface. Sample shall be approved before execution. If required, additional mechanical clamp shall be fixed if granite is required to fix vertically for stability purpose without any extra cost. exposed edge of stone shall be with rubbing and polishing and champharing/ making pencil corner if required, rounded corner treatment in even thickness and finished same as slab finish as per drawing and as approved and directed by Engineer in charge Rate shall be inclusive of granite (as per approved sample), fixed with cement mortar bedding, cement slurry, matching pigment, all labour etc complete.	Sqm	385	4,596.00	17,69,460
	Granite stones - for dado/cladding/wall lining etc. Providing and laying granite stones of specified thickness, specified finish, of any shade (uniform), any size, and any shape for cladding, dado, pillars, wall lining, etc. as per the drawings, laid in any pattern, fixed on any type of leveled surface with minimum 6mm thick stone fixing adhesive as per IS-15477 of an approved, make and joined with grooves or without grooves, with grey/white cement slurry mixed with a pigment to match the shade of the slabs, including finishing, rubbing, cleaning, protection, scaffolding, wastage, curing and polishing, etc. all complete, for all levels, all floors, all heights, and as directed by the Engineer-in-Charge. The length/width of stones for the dado shall be as per the design to match the joint and pattern of the flooring as per the drawing. The exposed edges of the granite stones shall be pencil-cornered and polished the same as the slab. The rate shall be inclusive of granite (as per the approved sample), adhesive for fixing, cement slurry, matching pigment, all labour, etc. all complete, but excluding cement mortar plaster/backing coat and filling with epoxy grout (if required as per the drawing) which shall be payable under relevant Tender items. The Contractor shall arrange loose samples for approval from the Engineer-in-Charge before mass execution. The actual laid area of the granite stones shall be measured for payment without considering any wastage.				
76	40 mm thick polished granite stones	Sqm	166	4,781.00	7,93,646
77	Rolling Shutter Supplying and fixing rolling shutters of an approved make, made of 80x1.25 mm M.S. laths with a 1.25 mm thick top cover, interlocked together along their entire length and jointed at the ends with end locks, mounted on a specially designed pipe shaft with brackets, side guides, and arrangements for inside and outside locking, operated with push and pull operation. This includes the cost of providing and fixing necessary 27.5 cm long wire springs made from high tensile steel wire conforming to IS: 4454 - Part 1 and M.S. top cover of required thickness including providing mechanical device chain and crank operation for operating the rolling shutter. Additionally, provision is made for grilled rolling shutters manufactured from 8 mm diameter M.S. bars instead of laths, as per the design approved by the Engineer-in-charge (the area of the grill equals the width of the shutter and the required height). The rate shall include epoxy primer and PU paint of an approved make and shade, applied to both sides as per the manufacturer's specifications, along with the guide channel and hood cover of the rolling shutter. Out-to-out dimensions of the shutter, including the guide channel and hood cover, shall be measured for payment.	Sqm	13	6,248.00	81,224

BILL OF QUANTITIES

SUB SECTION

6.1 a CIVIL WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
78	<p>Welded mesh Fencing Providing and fixing modular Vandal proof welded mesh fencing system with approximate mesh size 50 x 200 and minimum 4.5 mm wire thickness etc. all complete for all leads and lifts, all heights/depths, as per drawing/design including openable door/gate with same design intent and as directed by Engineer-Incharge along with as mentioned below :</p> <ul style="list-style-type: none"> • Height of fencing as per drawing and vendor specification. • Fencing shall be with as per approved color from architect and the engineer in charge. • Poles: required size of MS pipe (Vertical pole) shall be installed at spacing as per drawing/design intent and vendor specification. • 1 coat Primer 2 coats of PU paint of approved shade. • MS poles shall be fixed in ground with required civil work. <p>Stability of fencing shall be responsibility of contractor. Elevation area of fencing shall be measured for payment including openable gate. civil works will be paid under their respective Tender items.</p>	Sqm	100	2,393.00	2,39,300
79	<p>Pebble Wash flooring Providing, supplying, laying and finishing self-levelling type factory premixed Pebble Wash flooring of average 15 mm thickness, in approved base colour using selected and approved coloured aggregates, laid over prepared base, complete as per manufacturer's specifications and directions of Engineer-in-Charge. The item shall include washing, scrubbing and exposing of aggregates uniformly to achieve the required finish, curing, and application of specified UV-resistant water-based AcrySeal sealant to protect the surface, complete. The rate shall also include all materials, labour, tools & plants, surface preparation, mixing, laying, levelling, finishing, cleaning, curing, suitably fitting of aluminum divider Strips, scaffolding if required, and all leads and lifts, complete. The product used shall comply with sustainability requirements and shall be certified as a Green Product by CII (Confederation of Indian Industry). Complete as per the specifications and directions of the Engineer-in-Charge.</p>	Sqm	887	3,237.00	28,71,219
80	<p>WPC Plank flooring: Providing and fixing 23 to 25mm thick wpc plank flooring of an approved type, any shade and of an approved make, in required pattern and as per the manufacture's specifications, conforming to ASTM D 570, ASTM D 1894, ASTM D 256, ASTM D 790, ASTM D 1525, ASTM D 648, ISO 9352, IS 14887:2000. The wpc planks shall be made of Wood Plastic Composite (WPC) Panels made from 55%, Wood 35% High grade polymer (HDPE) and 10% Additives like bonding stabilizer as per manufacturer specification, UV stabilizer etc on boardwalk, It should be weatherproof and suitable to be used in outdoor spaces with temperature ranging between - 40 °C to 60 °C. WPC decking section should have bulk density of 1.2 g/cm3. Wood Polymer Composites products must be certified as GREEN PRODUCT by IGBC. WPC plank flooring installation by approved applicator only. Rate shall be inclusive of all the accessories like edge strip, joining strip, quarter strip, molding strip, end strip, corner strip, etc. required as per design. The gaps to be covered with the help of accessories etc., finished in all respects as per the manufacturer's specifications. complete for all floors, all level, all height as directed by the engineer in charge. The rate shall be inclusive of making any cut-out for services, matching floor cover over cut outs etc., complete. The Contractor shall get approval of a sample and pattern and prepare the sample, get approved by the Engineer in charge before execution of work. The architect and the Engineer in charge reserve the right to reject part or all work of substandard or not in confirmation to the approved sample as per mock-up. The total execution method shall be as per the manufacturer's specification and approved by the Architect and Engineer in charge. The area of laid wpc panel flooring system shall be measured for payment without considering any wastage and no seprate payment to be made for any kind of</p>	Sqm	32	3,345.00	1,07,040
Total Carried Over to Summary					2,09,65,359
10	DISMANTLING WORKS				
	<p><i>Note: -</i> 1) The method of demolition work shall be approved by the Engineer-in-charge before execution of work. 2) Demolition work shall be carried out by any means and as per approved method without damaging adjoining elements/ building and any building/ campus property. 3) The rate includes all necessary machinery, labour, tools, and tackles for the dismantling of specified elements in any condition, by any means, etc. complete as directed by the Engineer-in-charge including disposing of serviceable material within the campus and unserviceable material outside the campus for all lead and lift at the non-objectional place as directed by Engineer-in-charge.</p>				
81	<p>Dismantling of existing plain concrete work of any grade and any type, using either mechanical or manual methods, as advised by the Engineer-in-Charge. This includes providing necessary tools, plant, and scaffolding where required. The work involves sorting the dismantled material, disposing of unserviceable material at an approved location, and stacking serviceable material with all necessary all lifts and all leads, as directed by the Engineer-in-Charge. The volume of the existing plain concrete work shall be measured for payment before the dismantling commences. The method for calculating the volume for payment shall be approved by the Engineer-in-Charge.</p>	Cum	125	609.00	76,125
82	<p>Dismantling of existing reinforced cement concrete (RCC) work of any grade and any type, using mechanical or manual methods as advised by the Engineer-in-Charge. This includes cutting reinforcement, and providing necessary tools, plant, and scaffolding. The work also involves sorting the dismantled material, disposing of unserviceable material at an approved location, and stacking the serviceable material with all necessary all lifts and all leads, as directed by the Engineer-in-Charge. The volume of the existing RCC work shall be measured for payment before the dismantling begins. The method for calculating the volume for payment shall be approved by the Engineer-in-Charge.</p>	Cum	250	1,057.00	2,64,250

BILL OF QUANTITIES

SUB SECTION

6.1 a CIVIL WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
83	Dismantling of existing masonry work of any type, while preserving the integrity of any existing brickwork, regardless of thickness, plaster, or wall lining, using the necessary tools, plant, and scaffolding. The work includes sorting the dismantled material, disposing of unserviceable material at an approved location, and stacking the serviceable material with all required all lifts and all leads, as directed by the Engineer-in-Charge. The volume of the existing masonry work shall be measured for payment before dismantling begins. The method for calculating the volume for payment shall be approved by the Engineer-in-Charge.	Cum	50	550.00	27,500
84	Dismantling of existing metalworks / Steel Structures at all levels, including dismantling, cutting, and dismembering all structural elements by any means, as suggested by the Engineer-in-Charge. This includes earthwork, base concrete, and reinstating the disturbed ground. The work involves stacking useful materials and disposing of unserviceable materials at an approved location, including all necessary leads and all lifts, as directed by the Engineer-in-Charge. The weight of the dismantled steel members shall be measured for payment. The method for calculating the weight of the steel for payment shall be approved by the Engineer-in-Charge.	Kg.	50	3.00	150
85	Removal of existing kerb stones of any type, any size, or any thickness , including the removal of the kerb with base PCC. This work involves excavation, backfilling, and reinstating the disturbed area. The serviceable material shall be stacked, and unserviceable material disposed of at an approved location, including all necessary lifts and all leads, as directed by the Engineer-in-Charge. The length of the existing kerb to be removed shall be measured for payment before the dismantling begins. The method for calculating the length for payment shall be approved by the Engineer-in-Charge.	Rmt	429	38.00	16,302
86	Dismantling or removal of tiled, paved floors, stone floors , including all required sub-layers and stones from door jambs, windows, ventilation openings, wall tiles, dado, etc. This includes any necessary earthwork and backing coat mortar. The work involves disposing of unserviceable material at an approved location with all necessary lifts and all leads, and stacking serviceable material, including loading and unloading for all required leads and lifts, as directed by the Engineer-in-Charge. The area of the existing flooring/dado shall be measured for payment before the dismantling begins. The method for calculating the area for payment shall be approved by the Engineer-in-Charge.	Sqm	50	47.00	2,350
87	Dismantling/ removing any services type of pipe lines of any dia up to any depth by any means as suggested by Engineer in charge including excavation, removing of pipe, back filling, watering, compaction, including tools, plants, all types of accessories and scaffolding wherever necessary, disposal unserviceable material with all lifts and up to any lead at non objectional place and stacking the serviceable material including loading, unloading for all lead and lift and as directed by Engineer-in-charge.	Rmt	50	233.00	11,650
88	Dismantling/ Excavation of asphalt pavement Excavation of asphalt pavement/ concrete pavement by any means including demolishing of asphalt carpet/ concrete surface, including all sub layer, disposal all material for all lead and lift as directed by Engineer in charge. a) upto 0.60m thickness The area of the existing pavement shall be measured for payment before the dismantling begins. The method for calculating the area for payment shall be approved by the Engineer-in-Charge.	Sqm	50	589.00	29,450
Total Carried Over to Summary					4,27,777
11	Miscellaneous Works				
89	Core cutting : Providing and wet drilling accurate and clean holes of specified diameter in RCC walls, slabs, beam or any other RCC member without vibration by core cutting (diamond drilling) machine of approved make for laying service lines including scaffolding, safety majors, disposing the debris, cleaning, making good, providing epoxy mortar/ micro concrete/ patch repair mortar for concrete for grouting the gaps around the pipes for all levels/ all height, after approval and as per instruction of engineer in charge etc compete. Measurement shall be taken for the depth of holes in running meter for specified diameter. Holes shall made by authorized approved agency. Scanning of reinforcement shall be carried out before core cutting if required and as instructed by Engineer in charge.				
89.1	a) holes upto & from 52 to 77 mm dia.	Rmt	10	2,540.00	25,400
89.2	b) holes from 77 to 102 mm dia.	Rmt	10	3,314.00	33,140
89.3	c) holes from 102 to 125 mm dia.	Rmt	10	3,701.00	37,010
89.4	d) holes from 125 to 152 mm dia.	Rmt	10	4,088.00	40,880
89.5	e) holes from 152 to 202 mm dia.	Rmt	10	5,637.00	56,370
89.6	f) holes from 202 to 250 mm dia.	Rmt	10	6,799.00	67,990
89.7	g) holes from 250 to 350 mm dia.	Rmt	10	8,734.00	87,340

BILL OF QUANTITIES

SUB SECTION

6.1 a CIVIL WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
90	Chemical Anchor: Supplying, Drilling/ Cleaning hole and injecting grouting chemical with the help of dispenser, into a hole of dia & depth as per manufacturer/ structural consultant's specification and fixing rebar of the required diameter subsequently. Fixing methodology shall be followed as per manufacturer's guidelines. Steel will be paid under relevant item. Manufacturer to submit Rebar Depth Calculation based on design loads & other parameters as provided by consultant and in accordance with EOTA-TR-023/029 "guidelines for post installed rebar connections" for approval. Rate shall be inclusive of all material, labour, necessary scaffolding etc complete for all height as directed by engineer in charge.				
90.1	a) 10mm x 150mm	No	10	400.00	4,000
90.2	b) 12mm x 180mm	No	10	575.00	5,750
90.3	c) 16mm x 240mm	No	10	880.00	8,800
90.4	d) 20mm x 300mm	No	10	1,475.00	14,750
90.5	e) 25mm x 375mm	No	10	1,940.00	19,400
91	Rebaring : Providing material and labour for Drilling/ Cleaning hole and injecting grouting chemical with the help of dispenser, into a hole as per manufacturer/ structural consultant's specification and fixing rebar of the required diameter subsequently. Fixing methodology shall be followed as per manufacturer's guidelines. Steel will be paid under relevant item. Manufacture to submit Rebar Depth Calculation based on design loads & other parameters as provided by consultant and in accordance with EOTA-TR-023/029 "guidelines for post installed rebar connections" for approval. Rate shall be inclusive of all material, labour, necessary scaffolding etc complete for all floors, all height as directed by engineer in charge.				
91.1	a) hole of dia 8mm and depth min 120mm	No	10	197.00	1,970
91.2	b) hole of dia 10mm and depth min 150mm	No	10	273.00	2,730
91.3	c) hole of dia 12mm and depth min 180mm	No	10	360.00	3,600
91.4	d) hole of dia 16mm and depth min 240mm	No	10	557.00	5,570
	Total Carried Over to Summary				4,14,700
	TOTAL OF SUB SECTION 6.1 a CIVIL WORKS				4,77,93,030

BILL OF QUANTITIES

SUB SECTION

6.1 b ELECTRICAL WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
	ELECTRICAL WORKS Notes: 1) For more detailed description of any material or item contained in the BOQ, please refer Electrical Works Specifications. If the detailed specs for a particular item is not contained in the Part-II technical specification, the description given in the BOQ shall have to be referred. 2) All items mentioned in the tender shall be executed as per the instruction and direction of Engineer-in-charge. 6.0 Panels_Section Feeder Pillar (Outdoor Type A) 6.1 Supplying, unloading at site, shifting to site, assembling, leveling, grouting, erecting, Testing, & Commissioning double compartmentalized Double door type section feeder pillar with IP 55 protection & should be powder coated fabricated from 14 Guage CRCA sheet & folded channel totally enclosed cubical type with pad lock arrangment. The successful tenderer will have to prepare general arrangement with dimensions (referring the typical elevation drawing provided) & get it approve through Architect/ Consultant. All civil work including RCC platform for section pillar should be in scope of Electrical contractor complete in all respect as per detail drawing and directed by engineer incharge. (As per attached Single line diagram) Space Provision For Supply Co' Energy meter in section feeder pillar.	No.	1	83,163	83,163
2	Main Panels SITC OF following type of panels made from CPRI and ISO approved panel builder scope include unloading panel, shifting at required location checking and fixing of lose parts wire etc panel made as per SLD and given approved make list main power panel (Approx 1500 x 2000mm x 450 Depth)	No.	1	1,45,188	1,45,188
3	Covering of cable with second class bricks or cement tiles laid cover the cable crosswise & also on both sides with covering of 7.5 Cms. layer of sand above & below cable (16 bricks per meter)	Rmt	50	139	6,950
4	Drilling the road without breaking the road surface (Asphalt) for laying of cable for feeding power supply by making up to following size of holes at both ends complete. (B) Up to 150 mm bore dia	Rmt	50	610	30,500
5	Cables: Supply, testing and Laying XLPE steel wire/flat armoured cable of 1100 V grade of Aluminum / Copper Conductor of following sizes in ready made trench or mounted on wall with necessary clamping arrangement or in pre-laid RCC HUME/DWC pipe with necessary cable identification mark to be provided at distance of 10 mt. The vertical cable on wall shall be drawn in pre-laid conduit for vertical mechanical support.(" property of SRFDCL" to be embosed on above 1000mtr length. Contractor needs to take care of the same while placing order.)				-
6	(E) 3 1/2 core 95 Sq. mm (50 Sq. mm 1/2 core)	Rmt	120	486	58,320
7	(C) 3 1/2 core 50 Sq. mm (25 Sq.1/2 mm core)	Rmt	50	282	14,100
8	25 Sq.mm x 4 C Al. XLPE ARM Cable	Rmt	210	189	39,690
9	16 Sq.mm x 4 C Al. XLPE ARM Cable	Rmt	90	152	13,680
10	10 Sq.mm x 4 C Al. XLPE ARM Cable	Rmt	730	139	1,01,470
11	6Sq.mm x 4 C Al. XLPE ARM Cable	Rmt	1,435	125	1,79,375
12	3 core 2.5 Sq. mm CU. unarmoured Cable	Rmt	800	136.00	1,08,800
13	Cable Gland: Providing and, fixing heavy duty flange type brass cable gland with rubber ring for PVC insulated armoured cable complete with out going tails, insulating tape etc for following size of cables.				-
14	(D) 3 & 1/2 core 95 Sq. mm	No.	2	130	260
15	(B) 3 & 1/2 core 35/50 Sq. mm	No.	2	75	150
16	(E) 2 to 4 core 25 Sq. mm	No.	4	51	204
17	(D) 2 to 4 core 16 Sq. mm	No.	53	47	2,482
18	(C) 2 to 4 core 10 Sq. mm	No.	730	38	27,740
19	(B) 2 to 4 core 6 Sq. mm	No.	57	38	2,181
20	(A) 2 to 4 core 2.5 / 4 Sq. mm	No.	88	33	2,904
21	Supply & Making Joints of Solder less crimping type Aluminium lugs connecting the same to various SFP's/ PP/ Poles/Switch Gear etc. conforming to IS suitable for cable of following size evenly crimped with high pressure tool with brass/cadmium plated nut bolts in an approved manner.				-
22	(F) 95 Sq.mm.	No.	9	40	
23	(D) 35/50 Sq.mm.	No.	8	20	160

BILL OF QUANTITIES

SUB SECTION

6.1 b ELECTRICAL WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
24	(C) 16/25 Sq.mm	No.	18	15	264
25	(B) 10 Sq.mm	No.	232	13	3,020
26	(A) 1.5/ 2.5/4/6 Sq.mm	No.	517	6	3,099
27	Mains: Providing and erecting Mains with 1.1 KV grade FRLS PVC insulated ISI marked stranded Copper conductor wire in following type of pipe to be erected concealed in /flushed on wall/ceiling, with 1.5 sq. mm copper conductor FRLS PVC insulated stranded wire of green colour for earth continuity of following size (A) With medium class Rigid PVC pipe and accessories (a) 2 wire 1.5 sq. mm	Rmt	100	62	6,200
28	Providing and erecting Mains with 1.1 KV grade FRLS PVC insulated ISI marked stranded Copper conductor wire in following type of pipe to be erected concealed in /flushed on wall/ceiling, with 1.5 sq. mm copper conductor FRLS PVC insulated stranded wire of green colour for earth continuity of following size (A) With medium class Rigid PVC pipe and accessories (b) 2 wire 2.5 sq. mm	Rmt	100	82	8,200
29	providing and erecting Mains with 1.1 KV grade FRLS PVC insulated ISI marked stranded Copper conductor wire in following type of pipe to be erected in / on wall / ceiling with 2.5 sq. mm copper conductor FRLS PVC insulated stranded wire of green colour for earth continuity of following size (a) 2 wire 4 sq. mm	Rmt	240	111	26,640
30	providing and erecting Mains with 1.1 KV grade FRLS PVC insulated ISI marked stranded Copper conductor wire in following type of pipe to be erected in / on wall / ceiling with 2.5 sq. mm copper conductor FRLS PVC insulated stranded wire of green colour for earth continuity of following size (B) with 16 swg HGS metal conduit pipe and accessories painted black. (g) 4 wire 4 sq. mm	Rmt	50	232	11,600
31	providing and erecting Mains with 1.1 KV grade FRLS PVC insulated ISI marked stranded Copper conductor wire in following type of pipe to be erected in / on wall / ceiling with 2.5 sq. mm copper conductor FRLS PVC insulated stranded wire of green colour for earth continuity of following size (B) with 16 swg HGS metal conduit pipe and accessories painted black. (h) 4 wire 6 sq. mm	Rmt	240	325	78,000
32	Fabrication Supplying , fabricating and installation of various sizes MS race way / junction boxes/clamps/hangers / enclosure for light fixtures/ for cable trays etc. made out of 14 gauge sheet/Angle/Flat/rod/ channel/box section etc with all necessary accessories like bend, junction boxes, coupler, supporting clamps, elbows, hardware, anchor fasteners complete with Cutting, welding, grinding, finishing necessary grouting,cementing, plastering etc.. All the necessary fabrication required will be included in the scope of contractor. Scope also includes two coat of primer and two coat of paining of each items on all the sides complete in all respect as instructed by Architect / project in charge.	KG.	150	77	11,550
33	Earthing: Supplying & erecting earth pit of minimum bore dia.150mm size approved make Earthing Electrode consisting Pipe-in-Pipe Technology as per IS 3043-1987 made of corrosion free hot dipped G.I.Pipes having Outer pipe dia of 50mm having 80-200 Micron galvanising, Inner pipe dia of 25 mm having 200-250 Micron galvanising, connection terminal dia of 12mm with constant ohmic value surrounded by highly conductive compound with high charge dissipation suitable for following type of applications with chamber and heavy duty cover.(approved make OEM has to submit test certificate) & having back filling compound of (B) Inner chemical (CCM Compound)- Resistivity:- 0.2 Ω/ meter testing as per IEC 62561-2017, Voltage drop:- < 1 volt at no load & dry form, Sulphar content:- <2%(C) Back fill Compound :- Earthing compound should be capable to retain moisture for long time Necessary test report must be submitted.. (c) For Electrical Installation covering Transformer Neutrals, Lightning arrester Earthing, A.C.Plant & Sensitive Computer System(like Automation, SCADA) i.e independent Earthing in normal soil. Length of Pipe : 3.00 mtrs Back filling Compound :2 nos Bags of 25 Kg.	No.	10	8,551	85,510
34	Earth wire/strips : Supply and laying HOT dip GI. earthing required size strips for interconnecting the earthing stations, panels, DB's etc. in built up trenches, on walls/ceiling, buried in ground generally as specified and shown on drawings complete with : a) Fixing accessories. b) Corrosion protection of buried conductors with bituminous coating and covered with PVC tapes. 25 x 3 mm GI. strip	KG.	186	77	14,322
35	Providing and erecting HOT deep Galvanised iron strip wire 8 to 16 SWG	KG.	414	77	31,847
36	Earth Link : 25mm x 6 mm 1ft Long GI.earth link fixed by necessary screws on wall.	KG.	5	77	385

BILL OF QUANTITIES

SUB SECTION

6.1 b ELECTRICAL WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
37	Miscellaneous Providing and erecting ISI mark Medium class RIGID PVC PIPES of following size complete to be erected on/in wall or ceiling erected with necessary PVC fittings & Junction boxes fixed with adhesive solution & Clamps with following dia of pipes, in approved manner as directed. (b) 25 mm	Rmt	100	33	3,300
38	(c) 32 mm	Rmt	50	54	2,700
39	(d) 40 mm	Rmt	50	67	3,350
40	Providing & laying approved make ISI marked Rigid PVC pipe having 6Kg / cm ² (Class-3) to be erected at road crossing on or floor as directed for laying of cable. The pipes as following size of dia & weight per 6 mtr. (B) 50 mm inner Dia. (2.5Kg/6RMT)	Rmt	25	69	1,725
41	DWC Pipes Providing & laying approved make Double walled corrugated pipes (DWC) of polyethylene(conforming to IS 14930 II)with necessary connecting accessories of same material at required depth in existing trench for laying of cable. below ground / road surface for enclosing cable. Including excavation and back filling (if required)				-
42	(D) 120 MM OD DWC Pipe	Rmt	1,128	136	1,53,408
43	(C) 90 MM OD DWC Pipe	Rmt	744	95	70,680
44	(A) 50 MM OD DWC Pipe	Rmt	2,356	62	1,46,072
45	Scope includes Follow Up with all the local power supply co, Local Gas company, telecom company, local government dept., any kind of AMC department , Environment Dept. etc. for getting approval for handing over the site for succesfull installation. followup with local supply co. for getting supply to various Section Pillar. The scope also covers lying of L.T. cable from Section Pillar to company's cut-out. This also covers to obtain any permission required for road crossing from any authority (if required), Filling the necessary application to supply co., following up and getting the supply filling the necessary test report to the supply co. All official fees shall be paid by client on presentation of documentary proof and all other out of pocket expenses shall be of contractor.	LOT	1	25,000	25,000
46	DISTRIBUTION BOARD Providing and erecting Sheet Steel powder coated MCB distribution board - flush / surface mounted fitted with busbar, neutral link, earth bar and DIN rail, Conforms to IS 8623-1 & 3, IEC 61439-1 & 3 without MCB to house appropriate nos. of MCBs.(The DBs should be used of same company of MCB to be used) suitable for (a) single door (IP-30) (iii)8 way	No.	2	696	1,392
47	Providing and erecting Sheet Steel powder coated MCB distribution board - flush / surface mounted fitted with busbar, neutral link, earth bar and DIN rail, Conforms to IS 8623-1 & 3, IEC 61439-1 & 3 without MCB to house appropriate nos. of MCBs.(The DBs should be used of same company of MCB to be used) suitable for (B) three phase incoming and single phase horizontal type outgoing Per phase isolation type (PPI) (b) sheet steel double door (iii)8 way	No.	2	3,379	6,758
48	MCB 's and its Accessories Providing & erecting 415V MCB Four Pole Switch for Lighting Load (B curve) having 10KA breaking capacity & confirms to IS :8828 in existing box having following capacity (a) 6 to 32 Amp. (III)	No.	2	590	1,180
49	providing and erecting Approved make RCCBs conforming to IS: 12640 and having sensitivity of 30 mA and Short Circuit withstand capacity of 10 KA and suitable for operation on single phase 240 V,50Hz. having characteristic of quick action & tripping with all advance feature & do not incorporate any electronic component. for following Max. rating erected as directed (i) 25 Amps.DP	No.	6	1,950	11,700
50	Supplying & erecting approved make RCCB + MCB (Electro magnetic type only) working on residual current device having 10 KA short circuit breaking capacity and 30 mAmp. Sensitivity & 30 mili sec. tripping time conforming to IS 12640 test knob facility trip free mechanism operating for rated leakage at nominal ten volt, complete erected including all materials lugs screws etc. completed. [a] 6A / 10A / 16A / 20A / 25A 2 pole single phase Cat. II	No.	2	1,798	3,596
51	providing and erecting Miniature circuit breaker single pole 6A to 25A suitable to operate on 240 V A.C. system and having breaking capacity 10 KA to be erected in existing box. confirming to IS 8828/1996 with ISI Mark (Cat.III)	No.	48	111	5,328

BILL OF QUANTITIES

SUB SECTION

6.1 b ELECTRICAL WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
52	Point wiring for Light / Bell with 2-1.5 sq.mm & earth wire of 1.5 sq.mm (Green) both are of ISI marked 1.1 KV grade FRLS PVC insulated multi strand copper wires up to 10 mtr length , in below type of pipe erected with 6A Modular type switch / bell push & accessories and earth continuity of following type, erected on PVC / Metallic/Wooden box, single mounting base frame covered with textured/metallic/white front plate modules erected on / in wall / ceiling as per pipe erected, with necessary Lamp holder/ceiling rose / H.D.Connector as directed. (f) with medium class Rigid PVC pipe and accessories erected concealed in wall/ceiling complete Cat. III	No.	8	481	3,848
53	Point wiring for Tissino / Modular secondary light point with 2-1.5 sq.mm & earth wire of 1.5 sq.mm (green) both are of ISI marked 1.1 KV grade FRLS PVC insulated multi strand copper wires, in below type of pipe to be erected complete with earth continuity and necessary connection with primary light with accessories erected on Metal / PVC / wooden box covered with 3 mm thick PC(Polycarbonate) / Acrylic sheet for open / concealed wiring. with necessary Lamp holder / ceiling rose / H.D.Connector as directed. Note:- Maximum up to 6 mtrs length, excess will be considered as Mains for Secondary Point. (f) with medium class Rigid PVC pipe and accessories erected concealed in wall/ceiling complete Cat. III	No.	8	166	1,328
54	Point wiring for FAN with 2-1.5 sq.mm & earth wire of 1.5 sq.mm (Green) both are of .ISI marked 1.1 KV Grade FRLS PVC insulated multi strand copper wires up to 10 mtr length, in below type of pipe erected with 6A Modular type switch and hum free EME four or more step type electronic fan regulator with separately mounted and accessories with earth continuity of following type erected on PVC / Metallic/Wooden box, single mounting base frame covered with textured/metallic/white front plate modules erected on / in wall / ceiling as per pipe erected. with necessary ceiling rose / H.D.Connector as directed. (f) with medium class Rigid PVC pipe and accessories erected concealed in wall/ceiling complete Cat. III	No.	4	668	2,672
55	Point wiring for Individual Plug with & earth wire of 1.5 sq.mm (Green) both are of ISI marked 1.1 KV grade FRLS PVC insulated multi strand copper wires up to 10 mtr length, in below type of pipe erected complete with Modular type switch & 5 pin Plug erected on PVC / Metallic/Wooden box covered with appropriate front plate modules erected on / in wall / ceiling as per pipe erected with following type of accessories. [I] For 6A Plug and 6 a switch with 2-1.5 sq.mm Cu. Wire from nearby switchboard/mcb db board (f) with medium class Rigid PVC pipe and accessories erected concealed in wall/ceiling complete Cat. III	No.	8	505	4,040
56	[III] For 16A Plug and 16 amp switch with 2-4 sq.mm Cu. Wire with 2.5 sq.mm (green) earthing wire from mcb db board. (f) with medium class Rigid PVC pipe and accessories erected concealed in wall/ceiling complete Cat. III	No.	8	863	6,904
57	Point wiring for on board Looped Plug with 6A Modular type switch & 5 pin socket erected on PVC / Metallic/Wooden box, single mounting base frame covered with textured / metallic/white front plate modules erected on / in wall / ceiling with following type accessories. Cat. III	No.	4	255	1,020
58	13.0 Light Fixtures & Fans: Supplying, erecting, connecting, testing and commissioning of Following type LED Light Fixture with all necessary Hardware, Internal Wiring with Lamp,Ballast etc. all required accessories Complete in all respect. Any kind of LED Light fixture with basic rate Rs.1500 Type A	No.	8	1,975	15,796
59	Any kind of LED Light fixture with basic rate Rs.3000 Type B	No.	8	3,717	29,734
60	Supply, Installation, Testing and Commissioning of suitable sweep, BEE 5 Star rated, Ceiling fan with Brush Less Direct Current (BLDC) permanent ferrite magnet Motor, class of insulation: B, Rust free 3 nos.Aluminium blades, 2 nos. canopies, shackle kit with earthing provision, copper winding, Power factor not < 0.9, Service Value (CMM/W) minimum 6.85, Air delivery minimum 215 CMM, 350 RPM,230v (tolerance as per IS : 374-2019), THD < 10%, with remote unit for Speed Control and all remaining accessories including safety pin, nut bolts, washers, temperature rise = 75 degree C (Max.), suitable for 140 to 285 Voltage and rectifier circuit with surge, over current and overload protection , 50 Hz, Single phase AC Supply, earthing etc. Complete as required.[Make shall be approved by Engineer in Charge] (B) 1200 mm Sweep (48")	No.	4	2,857	11,428
61	Supplying & erecting approved make low noise decorative exhaust fan having square frame ABS body with inbuilt lowers & square frame. 250mm with 1350 RPM Cat.II	No.	2	1,353	2,706

BILL OF QUANTITIES

SUB SECTION

6.1 b ELECTRICAL WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
62	<p>External Lighting Post top lantern Supply, erecting, testing, commissioning of 4 Mtr. GI pole of 139 X 4.00 mm thk. With 400 X 12 mm round flange with integral type junction box with necessary reducer / coupler for fixing of light fixtures (post top lantern) & Hinged access door with allen key & gasket require to access the integral junction box, with one coat of zinc oxide complete in all respect as per Drawing. Rate shall be including PU paint of shade as per drawing or as directed by Architect and rate shall be inclusive of RCC foundation work with earthing complete in all respect as per requirement as per site condition with cost of the chemical grouted Anchor fastener/foundation bolt and spiral earthing approx 2 mtr length of GI wire. (Sample to be approved)</p> <p>1) integrated junction box having with necessary 6 way connector, 1 No. / 2 Nos. 2A SP MCB with din rail channel, 8mm thk. Hylem sheet, 12x2 mm thk. GI Patti Clamp, with necessary required hardware, necessary welding & Fabrication work (if required) complete in all respect. 2) 40 mm diameter GI pipe for each cable entry . 3) Wiring up to the light fixture from the junction box using 3nos. x 1.5 sq.mm.flexible FRLS copper wires of specified make for each fixture. 4) Concrete foundation with base plate. 5) Excavation for erection of poles as per drawing complete in all respect. 6) Pole Numbering to be carried out by contractor as instructed by Site in charge as per Client's requirement.</p>	No.	26	23,892	6,30,737
63	<p>SITC of Decorative Light Fixture (45 Watt approx)- LED Decorative Post Top type of Luminaires, Symmetric/Assymmetric BIS approved (alongwith BIS certification of model streetlight family confirming to IS 10322/IEC60598 & LM79 parameters as per tender specs),.Body of the fixture must be in two parts and fixture opening of the fixture is from front side for the ease of operation . The protector is made of single piece injection moulded polycarbonate with thickness of 3 mm. Protector grade with UV resistant IK 09 (Confirmed by IEC60598 report from Third party NABL approved lab) . ring Permanently sealed optical compartment with IP66 protection.(Confirmed by IEC60598 report from Third party NABL approved lab). Luminaire offers tool free access to gear compartment with IP65 protection(Confirmed by IEC60598 report from Third party NABL approved lab) .Minimum Luminaire dimensions of approx 545* 550 mm. Luminaire can be installed as a suspended luminaire with 1 inch BSP stainless steel pipe with 2 chuck nuts is provided..The luminaire must be provided with Air vent plug in optical compartment.The luminaire is equipped with PC lenses with wide photometry for increased pole spacing. The luminaire is provided with disconnecter to avoid electrical shocks. Easy access to control gear compartment by opening special draw latch with zinc plated material and hinge kind of arrangement. Fixture is having external surge protection of 10KV. Electronic driver is having power factor>0.90*, THD<15*%, CRI>70 and input voltage range from 120-227V AC at 50Hz. system efficacy of minimum 120 lm/watt for frosted protector (Confirmed by LM79 report from Third party NABL approved lab) in CCT range of 4000K as per ANSI. presented with Dialux report and IES file of the luminaire System life of 50000 burning hours with 70% of initial lumens maintained Luminaire is suitable for operating temperature (Ta) from -10° to 50°C. Driver can withstand 320V AC for 48 hours and 440 V AC for 8 hours., Equivalent to keselec make Porto-NU-45 watt ,IP66 ,IK09 ,120 LM/watt @ 4000k-Post top version or similar to other OEM standards.</p>	No.	26	39,244	10,36,042
64	<p>SITC of Any kind of LED Street Light Fixtures type - C (with Basic Rate of Rs.15000/-) Light Fixture to be selected by Architect . Sample to be approved before Mass production.</p>	No.	5	21,107	1,05,534
65	<p>SITC Any kind of LED Street Light Fixtures type - D (with Basic Rate of Rs.30000/-) Light Fixture to be selected by Architect . Sample to be approved before Mass production.</p>	No.	5	41,665	2,08,327
66	<p>SITC of LED 12Watt spike light with die casted aluminium body, IP66, suitable to use for out door, with require mounting clamp which makes it possible to adjust and incline precisely on site. it can be mounted on a wall or on the ground with spike, nut bolts, base plate etc required necessary accessories for installation, approx CCT 3000 to 4000k, PF> .90, rated voltage 240VAC Design checked by & approved by Architect.</p>	No.	17	9,057	1,49,441
67	<p>SITC of LED 12 Watt Light fixtures, IP67,IK10 Ground burial, 3000 /4000 k , Pressure die cast body suitable to mount on wall, on floor, to be flush in tiles or floor or directed by incharge with all required accessories like clamp, nut botl, base plate etc. Design checked by & approved by Architect.</p>	No.	17	16,302	2,68,983
68	<p>SITC of LED 40Watt Linear wall washer IP67, IK08, Extruded aluminium housing ,approx 1 m length, 3000K /4000K suitable to mount on pole, on wall, on floor or directed by incharge with all required accessories like clamp, nut botl, base plate etc. Design checked by & approved by Architect.</p>	No.	1	15,094	15,094
69	<p>SITC of LED 12 Watt Light fixtures, IP67,IK10 foot light, 3000 /4000 k , Pressure die cast body suitable to mount on wall to be flush in tiles or floor or directed by incharge with all required accessories like clamp, nut botl, base plate etc. Design checked by & approved by Architect.</p>	No.	11	4,830	53,130
70	<p>SITC of LED Bollard fittings of minimum height 1000 mm & dia.100mm having polycarbonate clear/milky diffuser mounted on 3mm thick aluminium finished powder coated pipe with base plate 160x160mm with erection by M8x75mm fastner with required RCC foundation.IP65 for 9 to 20 watt and above ,surge-4kv .</p>	No.	11	14,490	1,59,390

BILL OF QUANTITIES

SUB SECTION

6.1 b ELECTRICAL WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
71	SITC of 260mm x 160mm x 98 mm Water tight junction box (equivalent to Hensel make Cat No. KF 9255) having Degree of Protection IP 67 with 1 Nos. 6 way terminal suitable up to 16 Sq.mm with necessary accessories with din rail channel complete in all respect.	No.	12	2,118	25,416
72	SITC of 98mm x 98mm x 61 mm Water tight junction box (equivalent to Hensel make Cat No. KF 9045) having Degree of Protection IP 67 with 1 Nos. 6 way terminal suitable up to 4 Sq.mm with necessary accessories with din rail channel complete in all respect.	No.	66	1,649	1,08,801
73	SITC of 32A X 415v plug & socket with interlocked switched socket, FP MCB and surface mounting box IP 66 with din rail for 5 module without cost of wiring and piping.	No.	8	9,202	70,855
Total Carried Over to Summary					44,45,369
TOTAL OF SUB SECTION 6.1 b ELECTRICAL WORKS					44,45,369

BILL OF QUANTITIES

SUB SECTION

6.1 c IRRIGATION AND HORTICULTURE WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total Amount (In Rs.)
Irrigation Work					
1.00	IRRIGATION SYSTEM NETWORK				
PIPES AND ACCESSORIE					
	Providing & fixing of following dia. PVC pipe conforming to IS:4985-2021 standards with pressure mentiodn in the Item with all fittings and accessories e.g. couplings, tees, bends, reducers, screwed adapters, flanged tail pieces etc of Class 3 (PN 6). as required with Excavation & Backfilling upto 600mm for main and 450 mm for submian depth.				
1.01	PVC Pipe 63mm x 6 Kg/cm2 (PN 6)	RMT	294	325	95,550
1.02	PVC Pipe 50mm x 6 Kg/cm2 (PN 6)	RMT	90	328	29,520
1.03	PVC Pipe 40mm x 6 Kg/cm2 (PN 6)	RMT	582	155	90,210
1.04	Excavating, Laying, Jointing & Commissioning PVC Pipes from 63mm OD to 40mm OD, Trench Size minimum 600mm Deep for Main Lines, 300mm to 450mm Deep for Submains ines, Backfilling with compaction and removing excess soil up to 50m Lead from site.	RMT	870	175	1,52,250
SPRINKLERS & ACCESSORIES					
1.05	Providing of Spray Pop-up Sprinkler 4" (4" Pop Up height from Bottom to Centre of Discharging Nozzle) from (2.4 to 5.4 Mtr Radius) with Check Valve, complete with required nozzle	Nos	118	450	53,100
1.07	Providing & Fixing of Swing Joint 1/2" assembly for Connecting Spray pop up sprinkler having four Elbow with clamp saddle of pipe size . The fittings shall be made of UV resistant thermo plastic etc. item complete.	Nos	118	225	26,550
VALVES & ACCESSORIES					
	Valves Providing of Various Valves PN 16 having both side Union, threaded/pain with required Fittings & Tapping PP Clamp Saddles with Chromed Nut Bolt & Nitrile Rubber Ring				
1.08	PVC Ball Valve 63mm	Nos	11	2,000	22,000
1.09	PVC Ball Valve 50mm	Nos	1	1,800	1,800
1.10	1" Double Acting Air cum Vacuum Release Valve Make: Bermad/ARI/Plasson with Gunmetal valve 1" Make: NIBCO/Zoloto	Nos	2	1,510	3,020
1.11	3/4" Quick Coupling Brass Hydrant Valve With Clamp Saddle of Pipe Size	Nos	6	1,450	8,700
1.12	3/4" Quick Coupling Valve Brass Key with 3/4" Swivel elbow with 1" pipe connection assembly	Set	1	2,235	2,235
1.13	Rectangular Valve Box 12" Make: Carson Brooks/Rain Bird	Nos	12	3,800	45,600
1.14	Round Valve Box 10" Make: Carson Brooks/Rain Bird	Nos	6	1,450	8,700
1.15	Round Valve Box 6" Make: Carson Brooks/Rain Bird	Nos	2	570	1,140
Drip & Accessories					
1.16	Providing & fixing of HDL inline polytube having 16mm dia & 0.50 mtr spacing of dripper, 3.5/4LPH discharge having Brown in colour, Operating Pressure is 4Kg/cm2 with all necessary fittings like take off, gromet, connectors, tees, elbows, end caps etc as required and specified complete	Mtr	4,800	38	1,82,400
1.17	Supply and Fixing 9" MS Galvanised lateral stake for Drip Line/lateral to hold , straight and proper placed.	Nos	960	14	13,440
1.18	Supply and Fixing Line Flush Valve 63x50, 50 x 40	Nos	6	275	1,650
1.19	Supply componets Take Off Connection and fixing it (Clamp Saddle + PVC Riser + Threaded Tee, Hose Collar)	Nos	110	225	24,750
Filtration Unit					
1.20	Providing of Self cleaning Screen Filter having capacity of 20-30 m3/h - Amiad Israel	Nos	1	1,20,000	1,20,000
Pump Station					
1.21	Providing, Installing , Fixing of Monoblock/Openwell submersible Pump Station giving flow of 3.5 lps at 32-35 m head , with NRV, control valve, control panel mounted on a common base skid with required size of 100 ltr pressure vessel with all required accessories. etc complete	Set	1	55,000	55,000
1.22	Quick Pressure Relief Valve 2" - Hydraulic Diaphragm Type	Nos	1	20,500	20,500
Automation Equipment					
1.23	Providing, installing, testing and commissioning of Burrial Irrigation Automation Cable 14/1 AWG Tin coated copper conductors,	Mtr	940	240	2,25,600
1.24	PVC conduit Pipe complete 32 mm / 8 kg/cm2	Mtr	300	90	27,000
1.25	Providing , Installation , testing and commissioning of 8 Station Controller The ESP-TM2 Controller is designed to be an easy to use, program-based controller with the familiar ESP user interface, a large LCD screen and universal icons on both the controller overlay and the LCD. NEW large back-lit LCD display for improved visibility in low-light and direct sunlight conditions, Familiar, easy to navigate user interface having Rain sensor input with bypass capability, Master valve/pump start circuit, scheduling features like Nonvolatile (storage memory, Electronic diagnostic circuit breaker, Remote accessory port for approved accessory devices, Program based scheduling with 3 individual programs and 4 independent start times per program for 12 total start times.It should have Watering schedule options like Custom Days of the week, ODD or EVEN calendar days, or Cyclic (every 1 – 30 days, Manual Watering option for all stations, a single station or an individual program, Seasonal Adjust applied to all programs or an individual program, Delay Watering up to 14 days (applies only tostations set to obey Rain sensor),Sensor bypass for all programs or for individual stations, Adjustable delay between stations,Master Valve on/o by station, automatic short detect with station	No	1	28,500	28,500

BILL OF QUANTITIES

SUB SECTION

6.1 c IRRIGATION AND HORTICULTURE WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total Amount (In Rs.)
1.26	Supply Installation Testing & Commisioining of Solenoid Valve PGV 1.5" Size , with External/internal manual bleed allows for quick and easy activation at the valve, Double-beaded diaphragm seal design ensures leak-free performance, Captive bonnet screws eliminate the possibility of lost parts during disassembly, Flow control maximises efficiency and prolongs the life of the system, Triple-tool bonnet screws are compatible with standard or Phillips screwdrivers as well as a nut driver,with globe configuration for convinient placement, Encapsulated solenoid with captive plunger used on every Hunter valve provides hassle-free service , Flow 75 to 570 l/min, Recommended pressure range: 1.5 to 10 bar, Temperature rating: 66°C, 24 VAC solenoid,350 mA inrush, 190 mA holding, 60 Hz, 370 mA inrush, 210 mA holding, 50 Hz	Nos	7	4,600	32,200
1.27	Supply Installation Testing & Commisioining of Solenoid Valve PGV 1.0" Size , with External/internal manual bleed allows for quick and easy activation at the valve, Double-beaded diaphragm seal design ensures leak-free performance, Captive bonnet screws eliminate the possibility of lost parts during disassembly, Flow control maximises efficiency and prolongs the life of the system, Triple-tool bonnet screws are compatible with standard or Phillips screwdrivers as well as a nut driver,with globe configuration for convinient placement, Encapsulated solenoid with captive plunger used on every Hunter valve provides hassle-free service , Flow 75 to 570 l/min, Recommended pressure range: 1.5 to 10 bar, Temperature rating: 66°C, 24 VAC solenoid,350 mA inrush, 190 mA holding, 60 Hz, 370 mA inrush, 210 mA holding, 50 Hz	Nos	1	3,800	3,800
1.28	Supply and fixing of direct bury -on wire connector with strain relief , with waterproof silicon sealant.	Nos	25	300	7,500
1.29	Providing, installing, testing and commissioning of Voltage Stabilizer	Nos	1	5,500	5,500
	Total carried over to Summary				12,88,215
Horticulture Work					
	<p>General Notes for Horticulture work: -</p> <p>1) Variety of species shall be as per proposed planting palette in drawing.</p> <p>2) Work shall be carried out as per BOQ nomenclature and as mentioned in detail specification. No extra shall be paid other than BOQ items.</p> <p>3) Sample and mock-up shall be carried out as suggested by Engineer-in-charge for review and approval.</p> <p>4) Work shall be carried out as per approved sample and mock-up.</p> <p>5) Maintenance for 3 years after substainal hand over is inclusive in quoted rate.</p> <p>6) Rates of mortality up to maintenance period to be inclusive, in that condition contractor has to replace the plant of same specification with out any extra cost.</p> <p>7) For all kind of plantation, rate shall be inclusive of all necessary fertilizers, natural compost, vermi compost, pesticides, termite, neem cake, neem oil, castor oil, coco peat, perlite, etc.</p> <p>8) Soil hips anywhere at the site shall be stored with the constant spraying of water or covering with suitable net or other material as per the recommendation of environmental consultation to reduce air pollution through soil dust.</p> <p>9). All Horticulture works is included with 3 years of maintainace. 20 % of overall Amount of planation shall be retained after initial planation work as per GFC. and retained amount to be equally relaesed at every month till 3 years of mainatainace period after performing successfull mainatainace. In case of contractor to fail to execute the mainatainace, Retained amount will not</p>				
1	<p>Garden Soil Filling</p> <p>The good quality garden soil shall be obtained from outside which can be useful for all plants. Laying of soil shall be done in proper slope as mentioned in drawing including watering, compacting and dressing etc. complete, as directed in specifications and by engineer in charge.</p>	Cum.	1,838	891.00	16,37,658
2	<p>Tree Plantation</p> <p>Supplying, transporting, hoisting and planting well grown species for trees of required height and species as per selection given by Architect. Tree shall be planted in ready excavated pit/ tree pit with hume pipe of required size without damaging any primary roots. Rate shall be inclusive of supplying of tree, loading, transporting, unloading, planting by any means (manual/ mechanical), watering, pesticides, fertilizers, anti termite treatment, maintaining, replanting (if plant will be died) up till maintenance period, pesticides etc. Pesticides (Neem cake or similar as specified and approved by Engineer-in-charge) shall be used in recommended proportion. Rate shall be also inclusive of tripod type tree guard be made out of 3 no 50mm dia and approximate 1.5 mt long Eucalyptus/ Cedar stakes and tied to steam of planted tree with rubber tie/ patta of size 30mm x 10mm in twisted pattern as per drawing. Tree guard shall be installed vertically out side the root ball properly so tree grown in upright position. Tree guard shall be maintained up to the tree become well set and as directed by architect and Engineer-in-charge. After completion of maintenance period, tree guard shall be property of Contractor. Rates of mortality up to maintenance period to be inclusive, in that condition contractor has to replace the plant of same specification with out any extra cost. Cost of excavation or tree pit shall be paid in relevant tender item.</p> <p>Tree varieties shall be as per proposed planting pallette.</p> <p>Rate are inclusive of maintenance for period of 3 years from date of substantial handover.</p>				

BILL OF QUANTITIES

SUB SECTION

6.1 c IRRIGATION AND HORTICULTURE WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total Amount (In Rs.)
	<p>1. At the time of procurement, approximate 3.0 Mts minimum height Tree stock shall be container grown, or bur lapped with geo fabric and grown in sandy beds.</p> <p>2. Trees shall have a minimum girth of 150mm unless otherwise specified in the planting schedule (girth/ trunk circumference shall be measured at 1.0m above the soil level, excluding container height).</p> <p>3. The tree trunk shall be free of any damage caused by insect, fungal or viral infestation and free from any physical damage or scarring.</p> <p>4. The tree trunk shall be straight and vertical. There should not be any abrupt changes in girth of the trunk.</p> <p>5. The form or shape of the crown shall be typical for the specimen of the species. The crown shall not be significantly deformed by wind, pruning practices, pests or other factors.</p> <p>6. Trees shall be single stemmed unless otherwise specified.</p> <p>7. Main branches shall be well spaced with a minimum of four branches at planting.</p> <p>8. The size, colour and appearance of leaves shall be typical for the time of year and stage of growth of the tree species. Leaves shall not be damaged or discoloured.</p> <p>9. The root system shall be free of injury from biotic (insects, pathogens) infestation and shall be uniform throughout the soil mix or growth media. Container grown nursery stock shall have a well-established root system reaching the sides of the container to maintain a firm ball when the container is removed.</p>				
2.1	Tree Plantation - Category T1 (As per drawing)	Each	82	3,755.00	3,07,910
2.2	Tree Plantation - Category T2 (As per drawing).	Each	423	3,907.00	16,52,661
	<p>Shrub/ Hedge/ Ground cover plantation or other plants (S1)</p> <p>Supplying well grown shrub plants/ Hedge plants and ground cover plants or other plants of specified species and height proposed planting pallette in specification and planting in planter/ on land with good soil, manure, sludge, pesticide & insecticide/ anti termite, fertilizer etc. Plants shall be disease free and fungus free in polythene bag. Plastic bags or pots shall be removed carefully and soil around the roots shall not be dropped or disturbed much. Shrub shall be plant @ average c/c depend on type of species as per palette. Work shall be done as shown in the drawing or as directed and approved by architect and EIC. The ground coverage shall be dense and uniform throughout the planting area. Rates of mortality up to maintenance period to be inclusive, in that condition contractor has to replace the plant of same specification with out any extra cost. Rate shall be for in to in area of planter or ground area in square meter. Rate shall be for cost of shrub, loading, transporting, unloading, planting, pesticides, fertilizers, anti termite treatment, watering, maintaining, replanting (if plant will be died) etc but excluding the cost of soil, manure, sludge and it shall be paid in relevant tender item.</p> <p>Shrub plants/ Hedge plants and ground cover plants varieties shall be as per proposed planting pallette.</p> <p>Rate shall be inclusive of maintenance for period of 3 years from date of substantial handover.</p>				
	<p>1) Shrubs and ground covers shall be twin or multi-stemmed, full and bushy. The form or shape of the plants shall be typical to its species. Height of the shrubs/ hedge and ground cover shall be as per proposed planting pallette in specification.</p> <p>2) The size, colour and appearance of leaves shall be typical for the time of year and stage of growth. The shrubs will be supplied in plastic bags with well developed root system. Petioles shall be cut clean and symmetrically at the trunk on any old leaf bases remaining.</p> <p>3) Prior to transporting for transplanting, all suckers, flowering and fruiting parts and approximately thirty percent of fronds shall be removed. The remaining fronds shall be sprayed with an anti- desiccant 24 hours prior to lifting. The fronds are to be lifted to enclose and protect the growing tip, wrapped in Hessian and securely tied in position.</p> <p>The roots shall be balled and the Hessian securely tied. The root ball is to be secured using wire mesh and Hessian to contain the soil and retain maximum soil moisture.</p>				
3	SHRUBS - approximate @ 450mm c/c both direction - (As per drawing)	Sqm	575	431.00	2,47,825
4	SHRUBS - approximate @ 300mm c/c both direction - (As per drawing)	Sqm	361	945.00	3,41,145
5	SHRUBS - approximate @ 200mm c/c both direction - (As per drawing)	Sqm	487	1,251.00	6,09,237
6	GROUND COVERS - approximate @ 200 mm c/c both direction - (As per drawing)	Sqm	403	1,747.00	7,04,041
7	<p>Supplying, transporting, hoisting and planting well grown bamboo plants (B1) of specified species and height as per proposed planting pallette in specification and planting in planter/ on land with good soil, manure, sludge, pesticide & insecticide/ anti termite, fertilizer etc. Plants shall be disease free and fungus free in polythene bag. Plastic bags or pots shall be removed carefully and soil around the roots shall not be dropped or disturbed much. Work shall be done as shown in the drawing or as directed and approved by architect and EIC. Rates of mortality up to maintenance period to be inclusive, in that condition contractor has to replace the plant of same specification with out any extra cost. Contractor shall provide vertical support for bamboo as per site condition during plantation and as approved by Engineer-in-charge. Rate shall be for cost of plant, loading, transporting, unloading, planting, pesticides, fertilizers, anti termite treatment, watering, support, maintaining, replanting (if plant will be died) etc but excluding the cost of soil, manure, sludge and it shall be paid in relevant tender item. Rate shall be inclusive of maintainace for period of 3 years from date of substantial handover.</p> <p>Bamboo plants varieties shall be As per drawing.</p>	Sqm	51	2,759.00	1,40,709

BILL OF QUANTITIES

SUB SECTION

6.1 c IRRIGATION AND HORTICULTURE WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total Amount (In Rs.)
8	<p>Providing and laying Selection no. 1 doob grass/ Neelgiri/ Mexican grass/ Paspalum (Ghoda grass) turf and brought to site as carpet with earth 50mm to 60mm thickness on prepared ground with proper level and ramming with tools wooden (Dhurmos) and than rolling the surface with light roller make the surface smoothen and light watering with sprinkler and maintenance more till the grass establish properly, as per direction of officer-in-charge. Rate shall be inclusive of surface preparation/ rough dressing/ fine dressing/ ploughing/ clod breaking of the ground and anti-termite Treatment (vertically and horizontally) with the use of approved pesticides (neem cake oil or similar as suggested and approved by EIC) as per specification and as per manufacturer's recommendation, fertilizers, but excluding the cost of good soil which shall be paid in relevant tender items.</p> <p>Rate shall be inclusive of establishment of lawn, gap filling between turf pecies and application of roller and maintenance for period of 3 years from date of substantial handover.</p> <p>All steps have to followed by contractor as specified in specification for proper establishment of lawn. From surface preparation to after lawn establishment, all steps are inclusive in this item.</p>	Sqm	1,703	600.00	10,21,800
Total carried over to Summary					66,62,986
TOTAL OF SUB SECTION 6.1 c IRRIGATION AND HORTICULTURE WORKS					79,51,201

BILL OF QUANTITIES

SUB SECTION

6.1 d PLUMBING WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total Amount (In Rs.)
WATER SUPPLY, PLUMBING AND SANITARY FITTINGS					
1	Providing and laying in trenches galvanised mild steel tubes (Medium Grade) of the following nominal bore, and tube fitting (Earthwork in trenches to be measured and paid separately) (E) 65mm	RMT	10	724	7,238
2	Constructing masonry Chamber 45x45x75 cm inside, in 150mm thick brick work with common burnt clay non modular bricks, in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with 30x30 cm C.I. cover and frame, 150mm thick RCC top slab in 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 20mm nominal size), including necessary 2.73 Cu.M excavation, 100mm thick RCC foundation concrete in 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40mm nominal size) and inside 12mm thick plastering with cement mortar 1:3) 1 cement : 3 coarse sand), complete.	Each	1	7,570	7,570
3	Providing and fixing gun metal gate valve with C.I. wheel of aproved quality (screwed end): 25mm nominal bore	Each	1	622	622
4	Providing and fixing gun metal non-return valve of approved quality (screwed end): 18.19.1 - 25 mm nominal bore - Horizontal	Each	1	953	953
5	Providing and fixing 35mm diameter PVC pipe (sleeve) of 10kg/cm ² conforming to IS: 4985 with both end plain as a sleeve in the roof slab including jointing with metal reinforcement using G.I. wires including cost of all materials.	Each	0.40	118	47
6	Providing laying and jointing in true line and level 25mm diameter U.P.V.C. Pipe (SCH-40) for cold water including fittings as approved by Engineer In Charge. Pipe shall be fixed on the wall with the help of clamp at every two meter C/C or shall be concealed as directed including necessary fittings etc. including testing of pipe and joints and fixing the same with adhesive solvent, including cost of all materials.	RMT	11	92	1,010
7	Providing and fixing concealed center point to wall ceiling & floor CPVC (SDR 13.5) pipe having National Sanitation Foundation (NSF) seal for potable water of following dia. Nominal bore tube fittings and clamps including making good the wall, ceiling and floor etc. complete. [B] 20 mm (From Terrace to Roof Tank & Roof Tank to Kitchen Sink))	RMT	8	205	1,640
8	Providing and fixing ball cock of approved quality as directed. (A) Copper Metal (i) 25mm diameter.	Each	2	133	266
9	Providing, erecting and fixing double coated ISI water tank (Loft Tank) of required capacity each with all necessary fittings and connectin etc. complete.	Litre	1,000	3.95	3,949
10	Providing and fixing Ø20mm Nominal bore chlorinated polyvinyl chloride (CPVC) Ball valves with CPVC ball valve, having pressure bearing capacity up to 7.0 kg/cm ² at 82°C, including cutting the pipes, solvent welding, complete as per the manufacturers standards and the direction of the Engineer-in-charge.	Each	11	323	3,550
11	Providing and fixing brass screw down stop tap. (B) 20mm dia.	Each	2	224	448
12	Providing and fixing 12mm diameter PVC water inlet connection conforming to IS specifications and shall be of standard pattern with nylon insulation of minimum 450 mm long with CP brass check nut at both the end and shall be able to withstand the testing pressure of 1 MPa (10 kg/sq.cm.) (for connection from angle cock to pillar cock). Make: Cera / Jaquar / Equivalent	Each	2	323	645
13	Providing and fixing 15mm diameter CP Brass pillar cock with swan neck spout (left / right) and aerator. Make: Cera / Jaquar / Equivalent	Each	2	3,022	6,043
14	Providing and fixing Stainless Steel AISI 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 without drain board - Size: 470 x 420mm bowl depth 178mm.	Each	2	2,810	5,619
15	Providing and fixing C.P brass waste for wash basin or sink (B) 40 mm diameter.	Each	2	90	180
16	Providing M.I. fisher union for wash basin (B) 40mm diameter	Each	2	89	177

BILL OF QUANTITIES

SUB SECTION

6.1 d PLUMBING WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total Amount (In Rs.)
17	Providing, laying and jointing in true line and level 40 diameter P.V.C (6 kg/cm ²) conforming to IS 4985 with one end plain and other end socketed & fittings of approved make for drainage system pipe line, pipe shall be shall be concealed in walls as directed including necessary fittings such as bends, shoes etc. including testing of pipes and joints and jointed with adhesive solvent cement including cost of all materials. Make: Astral / Finolex / Prince / Equivalent	RMT	2	327	654
18	Providing & fixing PVC SWR Nahni Trap as per IS: 14735 for drain - 100 mm diameter with jali of the following nominal diameter of self cleansing design with C.I. scread down or hinged grating including the cost of cutting and making good the walls / floors.	Each	2	571	1,142
19	Providing, laying and jointing in true line and level 110 diameter U.P.V.C (Type 'B') conforming to IS 13592-1992 with one end plain and other end socketed with rubber ring, & fittings conforming to ISI 14735-1999 if approved make for drainage system pipe line, pipe shall be jointed with each other with rubber lubricant, pipe shall be fixed on wall using of PVC clamp of the size 110 mm diameter X 149 mm length X 145 mm height at every 2000 mm center to center or shall be concealed in walls as directed including necessary fittings such as bends, shoes etc. including testing of pipes and joints with adhesive solvent cement including cost of all materials.	RMT	2	835	1,670
Total Carried Over to Summary					43,424
DRAINAGE AND SEWERAGE ITEMS					
20	Constructing brick masonry chamber for Underground C.I. Inspection Chamber and bends with bricks having crushing strength not less than 35 kg / cm ² in C.M. 1:5 (1-cement; 5-fine sand), with C.I. cover with frame (Light duty) 455mm x 610 mm 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 with 1:2:4 (1-cement; 2-coarse sand; 4-graded stne aggregate 20mm nominal size) foundation concrete 1:5:10 (1-cement; 5-coarse sand; 10-graded stone aggregate 40mm nominal size), inside plaster 15mm thick with cement mortar 1:3 (1-cement; 3-fine sand), finished smooth with a floating coat of neat cement on walls and bed concrete, etc complete. (ii) Inside dimensions 500mm x 700mm and 450mm deep for pipe line with one or two inlets.	Each	1	3,661	3,661
21	Providing and fixing cast iron steps of size 500mm x 150mm x 22.5mm and painting with two coats of anti-corrosive paint etc. complete.	Each	3	164	492
22	Providing and laying (To level or slopes) and jointing reinforced concrete light duty Non-pressure pipes I.S Class NP2 of the following internal diameter with collars and butt ends prepared for collar joints including testing of joints complete. (B) 150 mm diameter.	RMT	10	214	2,141
23	Providing and laying (To level or slopes) and jointing reinforced concrete light duty Non-pressure pipes I.S Class NP2 of the following internal diameter with collars and butt ends prepared for collar joints including testing of joints complete. (D) 300 mm diameter.	RMT	209	665	1,39,085
24	Constructing brick masonry manhole in cement mortar 1:4 (1 part cement : 4 parts coarse sand) with R.C.C. top slab with 1:1.5:3 mix (1 part cement : 1.5 parts coarse sand : 3 parts graded stone aggregate 20mm nominal size), foundation concrete in 1:4:8 mix (1 part cement : 4 parts coarse sand : 8 parts graded stone aggregate 40mm nominal size), with inside plastering of 12mm thick of cement mortar 1:3 (1 part cement : 3 parts fine sand) and making channels in cement concrete 1:2:4 (1 part cement : 2 parts coarse sand : 4 parts graded stone aggregate 20mm nominal size) - Inside size 900 x 800mm and 450mm deep including 500mm x 450mm C.I. horizontal grating with frame (medium duty) ; total weight of cover and frame to be not less than 38 kgs (weight of cover 23 kgs and weight of frame 15 kgs) with common burnt clay F.P.S. (non-modular) bricks of class 7.5	Each	6	13,996	83,979

BILL OF QUANTITIES

SUB SECTION

6.1 d PLUMBING WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total Amount (In Rs.)
25	Constructing brick masonry manhole in cement mortar 1:4 (1 part cement : 4 parts coarse sand) with R.C.C. top slab with 1:1.5:3 mix (1 part cement : 1.5 parts coarse sand : 3 parts graded stone aggregate 20mm nominal size), foundation concrete in 1:4:8 mix (1 part cement : 4 parts coarse sand : 8 parts graded stone aggregate 40mm nominal size), with inside plastering of 12mm thick of cement mortar 1:3 (1 part cement : 3 parts fine sand) and making channels in cement concrete 1:2:4 (1 part cement : 2 parts coarse sand : 4 parts graded stone aggregate 20mm nominal size) - Inside size 1200 x 900mm and 900mm deep including 500mm x 450mm C.I. horizontal grating with frame (medium duty) ; total weight of cover and frame to be not less than 116 kgs (weight of cover 58 kgs and weight of frame 58 kgs) with common burnt clay F.P.S. (non-modular) bricks of class 7.5	Each	2	28,559	57,117
Total Carried Over to Summary					2,86,475
CONSTRUCTION OF BORE WELLS AS PER IS:2800 PART-1					
26.00	Construction of 1 Bore well at site. The scope includes - Drilling of Bore Wells, Reaming of Bore holes, Lowering of Drop Line & Air Line up to water bearing zone, Compressed Air Cleansing up to availability of sand free discharge, Pipes, MS Clamps, MS Bore Plugs, MS Bail Plugs, Steel Bent Plates, Geohydrological Ground Water Investigation, Electrologging of bore holes, Chemical analysis of extracted water, Filling of Bore Holes with Clay, Submersible Bore Well Pumps, Control Panels, Cabes, Column Pipes/Perforated Column Pipe, etc complete to the entire satisfaction of the Engineer-in-charge, as per the below mentioned details:				
26.01	Drilling 250 / 300 mm dia. Pilot bore at site in all strata by mud flush direct rotary Rig from 0.00 mtr to 150 mtrs	RMT	150	672	1,00,762
26.02	Reaming of 250 / 300 mm dia. Bore hole to following bore hole including assembling, jointing, lowering of housing casing, strainer pipes and other assemble items with gravel packing and clay ball packing etc.				
26.03	550 mm dia. Bore hole from 0.00 mtrs to 150 mtrs.	RMT	150	410	61,518
26.04	Supply of Clay balls having size of 25mm to 50 mm.	CMT	11	910	10,008
26.05	Supply of gravel of selected size 4 mm to 10 mm.	CMT	16	2,456	39,296
26.06	Supply of Cement	M. Tonne	1	7,627	7,627
26.07	Cement Sealing	Job	1	16,061	16,061
26.08	Development of Tube Well: (A2) Lowering of Drop Line & Air Line: Lowering 100 mm dia Drop Line and 32 mm G.I. air line for development of each water bearing zone coming across the full depth of tubewell for each zone.	Job	1	31,005	31,005
26.09	(B1) Air Compressor: Development of Tubewell zonewise with 1100 CFM / 300 PSI (above depth of 150 Mtrs) air compressor up to availability of sand free discharge. The air compressor should run minimum for 6 (six) hours or up to availability of sand free discharge.	Job	1	26,870	26,870
26.10	Pipe & Bore Materials: Providing and fixing of 200mm dia ERW blank pipes as per IS:4270 of minimum 6.0mm thickness.	RMT	105	2,025	2,12,590
26.11	MS Clamps: Providing and fixing clamps made from MS plate with 3 holes on either side with nuts and bolts of standard make & suitable to 250mm dia pipe. Size: 900mm x 100mm x 16mm	Pair	1	2,363	2,363
26.12	MS Bore Plugs: Providing and fixing bore plug having 100 mm height made from M.S. plate with 3 holes at equal distance on circumference for nut & bolts type locking arrangement with nut, bolts & lock nuts of standard make etc. complete. (a) For 200 mm ERW Pipes (Thickness of plate is minimum 05mm for top also)	Nos	1	905	905
26.13	MS Bail Pugs: Providing and fixing MS Bail plug having length of 0.45 meter made from medium class pipe as per IS. Suitable for 200 mm ERW Pipes	Nos	1	984	984
26.14	Steel Bent Plates: Providing and fixing in place Steel Bent Plates suitable for 200mm ERW Pipes - Size: 150mm x 150mm x 6mm	Nos	59	78	4,616
26.15	Geohydrological Ground Water investigation (200mm dia pipe Deep Tube well with water sample)	Job	1	8,250	8,250
26.16	Electrologging of bore hole.	Job	1	16,499	16,499

BILL OF QUANTITIES

SUB SECTION

6.1 d PLUMBING WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total Amount (In Rs.)
26.17	Chemical analysis of water sample.	Job	1	707	707
26.18	Cables: Providing Flat Cable of the following size for the above mentioned submersible pump:				
	Size: 1 x 3 x 16 Sq mm	Rmt	85	470	39,969
26.19	Column Pipes/Perforated Column Pipe: Providing heavy duty G.I. Column Pipe/Perforated Column Pipe as per the requirement and as directed by Engineer in Charge threaded at both ends of 3 meters length each conforming to IS: 1239 (Part 1) with coupling at one end and thread protector at the other end. (A) 80mm NB Dia	Rmt	75	734	55,065
27.00	Supplying Electric motor driven Submersible Bore Well Pump Set for bore of 250 mm. dia. or more conforming to IS: 8034-1981 with wet type motor set conforming to IS: 9164-1981 of capacity about 60 H.P., 2900RPM operating on 3 phase, 400/440 Volts, 50 Hz, AC Supply, of discharge capacity 80 Cu. Mtr. / Hour at 120 meter head, having 7 Stages with 125 mm diameter Heavy Duty UPVC Column Pipe, Control cum Starter Panel (ATS) made from 16 G. CRCA sheet duly painted with epoxy power paint inside and outside with hinged doors and locking arrangement, consisting, of suitable switch of AC 23 duty with HRC fuses (Cat.III), starting and running contactors, overload relay, Automatic water level controller, Electronic timer with master timer CT operated Ammeter with selector switch, Voltmeter with selector switch, phase indicating lamps, single phasing preventer, water level guard, over load, start, run and stop push buttons, air cooled auto transformer with 60%, 70%, 80% tapping, Panel to be erected on angle iron frame grouted on wall as directed., contactors relays, timer, Accessories, Valves etc complete.	SET	1	4,42,297	4,42,297
	Total Carried Over to Summary				10,77,390
	TOTAL OF SUB SECTION 6.1 d PLUMBING WORKS				14,07,289

BILL OF QUANTITIES
SUB SECTION
6.2 - RESIDUAL ELEMENTS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
1	EARTH WORK & CARRIAGE OF MATERIAL				
	<p>Note:</p> <p>1) The method of excavation shall be approved by the Engineer in charge before execution.</p> <p>2) Excavation shall be carried out very carefully without damaging existing structures and surrounding if any.</p> <p>3) If required, the contractor shall provide stabilization by any means to protect the foundation of the existing structure and building without any extra cost.</p> <p>4) Rate shall include dewatering work (pumping out and removing slush) while execution in underwater condition if required.</p>				
1	<p>Excavation for all kinds of soil</p> <p>Earthwork in excavation for all kind of soil by any means including getting out the excavated soil, sorting and stacking of useful material, dressing of the sides, ramming of bottom, and disposal of surplus excavated earth for all lead within the site area at non objectionable place and lift up to 1.5 mt depth, including dewatering and working in or under water and /or liquid mud, including pumping out water/slush as required etc complete as directed by engineer-in-charge. In case of excavation for pipe, cable, any services trenches, making base for road work, pavement works walkway, etc, proper slop and camber by any means shall be maintain and dressing of the sides shall be made as per requirement and as directed by engineer-in-charge.</p>	Cum	135	149.00	20,115
	Total Carried Over to Summary				20,115
2	PLAIN & REINFORCEMENT CEMENT CONCRETE WORK				
	<p>Note -</p> <p>1) All types of shuttering shall be designed by the contractor and submitted to the Engineer in charge along with design calculations (if required) and approved by the Engineer in charge. However, the Stability and compatibility of shuttering shall be the responsibility of the contractor. Shuttering shall be executed as per the approved shop drawing. No extra payment shall be made for the above.</p> <p>2) Rate shall be inclusive of dewatering work (pumping out and removing slush) while execution in underwater conditions. The contractor shall not claim for dewatering if required.</p> <p>3) Rate shall be inclusive of providing grooves, drip moulds, pockets, cut-outs, etc., and co-ordination of insert sleeves, insert plate (cost of insert sleeves/ plate shall be paid separately), encasing if any wherever required while casting for all level all height.</p> <p>4) If required concrete batching and mixing plant of minimum 60 cum/hr capacity shall be set up by contractor.</p> <p>5) Mould release agent of approved make shall be used at every repetition on formwork material.</p> <p>6) Shuttering shall be compatible with self-compacting concrete (SCC) work, wherever required.</p> <p>7) Shuttering shall be compatible with heavy/bulky RCC elements, wherever required.</p>				

BILL OF QUANTITIES
SUB SECTION
6.2 - RESIDUAL ELEMENTS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
2	<p>Concrete (PCC) of grade - M15 Providing and laying in position Controlled cement concrete /Ready mix concrete/ batch mix concrete of cement concrete (PCC) of grade - M15 cement concrete work, using cement content as per approved design mix (Min cementitious level as per latest IS 456 shall be maintained) manufactured in fully automatic batching plant and transported to the site of work in transit mixer for all lead having a continuous agitated mixer, for reinforced cement concrete work including pumping from transit mixer to site of laying; cost of admixtures in recommended proportions as per IS: 9103 to accelerate, retard the setting of concrete, improve workability without impairing strength and durability; finishing, compacting, vibrating, curing, dewatering (if required), etc, including the cost of form work and removal of formwork, dewatering (if required), etc. complete for all level, all height/ depth and for all lead and lift and as directed by the Engineer.</p>	Cum	42	4,290.00	1,80,180
	<p>Providing and laying in position Exposed Finish controlled cement concrete/ Ready Mix concrete/ batch mixed concrete for reinforced cement concrete work as per design mix of specified grade using graded black trap stone aggregates of maximum 20mm nominal (down graded) size including fine aggregates conforming to latest IS 383 with minimum cement content (without fly ash) for durability (followed as per IS-456 and technical specification) shall be followed as per approved design mix for all elements of any shape and size, at all places and heights/ depths including transporting by transit mixer for any lead having continuous agitated mixer, laying of concrete to site by any means i.e like pumping, tower crane or boom placer, or any other etc., vibrating, finishing and curing etc. and including admixtures in recommended proportions as per IS 9103 to accelerate, retard setting of concrete, to improve workability without impairing strength and durability as per direction of Engineer-in-charge. Rate shall be inclusive of providing grooves, drip moulds, ghis, pockets, cutouts etc. and labour for insert sleeves if any wherever required while casting.</p>				
	<p>Rate shall be inclusive of shuttering and centering/ formwork for exposed finish concrete with pattern, lift charges, scaffolding, staging, propping, etc and tie rod assembly of PVC cone and coil on both sides of the concrete walls, filling the same with non-shrink grout or polymer mortar and excluding cost of steel reinforcement. Full height shuttering with a single pour system shall be followed. Contractor to prepare the shuttering drawing as per the shuttering pattern given by the architect. All concrete work shall be exposed finish (without any honeycomb). Contractor shall use the mould release agent of approved make before use of the shuttering material every time. A sample of each element shall be prepared with and without a shuttering pattern at the location as per the instructions of the Architect and SRFDCL Engineer in charge for review and approval before mass execution. if instructed for the exposed finish shuttering, the contractor is to follow the detailed technical specification for exposed finish shuttering and concrete given in the tender package.</p>				
3	Concrete of M 30 grade	Cum	108	7,447.00	8,04,276
4	<p>Providing and fixing Thermo-Mechanically Treated bars (Fe 550 D) Reinforcement for R.C.C. work including transporting to the work site, straightening, cutting, bending, cranking, fabricating to required shape, placing/ lowering in position by suitable method, and tying / binding the system (with GI wire) all complete for all leads and lifts, all levels, all floors, all heights/ depth, etc complete and as directed by the Engineer in charge. Measurement will be made on the length basis and converted into weight by using standard co-efficient (rolling margin's and wastage shall not be paid). No separate payment shall be made for laps, chairs, pins, lifting hooks, spacers, and binding wire.</p>	Kg.	24314	94.00	22,85,516

BILL OF QUANTITIES
SUB SECTION
6.2 - RESIDUAL ELEMENTS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
	Providing and fixing 110 mm dia PVC pipe having capacity of 6 Kg/cm ² with ISI mark of required length as shown in the structure drawing wherever pipes pass through walls as weep hole before concreting for all level/ all depth/ height. All pipes shall be accurately cut to the required sizes, laid as per drawing, kept in the position while laying reinforcement and shuttering, sleeves shall not get displaced while concreting, and burrs removed before laying. Open ends of the pipe shall be closed as the pipe is installed to avoid clogging while concreting. At one side of pipe, SS 304 mesh shall be placed to protect filled soil. Rate shall be inclusive of pipe and SS 304 mesh. Item shall not be used for diaphragm wall construction. Actual installed length of pipe shall be measured for payment.				
5	PVC sleeve - Up to 110 mm Diameter	Rmt	9	389.00	3,501
	Total Carried Over to Summary				32,73,473
3	WATERPROOFING WORK				
	Note:- 1) The Contractor shall repair the concrete elements by injection grouting of suitable non-shrink grout and other suitable methods in case of defective concreting of retaining walls, water tanks, slabs, beams, etc., for which no extra costs shall be payable. 2) Rate shall be inclusive of surface preparation, repairing, injection grouting, saw cutting of construction joints and filling with patch repair mortar, making polymer mortar/Polymer CC fillets at horizontal as well as vertical corners, etc complete. The rate shall be inclusive of testing of elements and the system before and after waterproofing application. 3) The latest technical system/product shall be adopted at the time of execution.				
6	Planter waterproofing (screed + Drain board) Supplying and laying M25 grade vibrated concrete screed (admixed with water proofing compound conforming to IS: 2645 and approved by the Engineer-in-charge) in proper slope and gradient including saw cutting (if required), making angle fillet of 50mm x 50mm at the corners/Junction using M25 grade concrete and filling the grooves/joints/junctions (internal& external) with PU sealant (minimum 20 mm depth over PE backer rod). If Screed concrete shall be laid over on existing concrete surface/existing laid stone surface, a bonding agent shall be applied before laying of concrete. After the laying of the required thickness screed, polypropylene HDPE dimpled drain board (with inbuilt geo textile drainage membrane of 100 gsm at top) shall be laid, with a minimum overlap of 100 mm, based on soil characteristics and height of soil overburden. Cost includes all material, labour, T&P, and wastage involved as mentioned in the item. Actual volume of laid concrete shall be measured for payment without considering wastage	cum	26	6,368.00	1,65,568
7	12 to 15 mm thick water proof Plaster Providing and laying 12 to 15 mm thick water proof single coat smooth / wired finish cement plaster on sides of masonry work / block work / RCC work, in any shape, in CM 1:3 (1 cement : 3 fine sand) and water proofing compound of approved make in proportions recommended by the manufacturer, finishing the surface wired finish/ smooth finish with a floating coat of neat cement slurry for all floors, all height including hacking to RCC surface, scaffolding, curing etc. complete as directed by engineer-in-charge.	Sqm	322	184.00	59,248
	Total Carried Over to Summary				2,24,816

BILL OF QUANTITIES
SUB SECTION
6.2 - RESIDUAL ELEMENTS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
4	PAINTING/POLISHING WORKS				
	<p>Note:-</p> <p>1) All adhesives, sealants & paint shall be water based, with low VOC with acceptable VOC content as per Green Building Norms requirements and lead free.</p> <p>2) Paint shall be applied after thoroughly brushing the surfaces, free from mortar dropping and other foreign matter, preparing the surface even and sand papered smooth etc, after applying every coat of putty and primer complete.</p> <p>3) Contractor shall furnish warranty paper, wherever applicable.</p> <p>4) If necessary more coats shall be applied till the surface presents a uniform appearance without any extra cost.</p> <p>5) Paint shall be applied with any means (i.e. brush, roller, spray etc)</p> <p>6) Contractor shall prepare sample of minimum three shades as suggested by engineer in charge for approval.</p> <p>7) The rate shall be applicable for all floor, all level, all height by any means of scaffolding.</p>				
8	<p>Acrylic emulsion paint with primer - Exterior grade</p> <p>Providing and applying 100% Acrylic Smooth exterior paint with exterior primer of Two or more coats of paint including required number of priming coat of exterior primer as per manufacturer's specification of approved make and shade, having VOC (Volatile Organic Compound) content less than 50 grams/ litre of required shade over any surface etc complete for all floors all heights all levels. Exterior paint and primer shall have minimum 7 years warranty.</p>	Sqm	2	112.00	224
9	<p>Stain-repellent transparent coating - For exposed concrete work</p> <p>Providing and applying (solvent/ water based), low VOC, breathable and biodegradable, water, oil, and stain-repellent transparent fluorocarbon-based coating with anti-graffiti properties (suitable product according to natural stone, exposed concrete work) of approved make having fluoro carbon-based nanotechnology at all heights & leads and wherever instructed by Engineer-In-Charge. The treatment shall be in two coats wet-on-wet or as recommended by the approved manufacturer including preparation of surfaces by cleaning, curing, protecting, scaffolding, etc complete. The rate includes the cost of all materials, their application by specialized applicators by spray coating with an airless sprayer, cleaning the substrate of all laitance, construction dust, contaminants, scaffolding, labour, etc., all complete and at all levels, leads and heights as per particular specification & directions of Engineer-in-Charge. Guarantee Bond in the prescribed proforma shall be executed by the contractor for the satisfactory performance of the application for 5 years. The look and feel of the natural stone surface, and exposed concrete shall not be affected by coating.</p>	Sqm	315	171.00	53,865
	Total Carried Over to Summary				54,089

BILL OF QUANTITIES
SUB SECTION
6.2 - RESIDUAL ELEMENTS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
5	METAL WORK				
	<p><i>Note -</i></p> <p>1. Contractor shall prepare shop drawing base on concept design/ drawing for any type of fabrication work and get approved. Contractor shall prepare mock-up/ prototype (as suggested) as per approved shop drawing for approval. Work shall be carried out as per approved shop drawing, approved mock-up/ prototype and as suggested by Engineer in charge.</p> <p>2. Rate shall be for all floor, all level all height.</p> <p>3. The rate shall include cost of all types of fasteners (ETA approved) to be used for fixing.</p> <p>4. Structural stability shall be responsibility of contractor for all kind of metal work.</p> <p>5. All elements shall be factory fabricated and finished, only final finishing to be made on site with all precautions.</p> <p>6. Contractor shall coordinate all services work (cut-outs and provisions) in metal work. All cut-out and services provisions shall be finished at factory/ work shop.</p> <p>7. contractor shall provide PVC/ nylon seprator, where two different metals connect to avoid galvanic reactions.</p>				
10	<p>Structural steel work - Fabrication works - with paint</p> <p>Providing, fabricating, assembling, hoisting, erecting and fixing in position structural steel work at all heights/ all levels/ all shapes & sizes with all leads & lifts using any type of MS section like rolled steel sections, hollow sections, plates, chequered plates, bar, sheet, rod, threaded bolt, railing etc. all confirming to latest relevant IS codes for the metal elements i.e. cycling channeling, window grill, transom bar, bright bar in wooden door - window frame, railings, gates, grills, bracings, foundation plate & bolt, support at truss system, truss, purlin, rafter ,cleat, platforms, brackets, fencing pole, platform, trench cover, flag fixing sleeve pole, garbage box, signage pole, service elements, Jali, clamp, logo, metal dustbin as per design intent etc. including straightening, cutting, bending, profile cutting, embossing, bolting and welding, eatching (if required) the members all as per structural drawings and as per detailed specifications (for materials & workmanship) including profile cutting, smooth grinding, machining of edges/ faces, necessary welding (electric arc welding) for required weld lengths and sizes, machine drilling of holes for joining/ anchoring/bolting, necessary arrangements of templates to keep the foundation bolts in position dry sanding, degreasing (wet cleaning) & preparation of rust-free surface manually or mechanically, metal putty to make the surface even and smooth, necessary scaffolding/ staging, anchor fasteners,extra for bending elements for fixing etc complete. Incase of Metal dustbin, openable MS Shutter shall be with invisible self-closing hinge of required capacity and locking arrangement inside the shutter as per design intent. Contractor shall prepare mock-up of any element wherever required as directed by the Engineer-in-charge.</p>	Kg.	394	158.00	62,252
	<p>Contractor shop/ fabrication prepare shop drawing and get approved. The fabrication work shall start only after approval of the fabrication drawings. Fabrication shall be in a perfect Architectural workmanship manner and as provided in Section V & VI of IS 800 & IS 7215. Contractor shall responsible against stability, safety etc all complete</p> <p>The rate shall include for applying (on all surfaces of MS member) two or more coats PU paint (DFT min 40 micron per coat) of approved make and shade over two coat (DFT min 50 micron per coat) of anti corrosive epoxy base primer for PU paint, as per manufacturer's specification, anchor fastener etc all complete.</p>				

BILL OF QUANTITIES
SUB SECTION
6.2 - RESIDUAL ELEMENTS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
11	Extra charges for providing hot dip galvanizing work conforming to IS 4759/2629/2633 with a zinc coating of 610 GSM thickness on any type of MS sections for various elements like Dustbins, Railing, Handrail, gate, grill, platform, trench cover, flag fixing sleeve pole, garbage box, signage pole, Street furniture and similar works etc. made for all locations, heights, and levels as per the drawings and as instructed by the Engineer-in-Charge. The rate includes surface preparation by shot blasting or acid washing prior to hot dip galvanizing, as well as all necessary labour, tools, and machinery (sample to be approved). The weight of the steel sections before galvanization shall be measured for payment without considering any wastage. A sample and mock-up shall be prepared for approval by the Engineer-in-Charge before mass execution.	Kg.	394	58.00	22,852
Total Carried Over to Summary					85,104
6	EXTERNAL DEVELOPMENT WORK				
	<p>Note -</p> <p>1) Stones shall be free from cracks, lines, stains, white spots of efflorescence and even in shade for all kind of stone work.</p> <p>2) Stones shall be selected and sorted for uniform colour, figure and thickness and approved by Engineer in charge prior to procurement.</p> <p>3) Stone shall be from same lot and/ or source (stone quarry) for same kind of work and as approved by Engineer in charge.</p> <p>4) Contractor shall apply Stone Impregnation primer/ sealer coat on back side and all edges (after cutting and finishing of the stone as per size) of stones of approved make. Stone Impregnation primer/ sealer coat shall be of water based with pH value 7 to 10 in minimum two coat as per manufacturer's specification and as directed by Engineer in charge. No extra shall be paid for the same.</p> <p>5) Contractor shall prepare and submit shop drawing for all kind of stone work with sub base/ framing work/ fixing arrangement/ joinery with all required fasteners and get approval from Engineer in charge.</p> <p>6) Mock up/ sample shall be prepared as per approved shop drawing and get approved by Engineer in charge before execution of work.</p> <p>7) All adhesives and sealants shall be with low VOC and lead free with acceptable VOC content as per Green Building requirements.</p> <p>8) Stone work shall be carried out for all floor, all level, all height, all places including loading, unloading, stacking, transporting, hoisting, erecting by any means (mechanical or manual).</p>				
	<p>9) All type of stones shall be cut to size with help of with water jet cutting/ laser cut/ CNC machine according to the design and shape for best workmanship as per shop drawing.</p> <p>10) Granite shall be mirror polished/ flame finished/ sand blasted/ river wash finish or other as per specified.</p> <p>11) All type of stone/ stone elements shall be factory cut and factory finished. Finish on any stone shall be as per satisfaction of Engineer in charge. If required, final finish/ touch-up shall be executed at site as per direction of Engineer in charge.</p> <p>12) Structural stability of solid stone work shall be responsibility of contractor.</p> <p>13) Contractor shall make necessary provision for any services cut-out/ other required provision, co-ordinate with all services work and making good etc complete.</p> <p>14) All visible surfaces of stone shall be same finished.</p>				

BILL OF QUANTITIES
SUB SECTION
6.2 - RESIDUAL ELEMENTS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
12	<p>Kota Stone - For treads/copping/seating - fixing with Cement Mortar</p> <p>Providing and laying machine-cut Kota stone 40 mm thick any type of Polished/ Textured (i.e. river wash finish, leather finish, linen finish, canvas finish etc) finish Kota stone in a single piece of any shade (uniform), any size, and any shape in treads of steps, coping and seating, etc as per the drawings. Kota stone slab having pencil corner and same polished at the exposed edge in even and uniform thickness and laid over upto 20 mm thick base of cement mortar 1: 6 (1 cement: 6 coarse sand)/ suitable adhesive as per manufacturer specification, and jointed (paper joint) with grey/ white cement slurry mixed with pigment to match the shade of the slabs, including finishing, rubbing, curing, polishing, cleaning, protection, scaffolding, wastage, etc. all complete for all levels, all floor, all height, and as directed by the Engineer-in-Charge. The joint between the tread and riser shall be finished as per the drawing.</p> <p>The rate shall be inclusive of Kota stone (as per the approved sample), fixed with cement mortar bedding/ adhesive, cement slurry, matching pigment, all labour, etc complete. The contractor shall arrange loose Samples for approval from the Engineer-in-Charge before mass execution.</p> <p>The actual laid area of the Kota stone shall be measured for payment without considering any wastage.</p>	Sqm	63	1,532.00	96,516
13	<p>Kota Stone - For risers of steps, dado etc. or similar - fixing with cement mortar</p> <p>Providing and laying machine-cut Kota stone 25 mm thick any type of Polished/ Textured (i.e. river wash finish, leather finish, linen finish, canvas finish etc) finish Kota stone in a single piece of any shade (uniform), any size, and any shape in the risers of steps, dado or similar etc. as per the drawings. Kota stone slab having pencil corner and same polished at the exposed edge in even and uniform thickness and laid in any pattern fixed on any type of leveled surface with approximate 12 mm thick (average) cement mortar 1:3 (1 cement : 3 coarse sand)/suitable adhesive as per manufacturer specification, and jointed (paper joint) with grey/ white cement slurry mixed with pigment to match the shade of the slabs, including finishing, rubbing, curing, polishing, cleaning, protection, scaffolding, wastage, etc. all complete for all levels, all floor, all height, and as directed by the Engineer-in-Charge. The joint between the tread and riser shall be finished as per the drawing. The rate shall be inclusive of Kota stone (as per the approved sample), cement mortar for fixing/ adhesive, cement slurry, matching pigment, all labour, etc complete. The contractor shall arrange loose Samples for approval from the Engineer-in-Charge before mass execution.</p> <p>The actual laid area of the Kota stone shall be measured for payment without considering any wastage.</p>	Sqm	32	1,286.00	41,152

BILL OF QUANTITIES
SUB SECTION
6.2 - RESIDUAL ELEMENTS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
14	<p>Kota Stone - For risers of steps, dado etc. or similar - fixing with cement mortar</p> <p>Providing and laying machine-cut Kota stone 55 to 65 mm thick any type of Polished/ Textured (i.e. river wash finish, leather finish, linen finish, canvas finish etc) finish Kota stone in a single piece of any shade (uniform), any size, and any shape in the risers of steps, dado, planter sides, or similar etc. as per the drawings. Kota stone slab having pencil corner and same polished at the exposed edge in even and uniform thickness and laid in any pattern fixed on any type of leveled surface with approximate 12 mm thick (average) cement mortar 1:3 (1 cement : 3 coarse sand)/suitable adhesive as per manufacturer specification, and jointed (paper joint) with grey/ white cement slurry mixed with pigment to match the shade of the slabs, including finishing, rubbing, curing, polishing, cleaning, protection, scaffolding, wastage, etc. all complete for all levels, all floor, all height, and as directed by the Engineer-in-Charge. The joint between the tread and riser shall be finished as per the drawing. The rate shall be inclusive of Kota stone (as per the approved sample), cement mortar for fixing/adhesive, cement slurry, matching pigment, all labour, etc complete. The contractor shall arrange loose Samples for approval from the Engineer-in-Charge before mass execution. The actual laid area of the Kota stone shall be measured for payment without considering any wastage.</p>	Sqm	5	1,834.00	9,170
15	<p>18 mm thick WPC Plank/board - coping/seating on bench etc.</p> <p>Providing & laying 18 mm thick machine-cut External category WPC Pank/board of any finish, any texture, any color, any shade, any size and any shape, wpc board /plank having density 550 kg/cum for coping, seating on bench in required design and patterns as per the drawings, fixed with suitable adhesive of minimum 6 mm thicknes fixing adhesive as per IS-15477 of an approved make, including making groove as per drawing, exposed edge treatment and champharing/ making pencil corner if required, rounded corner treatment in even thickness and finished same as plank/board finish as per drawing and as approved and directed by Engineer in charge, WPC board/plank shall be used in single possible length/as per drawing for coping / seating on bench. Necessary anchoring shall be done if required as per design intent. The actual laid area of the WPC Board/Plank shall be measured for payment without considering any wastage.</p>	Sqm	132	1,792.00	2,36,544
16	<p>Precast RCC Bench - modular type linear/ curvature in Plan and elevation, Tube type</p> <p>Providing, hoisting, stacking and arranging in position, precast exposed fair finished modular type linear/ curvature in Plan and elevation, bench as per design intent, made of minimum M-30 grade RCC, with/ without a back rest of approximate size and shape as per the design intent, as directed by the Engineer-in-charge. The Contractor shall submit a methodology for the erection of the precast bench and get approval from the Engineer-in-Charge. Installed precast bench shall not be damaged in any way. The sample shall be approved by the Engineer-in-charge before mass production. The rate shall include for erecting and fixing the precast bench in position as per the drawing, finishing, necessary TMT reinforcement bars etc., complete, as directed by the Engineer-in-Charge. The location and type of each lifting hook for erecting the bench shall be as per the design intent and as approved by the Engineer-in-Charge. The Architect and the Engineer-in-Charge reserve the right to reject part or all work found to be sub standard or not as per the approved sample and the mock-up. The sample and the mockup shall not be payable if rejected or cast in another location (not in scope of work area). if required bench shall be in coloured/ pigmented concrete however additional cost of for pigment shall be paid relevant tender item.The actual laid volume shall be measured for payment without any wastage.</p>	cum	66	36,208.00	23,89,728

BILL OF QUANTITIES
SUB SECTION
6.2 - RESIDUAL ELEMENTS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
17	<p>ACP sheet signage on Existing Pole/ New Pole for Vehicular Direction Signages: Providing, making and fixing 4 mm thick ACP sign of any shape and size and of approved make to be cut on CNC router cutting and smoothen all corners and edges. Matter shall be cut in 3M High intensity prismatic Reflective vinyl ASTM Type 4 and paste on it as per design and detail and as per manufacturer's specifications. UV stabilized lamination (exterior grade) shall be done on it. The ACP sheet shall be fixed with clamp and angle on new or any type of Pole as per drawing. Content of sign shall be letters (in any language)</p>	Sqm	8	8,305.00	66,440
18	<p>Vinyl Stickers: Providing, Cutting & pasting of vinyl stickers of approved make and shade with digitally printed graphic/ letter as per design and as directed by engineer in charge. Pasting of vinyl must be accurate as per the design on the approved size ACP without any kind of bubbles. The rate shall also include cost of scaffolding, drilling, fabrication, finishing, adhesive material etc at all height and all lead. Only out to out area elevation vinyl stickers shall be measured and paid in sqmt. The contractor should submit the drawings based on concept design and do the sampling and get it approval before execution.</p>	Sqm	8	4,239.00	33,912
19	<p>SS Plate Signs : Providing Making and fixing SS plate signs on 2mm thick ISI Brushed S.S. Grade 304 plate with acid etching and duco painting. All plates will be made in CNC Water Jet Cutting, with all edges smoothen and all corner to be cute round. Acid etching should be done 0.3mm deep and Use ICI duco paint for colour infill of approved colour. The letters of made of Vinyl stickers. The font colour shall be of as per drawing and specified by Architect. The plate will be fixed on wall with the stud/ fastener/ adhesive tape of 3M, jointing sealant as per design as per specification and approved by Architect or Engineer in charge. The rate shall be inclusive of scaffolding, drilling, fasteners/ adhesive material etc. at all heights as directed by engineer in charge. Only elevation area shall be measured and paid. The rate shall also include cost of scaffolding, drilling, fabrication, finishing, adhesive material etc at all height and all lead. The contractor should submit the drawings based on concept design and do the sampling and get it approval before execution.</p>	Sqm	8	45,746.00	3,65,968
Total Carried Over to Summary					32,39,430
7	PREPARATORY WORKS - RESIDUAL ELEMENTS				
	<p><i>Note: -</i> 1) <i>The method of demolition work shall be approved by the Engineer-in-charge before execution of work.</i> 2) <i>Demolition work shall be carried out by any means and as per approved method without damaging adjoining elements/ building and any building/ campus property.</i> 3) <i>The rate includes all necessary machinery, labour, tools, and tackles for the dismantling of specified elements in any condition, by any means, etc. complete as directed by the Engineer-in-charge including disposing of serviceable material within the campus and unserviceable material outside the campus for all lead and lift at the non-objectional place as directed by Engineer-in-charge.</i></p>				

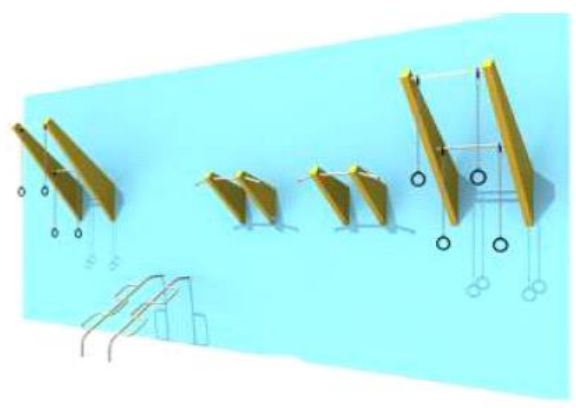
BILL OF QUANTITIES
SUB SECTION
6.2 - RESIDUAL ELEMENTS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
20	<p>Cutting in stone, concrete, or bituminous surface Labour charge for cutting in stone, concrete, or bituminous surface to facilitate further execution work using heavy duty cutting machine consist of diamond blade or any other required means. cutting depth & width shall be as per actual requirement. Cutting shall be perfectly in line. dismantle material shall be carefully removed so that the cutting edge shall not be disturbed. all debris shall be disposed for all lead and lift at non objectional place and as per the direction of the engineer in charge. Surroundings shall be cleaned up to the satisfaction of engineer in charge.</p>	Sqm	425	290.00	1,23,250
21	<p>Dismantling of existing reinforced cement concrete (RCC) work of any grade and any type, using mechanical or manual methods as advised by the Engineer-in-Charge. This includes cutting reinforcement, and providing necessary tools, plant, and scaffolding. The work also involves sorting the dismantled material, disposing of unserviceable material at an approved location, and stacking the serviceable material with all necessary all lifts and all leads, as directed by the Engineer-in-Charge. The volume of the existing RCC work shall be measured for payment before the dismantling begins. The method for calculating the volume for payment shall be approved by the Engineer-in-Charge.</p>	Cum	72	1,526.00	1,09,872
22	<p>Chemical Anchor: Supplying, Drilling/ Cleaning hole and injecting grouting chemical with the help of dispenser, into a hole of dia & depth as per manufacturer/ structural consultant's specification and fixing rebar of the required diameter subsequently. Fixing methodology shall be followed as per manufacturer's guidelines. Steel will be paid under relevant item. Manufacturer to submit Rebar Depth Calculation based on design loads & other parameters as provided by consultant and in accordance with EOTA-TR-023/029 "guidelines for post installed rebar connections" for approval. Rate shall be inclusive of all material, labour, necessary scaffolding etc complete for all height as directed by engineer in charge.</p>				
22.1	a) 10mm x 150mm	No	120	400.00	48,000
22.2	b) 12mm x 180mm	No	120	575.00	69,000
22.3	c) 16mm x 240mm	No	120	880.00	1,05,600
22.4	d) 20mm x 300mm	No	120	1,475.00	1,77,000
22.5	e) 25mm x 375mm	No	120	1,940.00	2,32,800
23	<p>Rebaring : Providing material and labour for Drilling/ Cleaning hole and injecting grouting chemical with the help of dispenser, into a hole as per manufacturer/ structural consultant's specification and fixing rebar of the required diameter subsequently. Fixing methodology shall be followed as per manufacturer's guidelines. Steel will be paid under relevant item. Manufacture to submit Rebar Depth Calculation based on design loads & other parameters as provided by consultant and in accordance with EOTA-TR-023/029 "guidelines for post installed rebar connections" for approval. Rate shall be inclusive of all material, labour, necessary scaffolding etc complete for all floors, all height as directed by engineer in charge.</p>				
23.1	a) hole of dia 8mm and depth min 120mm	No	610	197.00	1,20,170

BILL OF QUANTITIES
SUB SECTION
6.2 - RESIDUAL ELEMENTS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)
23.2	b) hole of dia 10mm and depth min 150mm	No	1230	273.00	3,35,790
23.3	c) hole of dia 12mm and depth min 180mm	No	610	360.00	2,19,600
23.4	d) hole of dia 16mm and depth min 240mm	No	410	557.00	2,28,370
	Total Carried Over to Summary				17,69,452
	TOTAL OF SUB SECTION 6.2 - RESIDUAL ELEMENTS				86,66,479

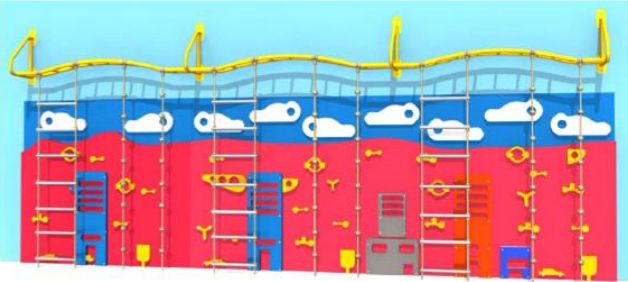
BILL OF QUANTITIES
SUB SECTION
6.3 - WALL CLIMBING WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)	Reference Images.
8	PLAY EQUIPMENT					
24	<p>Wall Trainers Supply and Fixing of Wall Trainer as per the approved make and as per design intent. The product to match the colours, design, size, contours and aesthetics exactly as per the image attached/ design intent for all level, all height, all lift by any means."As per NIUA Guidelines, all products must be tested and certified to meet EN 1176 safety standards. The EN 1176 certificates must be issued by a reputed notified International Certifying Body such as IPEMA, TUV, CPSC, or SGS only. All components shall meet the EN-16630 safety standards.</p> <p>The Contractor shall submit a methodology statement with all relevant details in illustrative sketch and technical data sheet form before execution as per manufacturers' specifications. The Contractor shall be fully responsible for the structural stability & performance of the whole system. All execution work shall be executed through an approved specialised agency of an approved manufacturer or shall be executed by the manufacturer itself. also the technical specification mentioned is as follows. Manufacturers shall provide warranty of minimum 1 year from the date of the handover for that the System (s) shall be free from defects in materials and workmanship (the Materials and Workmanship Warranty), and shall work properly in accordance with the requireemnt and all parts i.e. Structural/Non structural Metallic Parts, all Non metallic parts, PLASTIC parts and all other parts which is included in this system. Rate shall be inclusive of maintenance and Defect Liability for a period of 5 years from the date of substantial handover without any extra cost, including replacing same approved any type of parts/systems within a minimum of 1 week of the complain. preventive maintenance is also included.</p>	Lot	1.0	9,49,621.00	9,49,621	

BILL OF QUANTITIES
SUB SECTION
6.3 - WALL CLIMBING WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)	Reference Images.
	<p>In this item, with the mode of measurement of LOT, 2 Sets of Double ring system, 1 set of Pull up bar system & 2 sets of Pull up rack system, safety signage as per design requirement shall be provided as per design intent and as mentioned below. approximate Overall dimension of the whole wall trainer system shall be 8.5 X 3.25 m. All type of incidental work, Civil work or other work to complete this system up to the satisfaction of the engineer in charge and as per manufacturers prescription is included in this item.</p> <p>Double Ring: Approximate dimension: 1.5 m x 1 m x 1.75 m 2 sets per lot of double ring shall be provided, which shall be made of approximately 40 X 80 mm square pipe. Main Framework on both sides, Minimum 2 mm thick Galvanized Steel Plate to cover the Main Framework as per design intent. the required length SS 304 chain with a lifting ring shall be provided as per design intent. Minimum weight of the 1 set of the double ring shall be 90 Kg.</p> <p>Pull-up bar: Approximate dimensions: 1.6 m x 1.15 m x 1.04 m Main pole made of approximately 60 x 3 mm Hot-galvanised Steel Pipe, Handrail made of approximately 32 x 3 mm Hot-galvanised Steel Pipe as per design intent. Minimum weight of the 1 set of pull-up bar shall be 30 Kg.</p> <p>PULL UP RACK: 1.25 m x 1.0 m x 0.75 m 2 sets per lot of main framework shall be provided, which shall be made of approximately 40 X 80 mm square pipe, with a minimum 2 mm thick Galvanized Steel Plate to cover the Main Framework as per design intent. the required length SS 304 chain with a lifting ring shall be provided as per design intent.</p> <p>For all systems, all joints shall be robotic weleded and color pallet of the system shall be approved before execution. All systems shall be fixed to an existing wall of any material with the required capacity of the anchor bolt/chemical anchor/mechanical anchor/washer, Lock nut with cap cover, threaded rod, LED screw, Wall connecting plate/base plate with required thickness and size, etc as per manufacturers specification. and it shall be as per the requirement of weight lifting capacity of the system. Necessary pull-out test shall be made as per manufacturers specifictaions, and Certification of pull-out testing is to be produced by the anchoring manufacturer. all metal surfaces shall be of any colour, any shade powder-coated as per design intent if nowhere else specified.</p>					

BILL OF QUANTITIES
SUB SECTION
6.3 - WALL CLIMBING WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)	Reference Images.
25	<p>Wall Climbing play system Supply and Fixing of the wall climbing play system as per the approved make and as per design intent. The product to match the colours, design, size, contours and aesthetics exactly as per the image attached/ design intent for all level, all height, all lift by any means."As per NIUA Guidelines, all products must be tested and certified to meet EN 1176 safety standards. The EN 1176 certificates must be issued by a reputed notified International Certifying Body such as IPEMA, TUV, CPSC, or SGS only. All components shall meet to EN-16630 safety standards. The Contractor shall submit a methodology statement with all relevant details in illustrative sketch and technical data sheet form before execution as per manufacturers' specifications. The Contractor shall be fully responsible for the structural stability & performance of the whole system. All execution work shall be executed through an approved specialised agency of an approved manufacturer or shall be executed by the manufacturer itself. also the technical specification mentioned is as follows. Manufacturers shall provide warranty of minimum 1 year from the date of the handover for that the System (s) shall be free from defects in materials and workmanship (the Materials and Workmanship Warranty), and shall work properly in accordance with the requireemnt and all parts i.e. Structural/Non structural Metallic Parts, all Non metallic parts, PLASTIC parts and all other parts which is included in this system. Rate shall be inclusive of maintenance and Defect Liability for a period of 5 years from the date of substantial handover without any extra cost, including replacing the same approved any type of parts/systems within a minimum of 1 week of the complain. preventive maintenance is also included.</p>	Lot	1.0	44,80,452.00	44,80,452	

BILL OF QUANTITIES
SUB SECTION
6.3 - WALL CLIMBING WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)	Reference Images.
	<p>In this item, with the mode of measurement of LOT, the whole system consisting HDPE Panels, Elements like clouds, Ring, Car, pegs etc, Monkey trail, Ladder & climbing rope, safety signage as per design requirement etc shall be provided as per design intent and as mentioned below. approximate Overall dimension of wall climbing play system shall be 8.5 X 3.25 m. All type of incidental work, Civil work or other work to complete this system up to the satisfaction of the engineer in charge and as per manufacturers prescription is included in this item.</p> <p>Minimum 30 mm thick HDPE panels in any shape, any size, any color and any shade, any finish shall be fixed on the existing wall by suitable means as per manufacturers specifications. HDPE panel shall have reserved holes for fixing arrangement through anchor bolt, hexagonal socket head cap screw, washer, nylon rods, furniture nut etc. and it shall be properly fixed with the existing wall as per capacity required. also, elements like clouds, rings, wooden blocks, climbing pegs and other shapes etc shall be fixed on HDPE panel as per design intent and as per manufacturers specification and it shall be fixed up to the RCC wall through necessary accessories/fixing arrangement. Also, required size Monkey trail made of SS 304 48 mm dia metal frame & SS 304 32 mm dia hanrail shall be fixed to wall as per design intent with required capacity and type anchor fastners. minimum 3 sets of SS lader & and 6 no of polypropylene ropes with covered braided multifilament shall be fixed to monkey ladder for climbing purpose with required fixing arrangement.</p> <p>For all systems, all joints shall be robotic weleded and color pallet of the system shall be approved before execution. All systems shall be fixed to an existing wall of any material with the required capacity of the anchor bolt/chemical anchor/mechanical anchor/washer etc as per manufacturers specification. and it shall be as per the requirement of weight lifting capacity of the system. Necessary pull-out test shall be made as per manufacturers specifictaions, and Certification of pull-out testing is to be produced by the anchoring manufacturer. all metal surfaces shall be of any colour, any shade powder-coated as per design intent if nowhere else specified.</p>					
26	<p>Play Area flooring Providing & Fixing of minimum 30 mm thick Rubber flooring interlocking tile Carpet with any size, any shape, any color, any finish and any shade as per design intent for all floor, all height, all level including fixing adhesive as per manufacturer's specifications and self levelling compound (if required) of required thickness of approved make and series as per design intent. Rubber flooring shall be with 15% EPDM & 85% SBR, Density (kg/m3):1000/1200, Hardness (Shore a):68, Stretch (MPA):2.2, Abrasion resistance: 0.0075g (ASTM-D4060-01), Rebound resistance: 55%, Shape deformation: 42%, Warranty - 3 years. The sample shall be approved by engineer in charge before procurement. The rate shall be inclusive of fixing adhesive, self levelling compound, wastage, materials, installation, transportation charges, taxes, labour for all floors/all heights and all levels etc. The actual laid area shall be measured for payment without considering any wastage.</p>	Sqm	100.0	3,905.00	3,90,500	
Total Carried Over to Summary					58,20,573	

BILL OF QUANTITIES
SUB SECTION
6.3 - WALL CLIMBING WORKS

Sr. No.	Description	Unit	Total Quantity estimated but may be more or less	Unit Rate (In Rs.)	Total amount (In Rs.)	Reference Images.
9	PREPARATORY WORKS - WALL CLIMBING					
	<p><i>Note: -</i></p> <p>1) <i>The method of demolition work shall be approved by the Engineer-in-charge before execution of work.</i></p> <p>2) <i>Demolition work shall be carried out by any means and as per approved method without damaging adjoining elements/ building and any building/ campus property.</i></p> <p>3) <i>The rate includes all necessary machinery, labour, tools, and tackles for the dismantling of specified elements in any condition, by any means, etc. complete as directed by the Engineer-in-charge including disposing of serviceable material within the campus and unserviceable material outside the campus for all lead and lift at the non-objectional place as directed by Engineer-in-charge.</i></p>					
27	<p>Cutting in stone, concrete, or bituminous surface</p> <p>Labour charge for cutting in stone, concrete, or bituminous surface to facilitate further execution work using heavy duty cutting machine consist of diamond blade or any other required means. cutting depth shall be up to 200 mm or as per actual requirement. Cutting shall be perfectly in line. dismentle material shall be carefully removed so that the cutting edge shall not be disturbed. all debris shall be disposed for all lead and lift at non objectional place and as per the direction of the engineer in charge. Surroundings shall be cleaned up to the satisfaction of engineer in charge.</p>	Rmt	30.0	155.00	4,650	
28	<p>Dismantling of existing concrete, reinforced cement concrete (RCC) work of any grade and any type, using mechanical or manual methods as advised by the Engineer-in-Charge. This includes cutting reinforcement and providing necessary tools, plant, and scaffolding. The work also involves sorting the dismantled material, disposing of unserviceable material at an approved location, and stacking the serviceable material with all necessary all lifts and all leads, as directed by the Engineer-in-Charge.</p> <p>The volume of the existing RCC work shall be measured for payment before the dismantling begins. The method for calculating the volume for payment shall be approved by the Engineer-in-Charge.</p>	Cum	25.0	1,526.00	38,150	
	Total Carried Over to Summary				42,800	
	TOTAL OF SUB SECTION 6.3 - WALL CLIMBING WORKS				58,63,373.00	