


**PROPOSED CAMPUS FOR NCSCM
(National Centre for Sustainable Coastal Management)
Anna University, Chennai**

**Volume 3
Of
TENDER DOCUMENTS**

- a)BOQ For Civil Works,**
- b)BOQ For Plumbing Works,**
- c)BOQ for Electrical Works.**

Architects	PHE Consultant
<p>flying elephant STUDIO</p> <p>THEKAEKARA HOUSE BANASWADI 10TH MAIN 2ND G CROSS BANGALORE 560043 T & F 080 41614966 info@flyingelephant.in www.flyingelephant.in</p>	<p> McD Berl Follow LAWS for enabling LIFE</p> <p>Mc D Built Environment Research Laboratory PvtLtd, Green building,Sustainability and MEP services, 3rd Floor,CONCORD,#1354,9th Cross, 80ft Road, 33rd Main ,1st Phase, JP Nagar,Bangalore-560 078. Ph:+91 80 41214020,URL: www.mcdberl.com</p>

BASIC PRICE

SL.NO	MATERIAL	UNIT	BASIC PRICE
1	CEMENT	BAG	310.00
2	REINFORCEMENT STEEL	MT	50000.00
3	STRUCTURAL STEEL	MT	55000.00
4	CERAMIC TILE	SFT	60.00
5	19MM THICK POLISHED SADARHALLI STONE	SFT	85.00
6	19MM THICK POLISHED BLACK GRANITE	SFT	160.00
7	CEMENT PAVER TILE	SFT	50.00
8	60MM THICK CEMENT INTERLOCK PAVER	SFT	60.00
9	GRASS PAVER TILE	SFT	60.00
10	GLASS MOSAIC TILE	SFT	90.00

SUMMARY OF PRICES

SL.NO	SECTIONS	Rs.	AMOUNT			
			ADMINISTRATION BLOCK	GEO DIVISION	LABORATORIES/OFFICES & CENTRAL AMENITIES	EXTERNAL DEVELOPMENT
A	EARTH WORK EXCAVATION/EARTH CUTTING & FILLING	Rs.				
B	PLAIN CEMENT CONCRETE/ROAD & PAVING WORK/ROAD & PAVING WORK	Rs.				
C	REINFORCED CEMENT CONCRETE/BOUNDARY WALL WORK	Rs.				
D	FORM WORK/ UNDER GROUND SUMPS	Rs.				
E	REINFORCING STEEL/MISCELLANEOUS	Rs.				
F	STRUCTURAL STEEL FABRICATION AND ERECTION	Rs.				
G	MASONRY	Rs.				
H	PLASTERING / POINTING	Rs.				
I	FLOORING & DADOING	Rs.				
J	PAINTING	Rs.				
K	WATERPROOFING	Rs.				
L	MISCELLANEOUS	Rs.				
	TOTAL AMOUNT	Rs.				
	ADD TAXES @ 9.99%					
	TOTAL AMOUNT WITH TAXES	Rs.				
1.00	TOTAL AMOUNT OF CIVIL WORKS INCLUDING TAXES	Rs.				
2.00	TOTAL AMOUNT OF GLAZING (ALUMINIUM DOORS & WINDOWS) INCLUDING TAXES	Rs.				
3.00	TOTAL AMOUNT OF PHE WORKS INCLUDING TAXES	Rs.				
4.00	TOTAL AMOUNT OF ELECTRICAL WORKS INCLUDING TAXES	Rs.				
	GRAND TOTAL	Rs.				

**BILL OF QUANTITY
ADMINISTRATION BLOCK**

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
A	EXE - 00	EARTH WORK EXCAVATION				
	EXE-01	Site Clearing: Cleaning and grubbing for removal of rank, vegetation, shrubs, trees, bushes, stumps, weeds, grass including roots, debris, unusable materials, removal of 150mm thick top soil using manual or mechanical method and disposal of the same by burning or any other means including dumping to approved areas within the project site, stacking usable materials at places shown with all leads and lifts, cost of all labour, hire and fuel charges for all tools and plants employed and all other incidental charges etc., all complete and as directed.	SQM	426.00		
	EXE-02	Earthwork excavation in all types of soil for Footing, Raft, RC wall foundations, Lift pits, Trenches, Under ground sumps etc. stacking the excavated earth & disposable material where ever indicated in site, excluding back filling but including filling depressions and loose pockets wherever necessary including watering, consolidating etc., complete. Rate to include disposing of excess earth within the site and spreading in layers to required levels, shoring, bailing out water, etc. complete. Contractor shall get aquinted with site conditions and soil report and submit method statement for dewatering and getting the surface reasonably dry for laying PCC. Note: Authorised working space shall be considered as per IS 1200(From the Basment Floor Level)				
	a.	Lift upto 1.5M depth	CUM	529.00		
	b.	Lift from 1.50m to 3.0m depth	CUM	32.00		
	EXE-03	Do-do the same of EXE-02 but earth work excavation in Hard rock at all levels with non blasting method like chiseling/compressors including stacking in rectangular/trapezoidal shape,for measurement at ground level as directed etc to complete. Note: 60% of the Stack Qty considered for payment				
	a.	Lift upto 0.0 m to 1.5m depth	CUM	44.00		
	b.	Lift from 1.50m to 3.0m depth	CUM	RO		
	EXE-04	Do-do the same of EXE-02 but for earth work excavation in soft rock at all levels with non blasting method like chiseling including stacking in rectangular/trapezoidal shape,for measurement at ground level as directed etc to complete				
	a.	Lift upto 0.0 m to 1.5m depth	CUM	66.00		
	b.	Lift from 1.50m to 3.0m depth	CUM	RO		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	EXE-05	Back filling in plinths, for sides of foundation, trenches, lift pits, area development else where as directed including breaking clods, watering and consolidating in 150mm thick layers, compacting each layer with vibratory compactor and at inaccessible places with wooden/steel rammers to achieve 90 to 95% proctor density at optimum moisture content, all leads and lifts, bailing/ pumping out water to keep site dry while backfilling cost shall include conveyance of all materials, labour, hire and fuel charges for tools and plants and other incidental charges etc. complete as per detailed specification.				
	a.	With excavated earth available at site	CUM	335.00		
	b.	With approved earth brought from outside.	CUM	637.00		
	c.	With approved River Sand filling	CUM	74.00		
	EXE-06	Disposing surplus excavated soils of all types outside the site upto a lead of 5 KM including cost of labour, cost of equipment and machinery, loading and unloading, transportation, all other incidental charges at all leads and lifts etc. complete. The work shall be carried out as per the directions of the Engineer-In-Charge.	CUM	335.00		
	EXE-07	Providing, Packing & Laying 150mm Thick (consolidated thickness) hard stone Soling in below flooring, plinth, basement, ramps, drive way & other places including sand cushion of 50mm tk, base preparation by mechanical compaction, using granite hand broken metal/rubble & smaller pebbles for void filling, murrum for binding as directed by the Engineer- in-charge.	CUM	RO		
	EXE-08	Supplying, diluting and injecting chemical emulsion for PRE-CONSTRUCTIONAL Anti-termite treatment and creating a continuous chemical barrier under and all-round the column pits, wall trenches, basement excavation, top surface of plinth filling, junction of wall and floor, along the external perimeter of building, expansion joints, over the top surface of consolidated earth on which apron is to be laid, surroundings of pipes and conduits etc. complete to required depths as per specifications (Plinth area of the building at ground floor only shall be measured for payment). Chlorpyrifos 20% Emulsifiable Concentrate injected with 1% concentration at all levels & heights. Note: Treatment Shall be considered below floor & back fill area at external face retaining wall area	SQM	371.00		
		SUB TOTAL- EARTH WORK EXCAVATION				
B	PCC-00	PLAIN CEMENT CONCRETE				

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	PCC-01	Providing & laying 3" thick DAMP PROOF COURSE with cement concrete 1:2:4(1cement:2coarse sand:4graded stone aggregate 12.5mm nominal size) including mixing of waterproofing admixture of Sika/Fosroc/MC Bauchemie/Roffe or equivalent as per manufacturers specifications etc., complete for SSM topping including shuttering etc., complete	CUM	4.00		
	PCC-02	Providing and laying Plum concrete 1:5:10 wherever specified using river sand, 40mm and down size metal and boulders of 150mm (Proportion 70:30 for concrete : boulder) including sub grade preparation, levelling, compacting, all leads and lifts, rough finishing if required at the top surface, with necessary curing and shuttering etc. complete at all levels.				
	a.	In below footing/Raft	CUM	36.00		
	PCC-03	Providing and laying P.C.C 1:4:8 of specified thickness wherever specified using river sand, 40mm and downsize metal including sub grade preparation, levelling, compacting, all leads and lifts, rough finishing if required at the top surface with necessary curing and shuttering etc. complete at all levels.				
	a.	In below footing/Raft	CUM	18.00		
	b.	In below floor	CUM	37.00		
	PCC-04	Providing and laying Screed concrete in 1:2:4 with 20mm and down graded stone aggregates wherever to required thickness, slope and trowel finished smooth as directed including levelling, compacting, all leads and lifts with necessary curing and shuttering etc. complete at all levels.				
	a.	50mm Average thickness for Toilets above sunken & GF slab	CUM	7.00		
	b.	75mm average thickness for Sill /coping for Window,Parapet etc.,	CUM	2.00		
		SUB TOTAL-PLAIN CEMENT CONCRETE				
C	RCC-00	REINFORCED CEMENT CONCRETE				
	RCC-01	SITE MIX CONCRETE				

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
		Providing and laying cast in-situ design mix Reinforced Cement Concrete (RCC) using cement, coarse sand, granite, basalt or trap stone graded aggregate 20mm & down as per design & drawing including dewatering, preparing surface, machine batching, machine mixing, pouring in place, mechanical compaction, providing cement cover blocks, making construction joints, finishing, curing etc. complete as directed by the Engineer . The rate to include all labour, material, equipment, plant & machinery, conveyance, lowering, hoisting, wastages and all incidentals excluding formwork and reinforcement which shall be measured & paid for separately.				
	a.	M30 Grade concrete for Footing/Raft	CUM	RO		
	b.	M30 Grade concrete for Column Pedestals	CUM	RO		
	c.	M30 Grade concrete for Plinth Beam	CUM	14.00		
	d.	M30 Grade concrete for Retaining Wall	CUM	7.00		
	RCC-02	Do-do the same of RCC-01 but for Columns with M30 grade concrete at all levels				
	a.	Ground Floor	CUM	17.00		
	b.	First Floor	CUM	14.00		
	c.	Second Floor	CUM	14.00		
	d.	Third Floor	CUM	14.00		
	e.	Terrace Floor	CUM	2.00		
	RCC-03	Do-do the same of RCC-01 but for lift Core wall & shear walls with M30 grade concrete at all levels				
	a.	Ground Floor	CUM	7.00		
	b.	First Floor	CUM	6.00		
	c.	Second Floor	CUM	6.00		
	d.	Third Floor	CUM	6.00		
	e.	Terrace Floor	CUM	5.00		
	RCC-04	Do-do the same of RCC-01 but for Roof slab with M30 Grade at all levels				
	a.	Ground Floor	CUM	RO		
	b.	First Floor	CUM	RO		
	c.	Second Floor	CUM	RO		
	d.	Third Floor	CUM	RO		
	e.	Terrace Floor	CUM	RO		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	RCC-05	Do-do the same of RCC-01 but for Roof Beam with M30 grade concrete at all levels				
	a.	Ground Floor	CUM	RO		
	b.	First Floor	CUM	RO		
	c.	Second Floor	CUM	RO		
	d.	Third Floor	CUM	RO		
	e.	Terrace Floor	CUM	RO		
	RCC-06	Do-do the same of RCC-01 but for Staircase with M30 grade concrete at all levels				
	a.	Ground Floor	CUM	3.00		
	b.	First Floor	CUM	3.00		
	c.	Second Floor	CUM	3.00		
	d.	Third Floor	CUM	3.00		
	RCC-07	Do-do the same of RCC-01 but for Lintel,Chajjas,Loft etc., with M20 grade concrete at all levels	CUM	3.00		
	RCC-08	Do-do the same of RCC-01 but for OHT slab & wall with M20 grade concrete at all levels	CUM	10.00		
	RCC-09	READY MIX CONCRETE				
		Providing, batching, mixing, transporting through transit mixers, pumping and laying Reinforced Cement Concrete of specified grade at all levels and heights specified below using ordinary Portland cement of grade 53 from approved manufacturer, river sand, 20mm and down size coarse aggregates, necessary admixtures approved by Consultants (Conplast SP 430SRV from Fosroc or equivalent), including all leads and lifts, pumping using line pump or boom placer, vibrating/ compaction, scaffolding wherever necessary, curing as directed, excluding cost of shuttering, centering and staging etc				
		(Design mix shall be as approved by the consultants. W/C ratio shall be as per consultants recommendation)-				
	a.	M30 Grade concrete for Footing/Raft	CUM	119.00		
	b.	M30 Grade concrete for Column Pedestals	CUM	9.00		
	c.	M30 Grade concrete for Plinth Beam	CUM	RO		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	d.	M30 Grade concrete for Retaining Wall	CUM	RO		
	RCC-10	Do-do the same of RCC-09 but for Roof slab with M30 grade concrete at all levels				
	a.	Ground Floor	CUM	44.00		
	b.	First Floor	CUM	49.00		
	c.	Second Floor	CUM	49.00		
	d.	Third Floor	CUM	49.00		
	e.	Terrace Floor	CUM	5.00		
	RCC-11	Do-do the same of RCC-09 but for Roof Beam with M30 grade concrete at all levels				
	a.	Ground Floor	CUM	17.00		
	b.	First Floor	CUM	17.00		
	c.	Second Floor	CUM	17.00		
	d.	Third Floor	CUM	17.00		
	e.	Terrace Floor	CUM	3.00		
	RCC-12	Difference in rate for Higher/Lessor Grade of Concrete for all above items at all levels				
	a.	M20(Rebate)	CUM	RO		
	b.	M25 (Rebate)	CUM	RO		
	c.	M35	CUM	RO		
	d.	M40	CUM	RO		
		SUB TOTAL-REINFORCED CEMENT CONCRETE				
D	FRM-00	FORM WORK				
		Note: Rate shall be included under propping with steel jack until upper roof slab concreting & deshuttering etc., complete				

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	FRM-01	Providing, fabricating and erecting form work for all RCC works at places wherever needed / specified as per drawing including striking / deshuttering with marine ply board with adjustable steel props to full height and with sufficient bracing etc. complete. Cost to include sealing the joints with heavy duty brown self adhesive tape, applying mould releasing agents (Rebol from Fosroc or equivalent) aligning to line and levels including M S Ties, PVC spacer etc.Complete & as directed at all levels.				
		Formwork shall be designed for rigidity, durability, strength, water tightness, easy deshuttering etc. Formwork designed using new material (approved prior to making), shall be able to withstand its shape, line, dimensions, level within the allowable tolerances. Only steel jacks and steel spans shall be used. Bracing in both directions as specified by the structural engineer shall be provided. Necessary arrangements for providing camber as required shall be made. Formwork shall have adequate openings for cleaning. Formwork for construction joints shall be submitted for approval. All slabs shall be progressively deshuttered and back propped as per instructions by structural engineer.				
		Shuttering below the shrinkage strip at every level shall be retained in place without disturbing for a time as specified by the structural engineer.				
		Shuttering materials shall be film coated plywood of approved thickness for slabs, beams, columns, shear walls, lift walls etc.				
	a.	Footing/Raft	SQM	204.00		
	b.	Column Pedestals	SQM	35.00		
	c.	Plinth Beam	SQM	144.00		
	d.	Retaining wall	SQM	36.00		
	FRM-02	Do-do the same of FRM-01 but for Columns at all levels				
	a.	Ground Floor	SQM	198.00		
	b.	First Floor	SQM	165.00		
	c.	Second Floor	SQM	165.00		
	d.	Third Floor	SQM	165.00		
	e.	Terrace Floor	SQM	19.00		
	FRM-03	Do-do the same of FRM-01 but for RCC Core wall at all levels				
	a.	Ground Floor	SQM	67.00		
	b.	First Floor	SQM	58.00		
	c.	Second Floor	SQM	58.00		
	d.	Third Floor	SQM	58.00		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	e.	Terrace Floor	SQM	45.00		
	FRM-04	Do-do the same of FRM-01 but for Roof slab at all levels				
	a.	Ground Floor	SQM	368.00		
	b.	First Floor	SQM	368.00		
	c.	Second Floor	SQM	368.00		
	d.	Third Floor	SQM	368.00		
	e.	Terrace Floor	SQM	38.00		
	FRM-05	Do-do the same of FRM-01 but for Roof Beam at all levels				
	a.	Ground Floor	SQM	225.00		
	b.	First Floor	SQM	225.00		
	c.	Second Floor	SQM	225.00		
	d.	Third Floor	SQM	225.00		
	e.	Terrace Floor	SQM	36.00		
	FRM-06	Do-do the same of FRM-01 but for Staircase at all levels				
	a.	Ground Floor	SQM	18.00		
	b.	First Floor	SQM	18.00		
	c.	Second Floor	SQM	18.00		
	d.	Third Floor	SQM	18.00		
	FRM-07	Do-do the same of FRM-01 but for Lintel,Chajjas,Loft etc., at all levels	SQM	25.00		
	FRM-08	Do-do the same of FRM-01 but for OHT slab & wall	SQM	44.00		
	FRM-09	Providing Scaffolding to other agencies including working platforms at various levels as required from time to time, erecting and removing the scaffolding, staging as directed including the cost of all materials, cost of labour, cost of equipment and machinery, work at all leads, levels and lifts, loading and unloading, transportation, and all other incidental charges etc., complete for a period of 30days. The work shall be carried out as per the directions of the Engineer-In-Charge	SQM	RO		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	FRM-10	Providing double height staging work for a period of at all levels & heights, with steel scaffolding materials including erection and dismantling charges etc. complete with all lead & lift for all materials & labour and as directed, at all levels & heights.	SQM	RO		
		SUB TOTAL- FORM WORK				
E	RST-00	REINFORCING STEEL				
	RST-01	Providing,Fabricating & Placing Reinforcement Steel of High Yield Strength Deformed (HYSD) bars of various diameters of grade Fe 500 conforming to IS codes & make ISPAT or SAIL or VIZAG or TATA including straightening, cutting, bending, hooking, lapping and/or welding wherever required as directed, placing in position, tying with 18G black annealed binding wire double fold, cost of binding wire and anchoring to the adjoining members wherever necessary, all laps and wastages etc. complete as per structural drawings. Rate also to include cost of all materials, cost of labour, cost of equipment and machinery, loading and unloading, transportation, all other incidental charges and work at all leads and lifts etc. complete.				
		Note: Unless noted otherwise the measurements will be in accordance with IS: 1200 or equivalent BS. However reinforcement shall be measured only in lengths of bars as actually placed in position on standard weight basis, no allowance being made in the weight for rolling margin. Authorized laps and splices only will be measured. Chairs of any shape & profile, spacer bar of any shape & profile, concrete cover blocks, wastages, binding wire etc., will not be measured and shall be included in the quoted rates. Quoted rate shall be deemed to have considered the above stipulation.				
		At all levels and heights	MT	63.00		
	RST-02	Providing and fixing reinforcement steel upto 12mm dia., including drilling of holes and fixing the rod using lockset compound as detailed in drawing and as directed.	NOS	RO		
	RST-03	Providing and fixing reinforcement steel from 16mm dia to 20mm dia, including drilling of holes and fixing the rod using lockset compound as detailed in drawing and as directed.	NOS	RO		
	RST-04	Providing and fixing 20mm dia dowel bar anchor to rock (450mm length) with Fosrac lockfix grouting etc.,as per drawing and directed	NOS	247.00		
		SUB TOTAL-REINFORCING STEEL				

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
F	SST-00	STRUCTURAL STEEL FABRICATION AND ERECTION				
	SST-01	Preparing shop drawings, obtaining consultants approval, supplying, fabricating, delivering at site, hoisting and fixing in position, including all temporary staging and supporting work and making all structural steel work in accordance with the design, drawing prepared by the consultant for trusses, purlins, girders, brackets, etc. with connections using plates, channels and angles, gusset plate, foundation bolt, cleats, fasteners etc., steel conforming to IS 226 and IS 2062 with minimum yield strength of 250Mpa and upto 355Mpa. The rate of steel work shall include assembly, welding, jointing, building up new sections, cost of fasteners (nuts, bolts and washers) etc. The rate shall also include one coat zinc rich primer & two coat of Synthetic enamel paint of approved shade after properly cleaning the steel surface, necessary bolts & washers for fixing including grouting of bolts with 1:3 non shrink cement grout etc., complete all as per design, details, drawings, specifications etc. with all lead & lift for all materials & labour and as directed, at all heights & locations	MT	7.00		
	SST-02	Do-do the same of SST-01 but for Spiral Staircase with railing & enamel paint finish over a coat of Zinc coat primer etc., complete	NO	RO		
	SST-03	Supplying fabricating and fixing in position M.S pipe ladder of 450mm width x 3500mm height at all levels with 50mm dia pipe for sides and 32mm dia pipe for steps at 300mm c/c. The rate shall include for necessary anchoring to the walls and fixing in concrete bed. the ladder will be shop painted with one coat of primer and two coats of synthetic enamel paint of approved colour.	NO	1.00		
	SST-04	Providing, Fabricating & fixing 900mm high MS railing with 2" dia B class 16 gauge pipe as railing with 3/4" MS pipe of horizontal members & 2" dia MS pipe for balustrade etc., all inclusive cutting, welding, grouting to floor/masonry, grinding, wastages, labour, and finished with one coat of zinc coat primer with metal putty & two or more coat of specified colour enamel etc., complete(Str.steel shall be taken 18ka/Sqm)	SQM	41.00		
		SUB TOTAL-STRUCTURAL STEEL FABRICATION AND ERECTION				
G	MSR-00	MASONRY				
	MSR-01	Providing and constructing 230mm thick brick masonry in CM 1:6 using approved quality table moulded bricks of minimum 50kg / Sq.cm including raking, curing, scaffolding and staging, lead and lift, in all situations such as walls / pillasters / pillars / stub supports etc. complete as per drawing and as directed at all levels and heights	CUM	RO		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	MSR-02	Do-do the same of above but for periphery plinth level foundation	CUM	90.00		
	MSR-03	Providing and constructing 200mm thick Solid Concrete block work in straight or curved walls, piers and architectural features at all levels using approved solid blocks of strength 35 kg/sqcm in cement mortar 1:6 including curing, scaffolding, staging, packing the residual space between masonry & other structural members like columns, beams, slabs etc., providing openings as directed and finishing neatly around the same, the cost of all materials, cost of labour, cost of equipment and machinery, work at all leads and lifts, loading and unloading, transportation, and all other incidental charges etc., complete. The work shall be carried out as per the directions of the Engineer in charge				
	a.	Ground Floor	SQM	190.00		
	b.	First Floor	SQM	200.00		
	c.	Second Floor	SQM	200.00		
	d.	Third Floor	SQM	191.00		
	e.	Terrace Floor	SQM	145.00		
	MSR-04	Do-do the same of item MSR-02 but with 150mm thick solid block masonry etc., complete at all levels				
	a.	Ground Floor	SQM	211.00		
	b.	First Floor	SQM	144.00		
	c.	Second Floor	SQM	144.00		
	d.	Third Floor	SQM	149.00		
	e.	Terrace Floor	SQM	16.00		
	MSR-05	Providing and constructing 100mm thick Solid Concrete block in straight or curved walls, piers and architectural features at all levels including a concrete band of 75mm thick with 2-nos of 8mm dia reinforcement rod at every fifth course with M20 grade concrete mix including shuttering, staging, scaffolding, centering, formwork, curing, etc., cement mortar of 1:4 including packing the residual space between masonry & other structural members like columns, beams, slabs etc., providing openings as directed and finishing neatly around the same, the cost of all materials including reinforcement steel, cost of labour, cost of equipment and machinery, work at all leads and lifts, loading and unloading, transportation, and all other incidental charges etc., complete. The work shall be carried out as per the directions of the Engineer in charge				
	a.	Ground Floor	SQM	RO		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	b.	First Floor	SQM	57.00		
	c.	Second Floor	SQM	57.00		
	d.	Third Floor	SQM	56.00		
	e.	Terrace Floor	SQM	RO		
		SUB TOTAL-MASONRY				
H	PLS-00	PLASTERING / POINTING				
		Note: All plastering shall be included GI plaster mesh for joints & electrical conduiting area, packing of electrical,plumbing etc.,pipes,hacking at Rcc surface, scaffolding,lifting etc.,				
	PLS-01	Cement plastering on internal ceilings 15 mm thickness in C.M. (1:4) finished smooth including corridor ceilings, including providing and removing scaffolding, smooth cement rendering ,curing, hacking etc., complete. With all lead & lift as directed by engineer in charge.				
	a.	Ground Floor	SQM	353.00		
	b.	First Floor	SQM	353.00		
	c.	Second Floor	SQM	353.00		
	d.	Third Floor	SQM	353.00		
	e.	Terrace Floor	SQM	34.00		
	PLS-02	Prepare the surface and provide 15mm thick plastering on Internal walls, columns, beams, etc., in cement mortar 1:6 finishing to line and level with cement rendering, rounding off all corners wherever required, finished smooth to required profile at all levels and lifts, including GI plaster mesh for joints, scaffolding, curing etc, complete at all levels and heights.				
	a.	Ground Floor	SQM	578.00		
	b.	First Floor	SQM	501.00		
	c.	Second Floor	SQM	501.00		
	d.	Third Floor	SQM	444.00		
	e.	Terrace Floor	SQM	59.00		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	PLS-03	Providing 20 mm THICK CEMENT PLASTER IN TWO COATS for external wall under layer 12 mm thick cement plaster 1:4 (1 cement: 4 coarse sand) top layer 8 mm thick cement plaster 1:6 (1 cement: 6 fine sand) and finished as specified, including providing necessary plaster grooves at junctions wherever required and for all exterior heights etc. for top layer finish & finished rough with sponge for sand face plaster. The quoted rate shall include addition of approved water-proof compound (dosage as per manufacturer), GI Diamond/plaster mesh for joints, as directed by the Engineer-in-charge at all levels				
		At all levels	SQM	1790.00		
	PLS-04	Providing 15 mm thick sponge finish plastering in duct and lift shaft one coat in CM 1:4 at all levels				
	a.	Lift and duct wall	SQM	489.00		
	PLS-05	Cement plastering as rough plaster 20 mm thick for all cladding, dadoing, in C.M 1:6, including providing & removing scaffolding, curing, hacking etc., complete. With all lead and lift as directed by engineer in charge.				
	a.	Ground Floor	SQM	112.00		
	b.	First Floor	SQM	112.00		
	c.	Second Floor	SQM	112.00		
	d.	Third Floor	SQM	130.00		
		SUB TOTAL-PLASTERING / POINTING				
I	FLR-00	FLOORING & DADOING/CLADDING				
		Note: All flooring item shall be inclusive of providing & removing POP protection with polythene sheet, Acid wash etc., complete				
	FLR-01	Providing & laying of approved quality/colour/size of 900mmx900mm with 19mm thick flame finished Sadarahalli stone flooring laid over 20mm tk CM 1:4 base mortar Bed Jointed with cement slurry @ 4.4kg/Sqm & joints to be filled using match shade water proff tile grout & cleaning etc all as per drawing, specifications & as directed, the rate shall be include of rubbing & polishing ,Cleaning etc., complete				
	a.	Ground Floor	SQM	147.00		
	b.	First Floor	SQM	35.00		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	c.	Second Floor	SQM	35.00		
	d.	Third Floor	SQM	220.00		
	FLR-02	Do-do the same of above but for Staircase including groove, bull nosing & polishing etc.,				
	a.	Ground Floor	SQM	21.00		
	b.	First Floor	SQM	30.00		
	c.	Second Floor	SQM	28.00		
	d.	Third Floor	SQM	28.00		
	FLR-03	Do-do the same of above but for 100mm high Skirting with Chamfered edge finish etc., complete				
	a.	At all levels	RMT	225.00		
	FLR-04	Do-do the same of above but cladding at Lift wall with V groove & Polishing etc., complete	SFT	16.00		
	FLR-05	Providing and Applying clear coat of total dry film thickness shall be of 90 microns in two coats using Nitoflor PUW100 a two component prepacked, water dispersed polyurethane resin system ready for onsite mixing and use. The cured film forms a hard, flexible, matt surface on concrete and other cementitious substrates. shall have following properties Cosolvent free - low VOC/low odour, Abrasion (resistant) and easy to apply. Antifungal - resistant to fungal attack. Weather & UV resistant is rated as green building product, pencil hardness(ASTM D3363)-: > 2H, Impact resistance (ASTM D 2794) \geq 50(cm.kg), Abrasion resistance(ASTM D 4060) (1000g, 1000 cycles)(CS10 wheel) < 35mg, Alcohol(100%) double rub-ASTM D 5402-: >200 , MEK double rub(ASTM D 5402)-: >200 Pull off Adhesion Strength (ASTM D4541) (concrete failure)-: >3N/mm ² ,.supply, mixing coverage and application shall be strictly as per manufacturer instruction.				
	a.	Ground Floor	SQM	133.00		
	b.	First Floor	SQM	209.00		
	c.	Second Floor	SQM	209.00		
	d.	Third Floor	SQM	29.00		
	FLR-06	Do-do the same of above but for Skirting/walls with Nitocote PUW 100 - Wall Coat for Internal and External side (UV resistance) Clear coating system				

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	a.	At all levels	SQM	18.00		
	FLR-07	Do-do the same of FLR-05 but with Pigmented coat etc., complete				
	a.	Ground Floor	SQM	RO		
	b.	First Floor	SQM	RO		
	c.	Second Floor	SQM	RO		
	d.	Third Floor	SQM	RO		
	FLR-08	Do-do the same of FLR-06 for 100mm high skirting with Pigmented coat etc., complete				
	a.	At all levels	SQM	RO		
	FLR-09	Providing and laying of approved quality/colour/size of 450mmx450mm Non-slip Ceramic tile flooring at all levels,laid over 20mm tk CM(1:4) base mortar bed jointed with cement slurry @ 4.4Kg/Sqm ,pointing using matching shade waterproof tile grout and washing finally with diluted hydrochloric acid, all as per drawing, specifications and as directed, complete at Specified Location etc. In toilets(Basic price @ Rs.60/Sft)				
	a.	Ground Floor	SQM	35.00		
	b.	First Floor	SQM	35.00		
	c.	Second Floor	SQM	35.00		
	d.	Third Floor	SQM	39.00		
	FLR-10	Do-do the same of above but for 100mm high Skirting etc., complete				
	a.	At all levels	RMT	205.00		
	FLR-09	Providing & fixing 300x300mm Ceramic tile flooring of specified types and size in DADO on 12 mm tk cement plaster 1:3(1 cement: 3 coarse sand)and jointed with gray cement slurry (at the rate of 3.3 kg cement per sqm) including pointing using matching shade waterproof tile grout,washing finally with diluted hydrochloric acid, all as per drawing, specifications and as directed etc., complete(Basic Price of tile Rs.60/Sft) In toilets				
	a.	Ground Floor	SQM	103.00		
	b.	First Floor	SQM	103.00		
	c.	Second Floor	SQM	103.00		
	d.	Third Floor	SQM	120.00		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	FLR-11	Providing & laying Power floated finish granolithic flooring with 50mm thick C.C(1:2:4)using 20mm & down size granite jelly with topping of CM1:3, laid to proper slope & cut to the required pattern as per specifications,including curing,with all lead & lift as directed by the Engineer- in-charge (Shall be laid as panel by panel and each panel should not be more than 4.0 Sqm)				
	a.	Below PU coat	SQM	580.00		
	FLR-12	Providing and fixing toilet washbasin counter slab of granite stone slab of 20mm thick machine cut to requisite size set over 20mm thick CM 1:3, on existing RCC slab including pointing with tinted white cement, tin - oxide, polishing, curing etc. complete. Rate to include providing fascias and making openings in the marble counter for seating wash basins/sinks etc. and pillar cock. Rate to include sink cutting and edge polishing and rounding of edges, sealing the joints with pigmented mastic etc. as approved and as directed. Plan area shall be measured, with all lead and lift and as directed by Architect /Engineer in charge at all levels and heights.(Basic price of granite Rs.160/Sft)				
	a.	For all toilet Wash counter	SQM	9.00		
	b.	For kitchen and pantry	SQM	6.00		
	c.	In ledge wall coping	SQM	3.00		
	FLR-13	Providing & Laying Flagging Course with 4" thick PCC 1:2:4 & Finished top with 20mm thick CM 1:3 plaster of smooth finish including thraed lining, curing, cost of labour & material atc., complete	SQM	103.00		
		SUB TOTAL-FLOORING & DADOING/CLADDING				
J	PNT-00	PAINTING				
	PNT-01	Providing & applying 12mm thick POP punning to wall including scaffolding etc., complete	SQM	RO		
	PNT-02	Providing & painting 2 or more coats of Plastic emulsion paint of approved colour & shade for ceilings over one coat of primer & ready mixed acrylic putty including necessary centering, scaffolding, cleaning of paint stains where ever necessary including curing etc,complete with all lead & lift as directed by the engineer incharge at all levels(Sequance of work shall be Sanding of existing wall/ceiling + 1st primer + 1st coat readymade acrylic putty+ 2nd coat of readymade acrylic putty + 2nd coat primer + 1st coat of approved shade paint + final coat of approved shade paint)	SQM	RO		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	PNT-03	Providing & painting two or more coats of Low VOC Acrylic Emulsion paint(Jotun Fenomastic matt/Equivalent) of approved colour & shade to internal surfaces over one coat of primer including necessary centering, scaffolding, cleaning of paint stains where ever necessary including curing etc,complete with all lead & lift as directed by the engineer incharge.at all levels(Sequance of work shall be Sanding of existing wall/ceiling + 1st primer + 1st coat readymade acrylic putty+ 2nd coat of readymade acrylic putty + 2nd coat primer + 1st coat of approved shade paint + final coat of approved shade paint)	SQM	2083.00		
	PNT-04	Providing & painting 2 or more coats of Exterior Acrylic Emulsion Paint(Asian Apex/Equivalent)of approved colour & shade to external surfaces over one coat of primer including necessary centering,scaffolding, cleaning of paint stains where ever necessary including curing etc,complete with all lead and lift as directed by the engineer in charge at all levels	SQM	2279.00		
	PNT-05	Providing & Applying Anti-Fungal paint(Jotun Fenomatic Gold/Equivalent) as recommended by manufacturer including providing & removing scaffolding, preparing the plastered surfaces of walls and applying etc.,complete as specified by manufacturer including the cost of all materials, cost of labour, cost of equipment and machinery, work at all levels, leads and lifts, loading and unloading, transportation, and all other incidental charges etc., complete. The work shall be carried out as per the directions of the Engineer-In-Charge	SQM	RO		
		SUB TOTAL-PAINTING				
K	WTP-00	WATERPROOFING				
	NOTE	Sub contractor to be approved by Client/ Architect/Consultants/ Project Managers				
	WTP-01	TOILETS & LIFT PITS				
		Providing waterproofing for the Toilets by chemical method as follows:Brushing,cleaning & hacking the surface area to provide Fosrac Brushbond RFX at 1.0mm/ equivalent acrylic polymer modified cementations waterproof coating with 2 layers one after the other with 1mm tk as per manufacturers' specification.The cost to include 2coats of waterproofing plaster done with 12mm agg fixing in CM1:4 with waterproofing admixture mixing with rough finished to required slope with an avg tk of 40mm with a minimum guarantee period of 10yrs.Note:Plan area shall be the mode of measurement but only lift pit shall be measured & paid on surafce area(Sunken side wall to be considered at 300mm high)	SQM	155.00		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	WTP-02	Providing terrace waterproofing with 1mm thick Fosrac Brush bond RFX acrylic polymer coat above with 2mm thick LDPE sheet above geo textile cloth one above with 75mm thick thermal insulation material as per manufacturer on above with 75mm thick Screed concrete in M20 grade concretemixed with approved water proofing compound like Conplast X421IC (Integral waterproofing compound confirming to IS 2645) on above finished with smooth cement finish with CM 1:4 with thread lining including complete celaning, cove treatment, side wall treatment, inject grouting if required, finish at Rain water outlet etc., comlete	SQM	438.00		
	WTP-03	OH TANK				
		Providing waterproofing for the OH Tanks by injection method by injection grouting the walls at joints/wherever required/specified & providing waterproof plastering in 2 layers in CM1:4 of tk 50mm for floor,25mm forwalls till top slab with waterproof admixture as per Manufacturer's specification approved by consultants with a minimum guarantee period of 10yrs	SQM	35.00		
	WTP-04	Providing cinder concrete in sunken floors at all levels of proportion one part of cement and ten parts of cinder by volume. Cinder available from furnaces of steam boilers using coal fuel onlyshall be used and brick kiln cinder shall not be allowed. The cinder should be cleaned, free from durt and wood ashes and shall pass through IS 3.35 sieve with 50% passing through IS 1.70 sieve and should not contain more than 10% of unburnt carbon and not more than 0.5% of acid soluble sulphates(SO). The cinder should be soaked in water before soaking. The concrete shall be cured for 7 days.	CUM	33.00		
	WTP-05	Providing and fixing 2mm thick LDPE Sheet for Planter box etc.,	SQM	34.00		
	WTP-06	Providing and fixing Geo textile cloth for Planter box etc., complete	SQM	34.00		
		SUB TOTAL-WATERPROOFING				
L	MSL-00	MISCELLANEOUS				
	MSL-01	Providing and Fixing Agrinet sheet with bolt, nuts and accessories on structural steel frame work(Str.steel work shall be paid under relevent items) etc., complete	SQM	438.00		
	MSL-02	Providing and fixing GI plaster stopper etc., complete	RMT	611.00		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	MSL-03	Supplying & Fixing CP 2' length towel rail including CP flange etc.,	NOS	RO		
	MSL-04	Supplying & Fixing CP Paper holder etc., complete	NOS	RO		
	MSL-05	DISMANTLING WORKS				
		Dismantling & disposing due to change in design or layout at all levels by mechanical means using chippers, concrete breakers etc and carting out the demolished debris outside the site premises to a place not objected by civic authorities as directed by the engineer incharge for the following items of work including protective scaffolding or support system if required.				
		The rate shall include cutting of reinforcement by gas cutting & clearing the way for the dismantling of concrete.				
		The rate shall include staking of reinforcement as directed by engineer incharge in the site.				
		The rate shall include necessary safety precautions of the labourers and people working near by.				
	a.	Dismantling Reinforced Concrete structural members without damaging nearby structure or part thereof which is not supposed to be dismantled, during the process of dismantling and stacking usable / recovered steel and disposing the debris outside the site as directed at all heights & levels.	CUM	RO		
	b.	Dismantling specified Mild steel / Cast iron structural members include stacking the dismantled pieces as directed by the engineer at all heights & levels .	MT	RO		
	c.	Dismantling of brick / block masonry and carting away the debris outside the premises as directed at all heights & levels.	SQM	RO		
	d.	Dismantling/Removing the Centering and formwork due to change of design or layout as per instructions.	SQM	RO		
	e.	Dismantling existing RRM / SSM / UCR masonry and carting away the debris outside the premises as directed at all heights & levels.	CUM	RO		
	MSL-06	Drilling with core cutting machine in RCC beams,slabs,floorsetc.,for laying pipes and rendering the same in RCC 1:2:4 finishing the same to the satisfaction of the owner or his authorised representative etc.,including nominal reinforcement wherever required,complete,at all levels The quote shall also include for providing EPOXY based water proofing compound for sealing the joints around the pipes upto 250mm max depth at all heights & levels				
	a.	Up to 32mm dia.	NOS	RO		
	b.	Above 32mm dia and upto 100mm dia.	NOS	RO		
	c.	Above 100mm dia. and up to 200mm dia.	NOS	RO		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	MSL-07	Providing and Fixing 300mm long x 110mm dia PVC pipe of 4ksc sleeve with necessary end caps etc complete				
	a.	For AC units	NOS	RO		
	b.	For Fire sleeve at beams as per drawing (200 to 300 long)	NOS	RO		
	MSL-08	Preparing the unplastered surface on RCC elements by doing sanding, grinding the joints, filling up the voids etc., including staging & scaffolding.	SQM	1446.00		
		SUB TOTAL-WATERPROOFING				

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SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
A	EXE - 00	EARTH WORK EXCAVATION				
	EXE-01	Site Clearing: Cleaning and grubbing for removal of rank, vegetation, shrubs, trees, bushes, stumps, weeds, grass including roots, debris, unusable materials, removal of 150mm thick top soil using manual or mechanical method and disposal of the same by burning or any other means including dumping to approved areas within the project site, stacking usable materials at places shown with all leads and lifts, cost of all labour, hire and fuel charges for all tools and plants employed and all other incidental charges etc., all complete and as directed.	SQM	711.00		
	EXE-02	Earthwork excavation in all types of soil for Footing, Raft, RC wall foundations, Lift pits, Trenches, Under ground sumps etc. stacking the excavated earth & disposable material where ever indicated in site, excluding back filling but including filling depressions and loose pockets wherever necessary including watering, consolidating etc., complete. Rate to include disposing of excess earth within the site and spreading in layers to required levels, shoring, bailing out water, etc. complete. Contractor shall get acquainted with site conditions and soil report and submit method statement for dewatering and getting the surface reasonably dry for laying PCC. Note:Authorized working space shall be considered as per IS 1200(From the Basement Floor Level)				
	a.	Lift upto 1.5M depth	CUM	793.00		
	b.	Lift from 1.50m to 3.0m depth	CUM	53.00		
	EXE-03	Do-do the same of EXE-02 but earth work excavation in Hard rock at all levels with non blasting method like chiseling/compressors including stacking in rectangular/trapezoidal shape,for measurement at ground level as directed etc to complete. Note: 60% of the Stack Qty considered for payment				
	a.	Lift upto 0.0 m to 1.5m depth	CUM	64.00		
	b.	Lift from 1.50m to 3.0m depth	CUM	RO		
	EXE-04	Do-do the same of EXE-02 but for earth work excavation in soft rock at all levels with non blasting method like chiseling including stacking in rectangular/trapezoidal shape,for measurement at ground level as directed etc to complete				
	a.	Lift upto 0.0 m to 1.5m depth	CUM	96.00		
	b.	Lift from 1.50m to 3.0m depth	CUM	RO		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	EXE-05	Back filling in plinths, for sides of foundation, trenches, lift pits, area development else where as directed including breaking clods, watering and consolidating in 150mm thick layers, compacting each layer with vibratory compactor and at inaccessible places with wooden/steel rammers to achieve 90 to 95% proctor density at optimum moisture content, all leads and lifts, bailing/ pumping out water to keep site dry while backfilling cost shall include conveyance of all materials, labour, hire and fuel charges for tools and plants and other incidental charges etc. complete as per detailed specification.				
	a.	With excavated earth available at site	CUM	503.00		
	b.	With approved earth brought from outside.	CUM	1409.00		
	c.	With approved River Sand filling	CUM	120.00		
	EXE-06	Disposing surplus excavated soils of all types outside the site upto a lead of 5 KM including cost of labour, cost of equipment and machinery, loading and unloading, transportation, all other incidental charges at all leads and lifts etc. complete. The work shall be carried out as per the directions of the Engineer-In-Charge.	CUM	503.00		
	EXE-07	Providing, Packing & Laying 150mm Thick (consolidated thickness) hard stone Soling in below flooring, plinth, basement, ramps, drive way & other places including sand cushion of 50mm tk, base preparation by mechanical compaction, using granite hand broken metal/rubble & smaller pebbles for void filling, murrum for binding as directed by the Engineer- in-charge.	CUM	RO		
	EXE-08	Supplying, diluting and injecting chemical emulsion for PRE-CONSTRUCTIONAL Anti-termite treatment and creating a continuous chemical barrier under and all-round the column pits, wall trenches, basement excavation, top surface of plinth filling, junction of wall and floor, along the external perimeter of building, expansion joints, over the top surface of consolidated earth on which apron is to be laid, surroundings of pipes and conduits etc. complete to required depths as per specifications (Plinth area of the building at ground floor only shall be measured for payment). Chlorpyrifos 20% Emulsifiable Concentrate injected with 1% concentration at all levels & heights. Note: Treatment Shall be considered below floor & back fill area at external face retaining wall area	SQM	602.00		
		SUB TOTAL- EARTH WORK EXCAVATION				
B	PCC-00	PLAIN CEMENT CONCRETE				
	PCC-01	Providing & laying 3" thick DAMP PROOF COURSE with cement concrete 1:2:4 (cement: coarse sand: 4 graded stone aggregate 12.5mm nominal size) including mixing of waterproofing admixture of Sika/Fosroc/MC Bauchemie/Roffe or equivalent as per manufacturers specifications etc., complete for SSM topping including shuttering etc., complete	CUM	6.00		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	PCC-02	Providing and laying Plum concrete 1:5:10 wherever specified using river sand, 40mm and down size metal and boulders of 150mm (Proportion 70:30 for concrete : boulder) including sub grade preparation, levelling, compacting, all leads and lifts, rough finishing if required at the top surface, with necessary curing and shuttering etc. complete at all levels.				
	a.	In below footing/Raft	CUM	54.00		
	PCC-03	Providing and laying P.C.C 1:4:8 of specified thickness wherever specified using river sand, 40mm and downsize metal including sub grade preparation, levelling, compacting, all leads and lifts, rough finishing if required at the top surface with necessary curing and shuttering etc. complete at all levels.				
	a.	In below footing/Raft	CUM	27.00		
	b.	In below floor	CUM	60.00		
	PCC-04	Providing and laying Screed concrete in 1:2:4 with 20mm and down graded stone aggregates wherever to required thickness, slope and trowel finished smooth as directed including levelling, compacting, all leads and lifts with necessary curing and shuttering etc. complete at all levels.				
	a.	50mm Average thickness for Toilets above sunken & GF slab	CUM	18.00		
	b.	75mm average thickness for Sill /coping for Window,Parapet etc.,	CUM	6.00		
		SUB TOTAL-PLAIN CEMENT CONCRETE				
C	RCC-00	REINFORCED CEMENT CONCRETE				
	RCC-01	SITE MIX CONCRETE				
		Providing and laying cast in-situ design mix Reinforced Cement Concrete (RCC) using cement, coarse sand, granite, basalt or trap stone graded aggregate 20mm & down as per design & drawing including dewatering, preparing surface, machine batching, machine mixing, pouring in place, mechanical compaction, providing cement cover blocks, making construction joints, finishing, curing etc. complete as directed by the Engineer . The rate to include all labour, material, equipment, plant & machinery, conveyance, lowering, hoisting, wastages and all incidentals excluding formwork and reinforcement which shall be measured & paid for separately.				
	a.	M30 Grade concrete for Footing/Raft	CUM	RO		
	b.	M30 Grade concrete for Column Pedestals	CUM	RO		
	c.	M30 Grade concrete for Plinth Beam	CUM	22.00		
	d.	M30 Grade concrete for Retaining Wall	CUM	4.00		
	RCC-02	Do-do the same of RCC-01 but for Columns with M30 grade concrete at all levels				
	a.	Ground Floor	CUM	36.00		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	b.	First Floor	CUM	31.00		
	c.	Second Floor	CUM	31.00		
	d.	Third Floor	CUM	31.00		
	e.	Terrace Floor	CUM	5.00		
	RCC-03	Do-do the same of RCC-01 but for lift Core wall & shear walls with M30 grade concrete at all levels				
	a.	Ground Floor	CUM	7.00		
	b.	First Floor	CUM	6.00		
	c.	Second Floor	CUM	6.00		
	d.	Third Floor	CUM	6.00		
	e.	Terrace Floor	CUM	5.00		
	RCC-04	Do-do the same of RCC-01 but for Roof slab with M30 Grade at all levels				
	a.	Ground Floor	CUM	RO		
	b.	First Floor	CUM	RO		
	c.	Second Floor	CUM	RO		
	d.	Third Floor	CUM	RO		
	e.	Terrace Floor	CUM	RO		
	RCC-05	Do-do the same of RCC-01 but for Roof Beam with M30 grade concrete at all levels				
	a.	Ground Floor	CUM	RO		
	b.	First Floor	CUM	RO		
	c.	Second Floor	CUM	RO		
	d.	Third Floor	CUM	RO		
	e.	Terrace Floor	CUM	RO		
	RCC-06	Do-do the same of RCC-01 but for Staircase with M30 grade concrete at all levels				
	a.	Ground Floor	CUM	3.00		
	b.	First Floor	CUM	3.00		
	c.	Second Floor	CUM	3.00		
	d.	Third Floor	CUM	3.00		
	RCC-07	Do-do the same of RCC-01 but for Lintel,Chajjas,Loft etc., with M20 grade concrete at all levels	CUM	12.00		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	RCC-08	Do-do the same of RCC-01 but for OHT slab & wall with M20 grade concrete at all levels	CUM	10.00		
	RCC-09	READY MIX CONCRETE				
		Providing, batching, mixing, transporting through transit mixers, pumping and laying Reinforced Cement Concrete of specified grade at all levels and heights specified below using ordinary Portland cement of grade 53 from approved manufacturer, river sand, 20mm and down size coarse aggregates, necessary admixtures approved by Consultants (Conplast SP 430SRV from Fosroc or equivalent), including all leads and lifts, pumping using line pump or boom placer, vibrating/ compaction, scaffolding wherever necessary, curing as directed, excluding cost of shuttering, centering and staging etc				
		(Design mix shall be as approved by the consultants. W/C ratio shall be as per consultants recommendation)-				
	a.	M30 Grade concrete for Footing/Raft	CUM	188.00		
	b.	M30 Grade concrete for Column Pedestals	CUM	12.00		
	c.	M30 Grade concrete for Plinth Beam	CUM	RO		
	d.	M30 Grade concrete for Retaining Wall	CUM	RO		
	RCC-10	Do-do the same of RCC-09 but for Roof slab with M30 grade concrete at all levels				
	a.	Ground Floor	CUM	79.00		
	b.	First Floor	CUM	90.00		
	c.	Second Floor	CUM	92.00		
	d.	Third Floor	CUM	92.00		
	e.	Terrace Floor	CUM	5.00		
	RCC-11	Do-do the same of RCC-09 but for Roof Beam with M30 grade concrete at all levels				
	a.	Ground Floor	CUM	52.00		
	b.	First Floor	CUM	52.00		
	c.	Second Floor	CUM	53.00		
	d.	Third Floor	CUM	53.00		
	e.	Terrace Floor	CUM	2.00		
	RCC-12	Difference in rate for Higher/Lessor Grade of Concrete for all above items at all levels				
	a.	M20(Rebate)	CUM	RO		
	b.	M25 (Rebate)	CUM	RO		
	c.	M35	CUM	RO		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	d.	M40	CUM	RO		
		SUB TOTAL-REINFORCED CEMENT CONCRETE				
D	FRM-00	FORM WORK				
		Note: Rate shall be included under propping with steel jack until upper roof slab concreting & deshuttering etc., complete				
	FRM-01	Providing, fabricating and erecting form work for all RCC works at places wherever needed / specified as per drawing including striking / deshuttering with marine ply board with adjustable steel props to full height and with sufficient bracing etc. complete. Cost to include sealing the joints with heavy duty brown self adhesive tape, applying mould releasing agents (Rebol from Fosroc or equivalent) aligning to line and levels including M S Ties, PVC spacer etc. Complete & as directed at all levels.				
		Formwork shall be designed for rigidity, durability, strength, water tightness, easy deshuttering etc. Formwork designed using new material (approved prior to making), shall be able to withstand its shape, line, dimensions, level within the allowable tolerances. Only steel jacks and steel spans shall be used. Bracing in both directions as specified by the structural engineer shall be provided. Necessary arrangements for providing camber as required shall be made. Formwork shall have adequate openings for cleaning. Formwork for construction joints shall be submitted for approval. All slabs shall be progressively deshuttered and back propped as per instructions by structural engineer.				
		Shuttering below the shrinkage strip at every level shall be retained in place without disturbing for a time as specified by the structural engineer.				
		Shuttering materials shall be film coated plywood of approved thickness for slabs, beams, columns, shear walls, lift walls etc.				
	a.	Footing/Raft	SQM	306.00		
	b.	Column Pedestals	SQM	47.00		
	c.	Plinth Beam	SQM	219.00		
	d.	Retaining wall	SQM	36.00		
	FRM-02	Do-do the same of FRM-01 but for Columns at all levels				
	a.	Ground Floor	SQM	297.00		
	b.	First Floor	SQM	256.00		
	c.	Second Floor	SQM	256.00		
	d.	Third Floor	SQM	256.00		
	e.	Terrace Floor	SQM	47.00		
	FRM-03	Do-do the same of FRM-01 but for RCC Core wall at all levels				
	a.	Ground Floor	SQM	67.00		
	b.	First Floor	SQM	58.00		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	c.	Second Floor	SQM	58.00		
	d.	Third Floor	SQM	58.00		
	e.	Terrace Floor	SQM	45.00		
	FRM-04	Do-do the same of FRM-01 but for Roof slab at all levels				
	a.	Ground Floor	SQM	651.00		
	b.	First Floor	SQM	651.00		
	c.	Second Floor	SQM	651.00		
	d.	Third Floor	SQM	651.00		
	e.	Terrace Floor	SQM	34.00		
	FRM-05	Do-do the same of FRM-01 but for Roof Beam at all levels				
	a.	Ground Floor	SQM	447.00		
	b.	First Floor	SQM	447.00		
	c.	Second Floor	SQM	459.00		
	d.	Third Floor	SQM	459.00		
	e.	Terrace Floor	SQM	25.00		
	FRM-06	Do-do the same of FRM-01 but for Staircase at all levels				
	a.	Ground Floor	SQM	13.00		
	b.	First Floor	SQM	13.00		
	c.	Second Floor	SQM	13.00		
	d.	Third Floor	SQM	13.00		
	FRM-07	Do-do the same of FRM-01 but for Lintel,Chajjas,Loft etc., at all levels	SQM	119.00		
	FRM-08	Do-do the same of FRM-01 but for OHT slab & wall	SQM	44.00		
	FRM-09	Providing Scaffolding to other agencies including working platforms at various levels as required from time to time, erecting and removing the scaffolding, staging as directed including the cost of all materials, cost of labour, cost of equipment and machinery, work at all leads, levels and lifts, loading and unloading, transportation, and all other incidental charges etc., complete for a period of 30days. The work shall be carried out as per the directions of the Engineer-In-Charge	SQM			
	FRM-10	Providing double height staging work for a period of at all levels & heights, with steel scaffolding materials including erection and dismantling charges etc. complete with all lead & lift for all materials & labour and as directed, at all levels & heights.	SQM	RO		
		SUB TOTAL- FORM WORK				

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
E	RST-00	REINFORCING STEEL				
	RST-01	Providing,Fabricating & Placing Reinforcement Steel of High Yield Strength Deformed (HYSD) bars of various diameters of grade Fe 500 conforming to IS codes & make ISPAT or SAIL or VIZAG or TATA including straightening, cutting, bending, hooking, lapping and/or welding wherever required as directed, placing in position, tying with 18G black annealed binding wire double fold, cost of binding wire and anchoring to the adjoining members wherever necessary, all laps and wastages etc. complete as per structural drawings. Rate also to include cost of all materials, cost of labour, cost of equipment and machinery, loading and unloading, transportation, all other incidental charges and work at all leads and lifts etc. complete.				
		Note: Unless noted otherwise the measurements will be in accordance with IS: 1200 or equivalent BS. However reinforcement shall be measured only in lengths of bars as actually placed in position on standard weight basis, no allowance being made in the weight for rolling margin. Authorized laps and splices only will be measured. Chairs of any shape & profile, spacer bar of any shape & profile, concrete cover blocks, wastages, binding wire etc., will not be measured and shall be included in the quoted rates. Quoted rate shall be deemed to have considered the above stipulation.				
		At all levels and heights	MT	119.00		
	RST-02	Providing and fixing reinforcement steel upto 12mm dia., including drilling of holes and fixing the rod using lockset compound as detailed in drawing and as directed.	NOS	RO		
	RST-03	Providing and fixing reinforcement steel from 16mm dia to 20mm dia, including drilling of holes and fixing the rod using lockset compound as detailed in drawing and as directed.	NOS	RO		
	RST-04	Providing and fixing 20mm dia dowel bar anchor to rock (450mm length) with Fosrac lockfix grouting etc.,as per drawing and directed	NOS	362.00		
		SUB TOTAL-REINFORCING STEEL				
F	SST-00	STRUCTURAL STEEL FABRICATION AND ERECTION				

Sl. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	SST-01	Preparing shop drawings, obtaining consultants approval, supplying, fabricating, delivering at site, hoisting and fixing in position, including all temporary staging and supporting work and making all structural steel work in accordance with the design, drawing prepared by the consultant for trusses, purlins, girders, brackets, etc. with connections using plates, channels and angles, gusset plate, foundation bolt, cleats, fasteners etc., steel conforming to IS 226 and IS 2062 with minimum yield strength of 250Mpa and upto 355Mpa. The rate of steel work shall include assembly, welding, jointing, building up new sections, cost of fasteners (nuts, bolts and washers) etc. The rate shall also include one coat zinc rich primer & two coat of Synthetic enamel paint of approved shade after properly cleaning the steel surface, necessary bolts & washers for fixing including grouting of bolts with 1:3 non shrink cement grout etc., complete all as per design, details, drawings, specifications etc. with all lead & lift for all materials & labour and as directed, at all heights & locations	MT	9.00		
	SST-02	Do-do the same of SST-01 but for Spiral Staircase with railing & enamel paint finish over a coat of Zinc coat primer etc., complete	NO	RO		
	SST-03	Supplying fabricating and fixing in position M.S pipe ladder of 450mm width x 3500mm height at all levels with 50mm dia pipe for sides and 32mm dia pipe for steps at 300mm c/c. The rate shall include for necessary anchoring to the walls and fixing in concrete bed. the ladder will be shop painted with one coat of primer and two coats of synthetic enamel paint of approved colour.	NO	1.00		
	SST-04	Providing, Fabricating & fixing 900mm high MS railing with 2" dia B class 16 gauge pipe as railing with 3/4" MS pipe of horizontal members & 2" dia MS pipe for balustrade etc., all inclusive cutting, welding, grouting to floor/masonry, grinding, wastages, labour, and finished with one coat of zinc coat primer with metal putty & two or more coat of specified colour enamel etc., complete(Str.steel shall be taken 18kg/Sqm)	SQM	127.00		
		SUB TOTAL-STRUCTURAL STEEL FABRICATION AND ERECTION				
G	MSR-00	MASONRY				
	MSR-01	Providing and constructing 230mm thick brick masonry in CM 1:6 using approved quality table moulded bricks of minimum 50kg / Sq.cm including raking, curing, scaffolding and staging, lead and lift, in all situations such as walls / pillasters / pillars / stub supports etc. complete as per drawing and as directed at all levels and heights	CUM	RO		
	MSR-02	Do-do the same of above but for periphery plinth level foundation	CUM	132.00		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	MSR-03	Providing and constructing 200mm thick Solid Concrete block work in straight or curved walls, piers and architectural features at all levels using approved solid blocks of strength 35 kg/sqcm in cement mortar 1:6 including curing, scaffolding, staging, packing the residual space between masonry & other structural members like columns, beams, slabs etc., providing openings as directed and finishing neatly around the same, the cost of all materials, cost of labour, cost of equipment and machinery, work at all leads and lifts, loading and unloading, transportation, and all other incidental charges etc., complete. The work shall be carried out as per the directions of the Engineer in charge				
	a.	Ground Floor	SQM	316.00		
	b.	First Floor	SQM	202.00		
	c.	Second Floor	SQM	202.00		
	d.	Third Floor	SQM	240.00		
	e.	Terrace Floor	SQM	242.00		
	MSR-04	Do-do the same of item MSR-02 but with 150mm thick solid block masonry etc., complete at all levels				
	a.	Ground Floor	SQM	215.00		
	b.	First Floor	SQM	240.00		
	c.	Second Floor	SQM	159.00		
	d.	Third Floor	SQM	154.00		
	e.	Terrace Floor	SQM	6.00		
	MSR-05	Providing and constructing 100mm thick Solid Concrete block in straight or curved walls, piers and architectural features at all levels including a concrete band of 75mm thick with 2-nos of 8mm dia reinforcement rod at every fifth course with M20 grade concrete mix including shuttering, staging, scaffolding, centering, formwork, curing, etc., cement mortar of 1:4 including packing the residual space between masonry & other structural members like columns, beams, slabs etc., providing openings as directed and finishing neatly around the same, the cost of all materials including reinforcement steel, cost of labour, cost of equipment and machinery, work at all leads and lifts, loading and unloading, transportation, and all other incidental charges etc., complete. The work shall be carried out as per the directions of the Engineer in charge				
	a.	Ground Floor	SQM	RO		
	b.	First Floor	SQM	104.00		
	c.	Second Floor	SQM	104.00		
	d.	Third Floor	SQM	104.00		
	e.	Terrace Floor	SQM	15.00		
		SUB TOTAL-MASONRY				

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
H	PLS-00	PLASTERING / POINTING				
		Note: All plastering shall be included GI plaster mesh for joints & electrical conduiting area, packing of electrical, plumbing etc., pipes, hacking at Rcc surface, scaffolding, lifting etc.,				
	PLS-01	Cement plastering on internal ceilings 15 mm thickness in C.M. (1:4) finished smooth including corridor ceilings, including providing and removing scaffolding, smooth cement rendering ,curing, hacking etc., complete. With all lead & lift as directed by engineer in charge.				
	a.	Ground Floor	SQM	RO		
	b.	First Floor	SQM	RO		
	c.	Second Floor	SQM	RO		
	d.	Third Floor	SQM	RO		
	e.	Terrace Floor	SQM	RO		
	PLS-02	Prepare the surface and provide 15mm thick plastering on Internal walls, columns, beams, etc., in cement mortar 1:6 finishing to line and level with cement rendering, rounding off all corners wherever required, finished smooth to required profile at all levels and lifts, including GI plaster mesh for joints, scaffolding, curing etc, complete at all levels and heights.				
	a.	Ground Floor	SQM	882.00		
	b.	First Floor	SQM	900.00		
	c.	Second Floor	SQM	758.00		
	d.	Third Floor	SQM	771.00		
	e.	Terrace Floor	SQM	70.00		
	PLS-03	Providing 20 mm THICK CEMENT PLASTER IN TWO COATS for external wall under layer 12 mm thick cement plaster 1:4 (1 cement: 4 coarse sand) top layer 8 mm thick cement plaster 1:6 (1 cement: 6 fine sand)and finished as specified, including providing necessary plaster grooves at junctions wherever required and for all exterior heights etc. for top layer finish & finished rough with sponge for sand face plaster. The quoted rate shall include addition of approved water-proof compound (dosage as per manufacturer),GI Diamond/plaster mesh for joints, as directed by the Engineer-in-charge at all levels				
		At all levels	SQM	3337.00		
	PLS-04	Providing 15 mm thick sponge finish plastering in duct and lift shaft one coat in CM 1:4 at all levels				
	a.	Lift and duct wall	SQM	517.00		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	PLS-05	Cement plastering as rough plaster 20 mm thick for all cladding, dadoing, in C.M 1:6, including providing & removing scaffolding, curing, hacking etc., complete. With all lead and lift as directed by engineer in charge.				
	a.	Ground Floor	SQM	92.00		
	b.	First Floor	SQM	92.00		
	c.	Second Floor	SQM	92.00		
	d.	Third Floor	SQM	92.00		
		SUB TOTAL-PLASTERING / POINTING				
I	FLR-00	FLOORING & DADOING/CLADDING				
		Note: All flooring item shall be inclusive of providing & removing POP protection with polythene sheet, Acid wash etc., complete				
	FLR-01	Providing & laying of approved quality/colour/size of 900mmx900mm with 19mm thick flame finished Sadarahalli stone flooring laid over 20mm tk CM 1:4 base mortor Bed Jointed with cement slurry @ 4.4kg/Sqm & joints to be filled using match shade water proff tile grout & cleaning etc all as per drawing, specifications & as directed, the rate shall be include of rubbing & polishing ,Cleaning etc., complete				
	a.	Ground Floor	SQM	143.00		
	b.	First Floor	SQM	109.00		
	c.	Second Floor	SQM	100.00		
	d.	Third Floor	SQM	106.00		
	FLR-02	Do-do the same of above but for Staircase including groove, bull nosing & polishing etc.,				
	a.	Ground Floor	SQM	18.00		
	b.	First Floor	SQM	18.00		
	c.	Second Floor	SQM	18.00		
	d.	Third Floor	SQM	18.00		
	FLR-03	Do-do the same of above but for 100mm high Skirting with Chamfered edge finish etc., complete				
	a.	At all levels	RMT	213.00		
	FLR-04	Do-do the same of above but cladding at Lift wall with V groove & Polishing etc., complete	SFT	16.00		

Sl. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	FLR-05	Providing and Applying clear coat of total dry film thickness shall be of 90 microns in two coats using Nitoflor PUW100 a two component prepacked, water dispersed polyurethane resin system ready for onsite mixing and use. The cured film forms a hard, flexible, matt surface on concrete and other cementitious substrates. shall have following properties Cosolvent free - low VOC/low odour, Abrasion (resistant) and easy to apply. Antifungal - resistant to fungal attack. Weather & UV resistant is rated as green building product, pencil hardness(ASTM D3363)-: > 2H, Impact resistance (ASTM D 2794) \geq 50(cm.kg),Abrasion resistance(ASTM D 4060) (1000g, 1000 cycles)(CS10 wheel) < 35mg,Alcohol(100%) double rub-ASTM D 5402-: >200 , MEK double rub(ASTM D 5402)-: >200 Pull off Adhesion Strength (ASTM D4541) (concrete failure)-: >3N/mm ² ,.supply, mixing coverage and application shall be strictly as per manufacturer instruction.				
	a.	Ground Floor	SQM	404.00		
	b.	First Floor	SQM	440.00		
	c.	Second Floor	SQM	452.00		
	d.	Third Floor	SQM	444.00		
	FLR-06	Do-do the same of above but for Skirting/walls with Nitocote PUW 100 - Wall Coat for Internal and External side (UV resistance) Clear coating system				
	a.	At all levels	RMT	647.00		
	FLR-07	Do-do the same of FLR-05 but with Pigmented coat etc., complete				
	a.	Ground Floor	SQM	RO		
	b.	First Floor	SQM	RO		
	c.	Second Floor	SQM	RO		
	d.	Third Floor	SQM	RO		
	FLR-08	Do-do the same of FLR-06 for 100mm high skirting with Pigmented coat etc., complete				
	a.	At all levels	RMT	RO		
	FLR-09	Providing and laying of approved quality/colour/size of 450mmx450mm Non-slip Ceramic tile flooring at all levels,laid over 20mm tk CM(1:4) base mortar bed jointed with cement slurry @ 4.4Kg/Sqm ,pointing using matching shade waterproof tile grout and washing finally with diluted hydrochloric acid, all as per drawing, specifications and as directed, complete at Specified Location etc. In toilets				
	a.	Ground Floor	SQM	32.00		
	b.	First Floor	SQM	32.00		
	c.	Second Floor	SQM	32.00		
	d.	Third Floor	SQM	32.00		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	FLR-10	Do-do the same of above but for 100mm high Skirting etc., complete				
	a.	At all levels	RMT	161.00		
	FLR-09	Providing & fixing 300x300mm Ceramic tile flooring of specified types and size in DADO on 12 mm tk cement plaster 1:3(1 cement: 3 coarse sand)and jointed with gray cement slurry (at the rate of 3.3 kg cement per sqm) including pointing using matching shade waterproof tile grout, washing finally with diluted hydrochloric acid, all as per drawing, specifications and as directed etc., complete(Basic Price of tile Rs.60/Sft) In toilets				
	a.	Ground Floor	SQM	85.00		
	b.	First Floor	SQM	85.00		
	c.	Second Floor	SQM	85.00		
	d.	Third Floor	SQM	85.00		
	FLR-11	Providing & laying Power floated finish granolithic flooring with 50mm thick C.C(1:2:4)using 20mm & down size granite jelly with topping of CM1:3, laid to proper slope & cut to the required pattern as per specifications,including curing,with all lead & lift as directed by the Engineer- in-charge (Shall be laid as panel by panel and each panel should not be more than 4.0 Sqm)				
	a.	Below PU coat	SQM	1741.00		
	FLR-12	Providing and fixing toilet washbasin counter slab of granite stone slab of 20mm thick machine cut to requisite size set over 20mm thick CM 1:3, on existing RCC slab including pointing with tinted white cement, tin - oxide, polishing, curing etc. complete. Rate to include providing fascias and making openings in the marble counter for seating wash basins/sinks etc. and pillar cock. Rate to include sink cutting and edge polishing and rounding of edges, sealing the joints with pigmented mastic etc. as approved and as directed. Plan area shall be measured, with all lead and lift and as directed by Architect /Engineer in charge at all levels and heights.(Basic price of granite Rs.160/Sft)				
	a.	For all toilet Wash counter	SQM	9.00		
	b.	For kitchen and pantry	SQM	RO		
	c.	In ledge wall coping	RMT	15.00		
	FLR-13	Providing & Laying Flagging Course with 4" thick PCC 1:2:4 & Finished top with 20mm thick CM 1:3 plaster of smooth finish including thraed lining, curing, cost of labour & material atc., complete	SQM	145.00		
		SUB TOTAL-FLOORING & DADOING/CLADDING				
J	PNT-00	PAINTING				
	PNT-01	Providing & applying 12mm thick POP punning to wall including scaffolding etc., complete	SQM	RO		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	PNT-02	Providing & painting 2 or more coats of Plastic emulsion paint of approved colour & shade for ceilings over one coat of primer & ready mixed acrylic putty including necessary centering, scaffolding, cleaning of paint stains where ever necessary including curing etc,complete with all lead & lift as directed by the engineer incharge at all levels(Sequance of work shall be Sanding of existing wall/ceiling + 1st primer + 1st coat readymade acrylic putty+ 2nd coat of readymade acrylic putty + 2nd coat primer + 1st coat of approved shade paint + final coat of approved shade paint)	SQM	RO		
	PNT-03	Providing & painting two or more coats of Low VOC Acrylic Emulsion paint(Jotun Fenomastic matt/Equivalent) of approved colour & shade to internal surfaces over one coat of primer including necessary centering, scaffolding, cleaning of paint stains where ever necessary including curing etc,complete with all lead & lift as directed by the engineer incharge.at all levels(Sequance of work shall be Sanding of existing wall/ceiling + 1st primer + 1st coat readymade acrylic putty+ 2nd coat of readymade acrylic putty + 2nd coat primer + 1st coat of approved shade paint + final coat of approved shade paint)	SQM	3381.00		
	PNT-04	Providing & painting 2 or more coats of Exterior Acrylic Emulsion Paint(Asian Apex/Equivalent)of approved colour & shade to external surfaces over one coat of primer including necessary centering,scaffolding, cleaning of paint stains where ever necessary including curing etc,complete with all lead and lift as directed by the engineer in charge at all levels	SQM	3854.00		
	PNT-05	Providing & Applying Anti-Fungal paint(Jotun Fenomatic Gold/Equivalent) as recommended by manufacturer including providing & removing scaffolding, preparing the plastered surfaces of walls and applying etc.,complete as specified by manufacturer including the cost of all materials, cost of labour, cost of equipment and machinery, work at all levels, leads and lifts, loading and unloading, transportation, and all other incidental charges etc., complete. The work shall be carried out as per the directions of the Engineer-In-Charge	SQM	RO		
		SUB TOTAL-PAINTING				
K	WTP-00	WATERPROOFING				
	NOTE	Sub contractor to be approved by Client/ Architect/Consultants/ Project Managers				
	WTP-01	TOILETS & LIFT PITS				

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
		Providing waterproofing for the Toilets by chemical method as follows:Brushing, cleaning & hacking the surface area to provide Fosrac Brushbond RFX at 1.0mm/ equivalent acrylic polymer modified cementations waterproof coating with 2 layers one after the other with 1mm tk as per manufacturers' specification.The cost to include 2coats of waterproofing plaster done with 12mm agg fixing in CM1:4 with waterproofing admixture mixing with rough finished to required slope with an avg tk of 40mm with a minimum guarantee period of 10yrs.Note:Plan area shall be the mode of measurement but only lift pit shall be measured & paid on surafce area(Sunken side wall to be considered at 300mm high)	SQM	393.00		
	WTP-02	Providing terrace waterproofing with 1mm thick Fosrac Brush bond RFX acrylic polymer coat above with 2mm thick LDPE sheet above geo textile cloth one above with 75mm thick thermal insulation material as per manufacturer on above with 75mm thick Screed concrete in M20 grade concretemixed with approved water proofing compound like Conplast X4211C (Integral waterproofing compound confirming to IS 2645) on above finished with smooth cement finish with CM 1:4 with thread lining including complete celaning, cove treatment, side wall treatment, inject grouting if required, finish at Rain water outlet etc. , comlete	SQM	578.00		
	WTP-03	OH TANK				
		Providing waterproofing for the OH Tanks by injection method by injection grouting the walls at joints/wherever required/specified & providing waterproof plastering in 2 layers in CM1:4 of tk 50mm for floor,25mm forwalls till top slab with waterproof admixture as per Manufacturer's specification approved by consultants with a minimum guarantee period of 10yrs	SQM	35.00		
	WTP-04	Providing cinder concrete in sunken floors at all levels of proportion one part of cement and ten parts of cinder by volume. Cinder available from furnaces of steam boilers using coal fuel onlyshall be used and brick kiln cinder shall not be allowed. The cinder should be cleaned, free from durt and wood ashes and shall pass through IS 3.35 sieve with 50% passing through IS 1.70 sieve and should not contain more than 10% of unburnt carbon and not more than 0.5% of acid soluble sulphates(SO). The cinder should be soaked in water before soaking. The concrete shall be cured for 7 days.	CUM	111.00		
	WTP-05	Providing and fixing 2mm thick LDPE Sheet for Planter box etc., complete	SQM	125.00		
	WTP-06	Providing and fixing Geo textile cloth for Planter box etc., complete	SQM	125.00		
		SUB TOTAL-WATERPROOFING				
M	MSL-00	MISCELLANEOUS				
	MSL-01	Providing and Fixing Agrinet sheet with bolt, nuts and accessories to existing structural steel members etc., complete	SQM	578.00		
	MSL-02	Providing and fixing GI plaster stopper etc., complete	RMT	1021.00		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	MSL-03	Supplying & Fixing CP 2' length towel rail including CP flange etc., complete	NOS	RO		
	MSL-04	Supplying & Fixing CP Paper holder etc., complete	NOS	RO		
	MSL-05	DISMANTLING WORKS				
		Dismantling & disposing due to change in design or layout at all levels by mechanical means using chippers, concrete breakers etc and carting out the demolished debris outside the site premises to a place not objected by civic authorities as directed by the engineer incharge for the following items of work including protective scaffolding or support system if required.				
		The rate shall include cutting of reinforcement by gas cutting & clearing the way for the dismantling of concrete.				
		The rate shall include staking of reinforcement as directed by engineer incharge in the site.				
		The rate shall include necessary safety precautions of the labourers and people working near by.				
	a.	Dismantling Reinforced Concrete structural members without damaging nearby structure or part thereof which is not supposed to be dismantled, during the process of dismantling and stacking usable / recovered steel and disposing the debris outside the site as directed at all heights & levels.	CUM	RO		
	b.	Dismantling specified Mild steel / Cast iron structural members include stacking the dismantled pieces as directed by the engineer at all heights & levels .	MT	RO		
	c.	Dismantling of brick / block masonry and carting away the debris outside the premises as directed at all heights & levels.	SQM	RO		
	d.	Dismantling/Removing the Centering and formwork due to change of design or layout as per instructions.	SQM	RO		
	e.	Dismantling existing RRM / SSM / UCR masonry and carting away the debris outside the premises as directed at all heights & levels.	CUM	RO		
	MSL-06	Drilling with core cutting machine in RCC beams,slabs,floorsetc.,for laying pipes and rendering the same in RCC 1:2:4 finishing the same to the satisfaction of the owner or his authorised representative etc.,including nominal reinforcement wherever required,complete,at all levels The quote shall also include for providing EPOXY based water proofing compound for sealing the joints around the pipes upto 250mm max depth at all heights & levels				
	a.	Up to 32mm dia.	NOS	RO		
	b.	Above 32mm dia and upto 100mm dia.	NOS	RO		
	c.	Above 100mm dia. and up to 200mm dia.	NOS	RO		
	MSL-07	Providing and Fixing 300mm long x 110mm dia PVC pipe of 4ksc sleeve with necessary end caps etc complete				
	a.	For AC units	NOS	RO		
	b.	For Fire sleeve at beams as per drawing (200 to 300 long)	NOS	RO		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	MSL-08	Preparing the unplastered surface on RCC elements by doing sanding, grinding the joints, filling up the voids etc. , including staging & scaffolding.	SQM	2562.00		
		SUB TOTAL MISCELLANEOUS				

PROPOSED NCSCM BUILDING AT ANNA UNIVERSITY CAMPUS AT CHENNAI.
BILL OF QUANTITY
LABORATORIES/OFFICES & CENTRAL AMENITIES

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
A	EXE - 00	EARTH WORK EXCAVATION				
	EXE-01	Site Clearing: Cleaning and grubbing for removal of rank, vegetation, shrubs, trees, bushes, stumps, weeds, grass including roots, debris, unusable materials, removal of 150mm thick top soil using manual or mechanical method and disposal of the same by burning or any other means including dumping to approved areas within the project site, stacking usable materials at places shown with all leads and lifts, cost of all labour, hire and fuel charges for all tools and plants employed and all other incidental charges etc., all complete and as directed.	SQM	2864.00		
	EXE-02	Earthwork excavation in all types of soil for Footing, Raft, RC wall foundations, Lift pits, Trenches, Under ground sumps etc. stacking the excavated earth & disposable material where ever indicated in site, excluding back filling but including filling depressions and loose pockets wherever necessary including watering, consolidating etc., complete. Rate to include disposing of excess earth within the site and spreading in layers to required levels, shoring, bailing out water, etc. complete. Contractor shall get aquinted with site conditions and soil report and submit method statement for dewatering and getting the surface reasonably dry for laying PCC. Note:Authorised working space shall be considered as per IS 1200(From the Basment Floor Level)				
	a.	Lift upto 1.5M depth	CUM	2825.00		
	b.	Lift from 1.50m to 3.0m depth	CUM	221.00		
	EXE-03	Do-do the same of EXE-02 but earth work excavation in Hard rock at all levels with non blasting method like chiseling/compressors including stacking in rectangular/trapezoidal shape,for measurement at ground level as directed etc to complete. Note: 60% of the Stack Qty considered for payment				
	a.	Lift upto 0.0 m to 1.5m depth	CUM	232.00		
	b.	Lift from 1.50m to 3.0m depth	CUM	RO		
	EXE-04	Do-do the same of EXE-02 but for earth work excavation in soft rock at all levels with non blasting method like chiseling including stacking in rectangular/trapezoidal shape,for measurement at ground level as directed etc to complete				
	a.	Lift upto 0.0 m to 1.5m depth	CUM	347.00		
	b.	Lift from 1.50m to 3.0m depth	CUM	RO		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	EXE-05	Back filling in plinths , for sides of foundation, trenches, lift/pits, area development else where as directed including breaking clods, watering and consolidating in 150mm thick layers, compacting each layer with vibratory compactor and at inaccessible places with wooden/steel rammers to achieve 90 to 95% proctor density at optimum moisture content, all leads and lifts, bailing/pumping out water to keep site dry while backfilling cost shall include conveyance of all materials, labour, hire and fuel charges for tools and plants and other incidental charges etc. complete as per detailed specification.				
	a.	With excavated earth available at site	CUM	1812.00		
	b.	With approved earth brought from outside.	CUM	3495.00		
	c.	With approved River Sand filling	CUM	541.00		
	EXE-06	Disposing surplus excavated soils of all types outside the site upto a lead of 5 KM including cost of labour, cost of equipment and machinery, loading and unloading, transportation, all other incidental charges at all leads and lifts etc. complete. The work shall be carried out as per the directions of the Engineer-In-Charge.	CUM	1812.00		
	EXE-07	Providing, Packing & Laying 150mm Thick (consolidated thickness) hard stone Soling in below flooring, plinth, basement, ramps, drive way & other places including sand cushion of 50mm tk, base preparation by mechanical compaction, using granite hand broken metal/rubble & smaller pebbles for void filling, murrum for binding as directed by the Engineer- in-charge.	CUM	RO		
	EXE-08	Supplying, diluting and injecting chemical emulsion for PRE-CONSTRUCTIONAL Anti-termite treatment and creating a continuous chemical barrier under and all-round the column pits, wall trenches, basement excavation, top surface of plinth filling, junction of wall and floor, along the external perimeter of building, expansion joints, over the top surface of consolidated earth on which apron is to be laid, surroundings of pipes and conduits etc. complete to required depths as per specifications (Plinth area of the building at ground floor only shall be measured for payment). Chlorpyrifos 20% Emulsifiable Concentrate injected with 1% concentration at all levels & heights. Note: Treatment Shall be considered below floor & back fill area at external face retaining wall area	SQM	2707.00		
		SUB TOTAL- EARTH WORK EXCAVATION				
B	PCC-00	PLAIN CEMENT CONCRETE				
	PCC-01	Providing & laying 3" thick DAMP PROOF COURSE with cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 12.5mm nominal size) including mixing of waterproofing admixture of Sika/Fosroc/MC Bauchemie/Roffe or equivalent as per manufacturers specifications etc., complete for SSM topping including shuttering etc., complete	CUM	14.00		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	PCC-02	Providing and laying Plum concrete 1:5:10 wherever specified using river sand, 40mm and down size metal and boulders of 150mm (Proportion 70:30 for concrete : boulder) including sub grade preparation, levelling, compacting, all leads and lifts, rough finishing if required at the top surface, with necessary curing and shuttering etc. complete at all levels.				
	a.	In below footing/Raft	CUM	199.00		
	PCC-03	Providing and laying P.C.C 1:4:8 of specified thickness wherever specified using river sand, 40mm and downsize metal including sub grade preparation, levelling, compacting, all leads and lifts, rough finishing if required at the top surface with necessary curing and shuttering etc. complete at all levels.				
	a.	In below footing/Raft	CUM	100.00		
	b.	In below floor	CUM	271.00		
	PCC-04	Providing and laying Screed concrete in 1:2:4 with 20mm and down graded stone aggregates wherever to required thickness, slope and trowel finished smooth as directed including levelling, compacting, all leads and lifts with necessary curing and shuttering etc. complete at all levels.				
	a.	50mm Average thickness for Toilets above sunken & GF slab	CUM	52.00		
	b.	75mm average thickness for Sill /coping for Window,Parapet etc.,	CUM	20.00		
		SUB TOTAL-PLAIN CEMENT CONCRETE				
C	RCC-00	REINFORCED CEMENT CONCRETE				
	RCC-01	SITE MIX CONCRETE				
		Providing and laying cast in-situ design mix Reinforced Cement Concrete (RCC) using cement, coarse sand, granite, basalt or trap stone graded aggregate 20mm & down as per design & drawing including dewatering, preparing surface, machine batching, machine mixing, pouring in place, mechanical compaction, providing cement cover blocks, making construction joints, finishing, curing etc. complete as directed by the Engineer . The rate to include all labour, material, equipment, plant & machinery, conveyance, lowering, hoisting, wastages and all incidentals excluding formwork and reinforcement which shall be measured & paid for separately.				
	a.	M30 Grade concrete for Footing/Raft	CUM	RO		
	b.	M30 Grade concrete for Column Pedestals	CUM	RO		
	c.	M30 Grade concrete for Plinth Beam	CUM	76.00		
	d.	M30 Grade concrete for Retaining Wall	CUM	13.00		
	RCC-02	Do-do the same of RCC-01 but for Columns with M30 grade concrete at all levels				
	a.	Ground Floor	CUM	117.00		
	b.	First Floor	CUM	101.00		
	c.	Second Floor	CUM	101.00		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	d.	Third Floor	CUM	101.00		
	e.	Terrace Floor	CUM	7.00		
	RCC-03	Do-do the same of RCC-01 but for lift Core wall & shear walls with M30 grade concrete at all levels				
	a.	Ground Floor	CUM	25.00		
	b.	First Floor	CUM	21.00		
	c.	Second Floor	CUM	21.00		
	d.	Third Floor	CUM	21.00		
	e.	Terrace Floor	CUM	17.00		
	RCC-04	Do-do the same of RCC-01 but for Roof slab with M30 Grade at all levels				
	a.	Ground Floor	CUM	RO		
	b.	First Floor	CUM	RO		
	c.	Second Floor	CUM	RO		
	d.	Third Floor	CUM	RO		
	e.	Terrace Floor	CUM	RO		
	RCC-05	Do-do the same of RCC-01 but for Roof Beam with M30 grade concrete at all levels				
	a.	Ground Floor	CUM	RO		
	b.	First Floor	CUM	RO		
	c.	Second Floor	CUM	RO		
	d.	Third Floor	CUM	RO		
	e.	Terrace Floor	CUM	RO		
	RCC-06	Do-do the same of RCC-01 but for Staircase with M30 grade concrete at all levels				
	a.	Ground Floor	CUM	94.00		
	b.	First Floor	CUM	15.00		
	c.	Second Floor	CUM	15.00		
	d.	Third Floor	CUM	12.00		
	RCC-07	Do-do the same of RCC-01 but for Lintel,Chajjas,Loft etc., with M20 grade concrete at all levels	CUM	25.00		
	RCC-08	Do-do the same of RCC-01 but for OHT slab & wall with M20 grade concrete at all levels	CUM	21.00		
	RCC-09	READY MIX CONCRETE				

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
		Providing, batching, mixing, transporting through transit mixers, pumping and laying Reinforced Cement Concrete of specified grade at all levels and heights specified below using ordinary Portland cement of grade 53 from approved manufacturer, river sand, 20mm and down size coarse aggregates, necessary admixtures approved by Consultants (Conplast SP 430SRV from Fosroc or equivalent), including all leads and lifts, pumping using line pump or boom placer, vibrating/ compaction, scaffolding wherever necessary, curing as directed, excluding cost of shuttering, centering and staging etc				
		(Design mix shall be as approved by the consultants. W/C ratio shall be as per consultants recommendation)-				
	a.	M30 Grade concrete for Footing/Raft	CUM	764.00		
	b.	M30 Grade concrete for Column Pedestals	CUM	44.00		
	c.	M30 Grade concrete for Plinth Beam	CUM	RO		
	d.	M30 Grade concrete for Retaining Wall	CUM	RO		
	RCC-10	Do-do the same of RCC-09 but for Roof slab with M30 grade concrete at all levels				
	a.	Ground Floor	CUM	282.00		
	b.	First Floor	CUM	323.00		
	c.	Second Floor	CUM	224.00		
	d.	Third Floor	CUM	323.00		
	e.	Terrace Floor	CUM	22.00		
	RCC-11	Do-do the same of RCC-09 but for Roof Beam with M30 grade concrete at all levels				
	a.	Ground Floor	CUM	169.00		
	b.	First Floor	CUM	175.00		
	c.	Second Floor	CUM	111.00		
	d.	Third Floor	CUM	175.00		
	e.	Terrace Floor	CUM	10.00		
	RCC-12	Difference in rate for Higher/Lessor Grade of Concrete for all above items at all levels				
	a.	M20(Rebate)	CUM	RO		
	b.	M25 (Rebate)	CUM	RO		
	c.	M35	CUM	RO		
	d.	M40	CUM	RO		
		SUB TOTAL-REINFORCED CEMENT CONCRETE				
D	FRM-00	FORM WORK				

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
		Note: Rate shall be included under propping with steel jack until upper roof slab concreting & deshuttering etc., complete				
	FRM-01	Providing, fabricating and erecting form work for all RCC works at places wherever needed / specified as per drawing including striking / deshuttering with marine ply board with adjustable steel props to full height and with sufficient bracing etc. complete. Cost to include sealing the joints with heavy duty brown self adhesive tape, applying mould releasing agents (Rebol from Fosroc or equivalent) aligning to line and levels including M S Ties, PVC spacer etc. Complete & as directed at all levels.				
		Formwork shall be designed for rigidity, durability, strength, water tightness, easy deshuttering etc. Formwork designed using new material (approved prior to making), shall be able to withstand its shape, line, dimensions, level within the allowable tolerances. Only steel jacks and steel spans shall be used. Bracing in both directions as specified by the structural engineer shall be provided. Necessary arrangements for providing camber as required shall be made. Formwork shall have adequate openings for cleaning. Formwork for construction joints shall be submitted for approval. All slabs shall be progressively deshuttered and back propped as per instructions by structural engineer.				
		Shuttering below the shrinkage strip at every level shall be retained in place without disturbing for a time as specified by the structural engineer.				
		Shuttering materials shall be film coated plywood of approved thickness for slabs, beams, columns, shear walls, lift walls etc.				
	a.	Footing/Raft	SQM	1171.00		
	b.	Column Pedestals	SQM	176.00		
	c.	Plinth Beam	SQM	765.00		
	d.	Retaining wall	SQM	131.00		
	FRM-02	Do-do the same of FRM-01 but for Columns at all levels				
	a.	Ground Floor	SQM	1045.00		
	b.	First Floor	SQM	902.00		
	c.	Second Floor	SQM	902.00		
	d.	Third Floor	SQM	902.00		
	e.	Terrace Floor	SQM	89.00		
	FRM-03	Do-do the same of FRM-01 but for RCC Core wall at all levels				
	a.	Ground Floor	SQM	248.00		
	b.	First Floor	SQM	214.00		
	c.	Second Floor	SQM	214.00		
	d.	Third Floor	SQM	214.00		
	e.	Terrace Floor	SQM	168.00		
	FRM-04	Do-do the same of FRM-01 but for Roof slab at all levels				

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	a.	Ground Floor	SQM	2248.00		
	b.	First Floor	SQM	2357.00		
	c.	Second Floor	SQM	1542.00		
	d.	Third Floor	SQM	2357.00		
	e.	Terrace Floor	SQM	161.00		
	FRM-05	Do-do the same of FRM-01 but for Roof Beam at all levels				
	a.	Ground Floor	SQM	1441.00		
	b.	First Floor	SQM	1508.00		
	c.	Second Floor	SQM	932.00		
	d.	Third Floor	SQM	1508.00		
	e.	Terrace Floor	SQM	127.00		
	FRM-06	Do-do the same of FRM-01 but for Staircase at all levels				
	a.	Ground Floor	SQM	108.00		
	b.	First Floor	SQM	92.00		
	c.	Second Floor	SQM	92.00		
	d.	Third Floor	SQM	74.00		
	FRM-07	Do-do the same of FRM-01 but for Lintel,Chajjas,Loft etc., at all levels	SQM	248.00		
	FRM-08	Do-do the same of FRM-01 but for OHT slab & wall	SQM	89.00		
	FRM-09	Providing Scaffolding to other agencies including working platforms at various levels as required from time to time, erecting and removing the scaffolding, staging as directed including the cost of all materials, cost of labour, cost of equipment and machinery, work at all leads, levels and lifts, loading and unloading, transportation, and all other incidental charges etc., complete for a period of 30days. The work shall be carried out as per the directions of the Engineer-In-Charge	SQM			
	FRM-10	Providing double height staging work for a period of at all levels & heights, with steel scaffolding materials including erection and dismantling charges etc. complete with all lead & lift for all materials & labour and as directed, at all levels & heights.	SQM	RO		
		SUB TOTAL- FORM WORK				
E	RST-00	REINFORCING STEEL				

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	RST-01	Providing,Fabricating & Placing Reinforcement Steel of High Yield Strength Deformed (HYSD) bars of various diameters of grade Fe 500 conforming to IS codes & make ISPAT or SAIL or VIZAG or TATA including straightening, cutting, bending, hooking, lapping and/or welding wherever required as directed, placing in position, tying with 18G black annealed binding wire double fold, cost of binding wire and anchoring to the adjoining members wherever necessary, all laps and wastages etc. complete as per structural drawings. Rate also to include cost of all materials, cost of labour, cost of equipment and machinery, loading and unloading, transportation, all other incidental charges and work at all leads and lifts etc. complete.				
		Note: Unless noted otherwise the measurements will be in accordance with IS: 1200 or equivalent BS. However reinforcement shall be measured only in lengths of bars as actually placed in position on standard weight basis, no allowance being made in the weight for rolling margin. Authorized laps and splices only will be measured. Chairs of any shape & profile, spacer bar of any shape & profile, concrete cover blocks, wastages, binding wire etc., will not be measured and shall be included in the quoted rates. Quoted rate shall be deemed to have considered the above stipulation.				
		At all levels and heights	MT	411.00		
	RST-02	Providing and fixing reinforcement steel upto 12mm dia., including drilling of holes and fixing the rod using lockset compound as detailed in drawing and as directed.	NOS	RO		
	RST-03	Providing and fixing reinforcement steel from 16mm dia to 20mm dia, including drilling of holes and fixing the rod using lockset compound as detailed in drawing and as directed.	NOS	RO		
	RST-04	Providing and fixing 20mm dia dowel bar anchor to rock (450mm length) with Fosrac lockfix grouting etc.,as per drawing and directed	NOS	1308.00		
		SUB TOTAL-REINFORCING STEEL				
F	SST-00	STRUCTURAL STEEL FABRICATION AND ERECTION				

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	SST-01	Preparing shop drawings, obtaining consultants approval, supplying, fabricating, delivering at site, hoisting and fixing in position, including all temporary staging and supporting work and making all structural steel work in accordance with the design, drawing prepared by the consultant for trusses, purlins, girders, brackets, etc. with connections using plates, channels and angles, gusset plate, foundation bolt, cleats, fasteners etc., steel conforming to IS 226 and IS 2062 with minimum yield strength of 250Mpa and upto 355Mpa. The rate of steel work shall include assembly, welding, jointing, building up new sections, cost of fasteners (nuts, bolts and washers) etc. The rate shall also include one coat zinc rich primer & two coat of Synthetic enamel paint of approved shade after properly cleaning the steel surface, necessary bolts & washers for fixing including grouting of bolts with 1:3 non shrink cement grout etc., complete all as per design, details, drawings, specifications etc. with all lead & lift for all materials & labour and as directed, at all heights & locations	MT	33.00		
	SST-02	Do-do the same of SST-01 but for Spiral Staircase with railing & enamel paint finish over a coat of Zinc coat primer etc., complete	NO	RO		
	SST-03	Supplying fabricating and fixing in position M.S pipe ladder of 450mm width x 3500mm height at all levels with 50mm dia pipe for sides and 32mm dia pipe for steps at 300mm c/c. The rate shall include for necessary anchoring to the walls and fixing in concrete bed. the ladder will be shop painted with one coat of primer and two coats of synthetic enamel paint of approved colour.	NO	1.00		
	SST-04	Providing, Fabricating & fixing 900mm high MS railing with 2" dia B class 16 gauge pipe as railing with 3/4" MS pipe of horizontal members & 2" dia MS pipe for balustrade etc., all inclusive cutting, welding, grouting to floor/masonry, grinding, wastages, labour, and finished with one coat of zinc coat primer with metal putty & two or more coat of specified colour enamel etc., complete(Str. steel shall be taken 18kg/Sqm)	SQM	122.00		
		SUB TOTAL-STRUCTURAL STEEL FABRICATION AND ERECTION				
G	MSR-00	MASONRY				
	MSR-01	Providing and constructing 230mm thick brick masonry in CM 1:6 using approved quality table moulded bricks of minimum 50kg / Sq.cm including raking, curing, scaffolding and staging, lead and lift, in all situations such as walls / pillasters / pillars / stub supports etc. complete as per drawing and as directed at all levels and heights	CUM	RO		
	MSR-02	Do-do the same of above but for periphery plinth level foundation	CUM	349.00		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	MSR-03	Providing and constructing 200mm thick Solid Concrete block work in straight or curved walls, piers and architectural features at all levels using approved solid blocks of strength 35 kg/sqcm in cement mortar 1:6 including curing, scaffolding, staging, packing the residual space between masonry & other structural members like columns, beams, slabs etc., providing openings as directed and finishing neatly around the same, the cost of all materials, cost of labour, cost of equipment and machinery, work at all leads and lifts, loading and unloading, transportation, and all other incidental charges etc., complete. The work shall be carried out as per the directions of the Engineer in charge				
	a.	Ground Floor	SQM	1324.00		
	b.	First Floor	SQM	1349.00		
	c.	Second Floor	SQM	1390.00		
	d.	Third Floor	SQM	1113.00		
	e.	Terrace Floor	SQM	163.00		
	MSR-04	Do-do the same of item MSR-02 but with 150mm thick solid block masonry etc., complete at all levels				
	a.	Ground Floor	SQM	807.00		
	b.	First Floor	SQM	560.00		
	c.	Second Floor	SQM	679.00		
	d.	Third Floor	SQM	434.00		
	e.	Terrace Floor	SQM	32.00		
	MSR-05	Providing and constructing 100mm thick Solid Concrete block in straight or curved walls, piers and architectural features at all levels including a concrete band of 75mm thick with 2-nos of 8mm dia reinforcement rod at every fifth course with M20 grade concrete mix including shuttering, staging, scaffolding, centering, formwork, curing, etc., cement mortar of 1:4 including packing the residual space between masonry & other structural members like columns, beams, slabs etc., providing openings as directed and finishing neatly around the same, the cost of all materials including reinforcement steel, cost of labour, cost of equipment and machinery, work at all leads and lifts, loading and unloading, transportation, and all other incidental charges etc., complete. The work shall be carried out as per the directions of the Engineer in charge				
	a.	Ground Floor	SQM	RO		
	b.	First Floor	SQM	256.00		
	c.	Second Floor	SQM	243.00		
	d.	Third Floor	SQM	223.00		
	e.	Terrace Floor	SQM	RO		
		SUB TOTAL-MASONRY				
H	PLS-00	PLASTERING / POINTING				

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
		Note: All plastering shall be included GI plaster mesh for joints & electrical conduiting area, packing of electrical, plumbing etc., pipes, hacking at Rcc surface, scaffolding, lifting etc.,				
	PLS-01	Cement plastering on internal ceilings 15 mm thickness in C.M. (1:4) finished smooth including corridor ceilings, including providing and removing scaffolding, smooth cement rendering, curing, hacking etc., complete. With all lead & lift as directed by engineer in charge.				
	a.	Ground Floor	SQM	RO		
	b.	First Floor	SQM	RO		
	c.	Second Floor	SQM	RO		
	d.	Third Floor	SQM	RO		
	e.	Terrace Floor	SQM	RO		
	PLS-02	Prepare the surface and provide 15mm thick plastering on Internal walls, columns, beams, etc., in cement mortar 1:6 finishing to line and level with cement rendering, rounding off all corners wherever required, finished smooth to required profile at all levels and lifts, including GI plaster mesh for joints, scaffolding, curing etc, complete at all levels and heights.				
	a.	Ground Floor	SQM	4088.00		
	b.	First Floor	SQM	2651.00		
	c.	Second Floor	SQM	3170.00		
	d.	Third Floor	SQM	1794.00		
	e.	Terrace Floor	SQM	117.00		
	PLS-03	Providing 20 mm THICK CEMENT PLASTER IN TWO COATS for external wall under layer 12 mm thick cement plaster 1:4 (1 cement: 4 coarse sand) top layer 8 mm thick cement plaster 1:6 (1 cement: 6 fine sand) and finished as specified, including providing necessary plaster grooves at junctions wherever required and for all exterior heights etc. for top layer finish & finished rough with sponge for sand face plaster. The quoted rate shall include addition of approved water-proof compound (dosage as per manufacturer), GI Diamond/plaster mesh for joints, as directed by the Engineer-in-charge at all levels				
		At all levels	SQM	11639.00		
	PLS-04	Providing 15 mm thick sponge finish plastering in duct and lift shaft one coat in CM 1:4 at all levels				
	a.	Lift and duct wall	SQM	1582.00		
	PLS-05	Cement plastering as rough plaster 20 mm thick for all cladding, dadoing, in C.M 1:6, including providing & removing scaffolding, curing, hacking etc., complete. With all lead and lift as directed by engineer in charge.				

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	a.	Ground Floor	SQM	349.00		
	b.	First Floor	SQM	317.00		
	c.	Second Floor	SQM	317.00		
	d.	Third Floor	SQM	181.00		
		SUB TOTAL-PLASTERING / POINTING				
I	FLR-00	FLOORING & DADOING/CLADDING				
		Note: All flooring item shall be inclusive of providing & removing POP protection with polythene sheet, Acid wash etc. , complete				
	FLR-01	Providing & laying of approved quality/colour/size of 900mmx900mm with 19mm thick flame finished Sadarahalli stone flooring laid over 20mm tk CM 1:4 base mortar Bed Jointed with cement slurry @ 4.4kg/Sqm & joints to be filled using match shade water proff tile grout & cleaning etc all as per drawing, specifications & as directed,the rate shall be include of rubbing & polishing ,Cleaning etc. , complete				
	a.	Ground Floor	SQM	704.00		
	b.	First Floor	SQM	303.00		
	c.	Second Floor	SQM	303.00		
	d.	Third Floor	SQM	234.00		
	FLR-02	Do-do the same of above but for Staircase including groove,bull nosing & polishing etc. ,				
	a.	Ground Floor	SQM	74.00		
	b.	First Floor	SQM	74.00		
	c.	Second Floor	SQM	74.00		
	d.	Third Floor	SQM	23.00		
	FLR-03	Do-do the same of above but for 100mm high Skirting with Chamfered edge finish etc. , complete				
	a.	At all levels	RMT	1079.00		
	FLR-04	Do-do the same of above but cladding at Lift wall with V groove & Polishing etc. , complete	SFT	58.00		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	FLR-05	Providing and Applying clear coat of total dry film thickness shall be of 90 microns in two coats using Nitoflor PUW100 a two component prepacked, water dispersed polyurethane resin system ready for onsite mixing and use. The cured film forms a hard, flexible, matt surface on concrete and other cementitious substrates. shall have following properties Cosolvent free - low VOC/low odour, Abrasion (resistant) and easy to apply. Antifungal - resistant to fungal attack. Weather & UV resistant is rated as green building product, pencil hardness(ASTM D3363)-: > 2H, Impact resistance (ASTM D 2794) \geq 50(cm.kg),Abrasion resistance(ASTM D 4060) (1000g, 1000 cycles)(CS10 wheel) < 35mg,Alcohol(100%) double rub-ASTM D 5402-: >200 , MEK double rub(ASTM D 5402)-: >200 Pull off Adhesion Strength (ASTM D4541) (concrete failure)-: >3N/mm ² ,.supply, mixing coverage and application shall be strictly as per manufacturer instruction.				
	a.	Ground Floor	SQM	647.00		
	b.	First Floor	SQM	753.00		
	c.	Second Floor	SQM	989.00		
	d.	Third Floor	SQM	360.00		
	FLR-06	Do-do the same of above but for Skirting/walls with Nitocote PUW 100 - Wall Coat for Internal and External side (UV resistance) Clear coating system				
	a.	At all levels	SQM	127.00		
	FLR-06a	Do-do the same of FLR-05 but for Staircase				
	a.	Ground Floor	SQM	62.00		
	b.	First Floor	SQM	62.00		
	c.	Second Floor	SQM	62.00		
	d.	Third Floor	SQM	62.00		
	FLR-07	Do-do the same of FLR-05 but with Pigmented coat etc., complete				
	a.	Ground Floor	SQM	336.00		
	b.	First Floor	SQM	268.00		
	c.	Second Floor	SQM	267.00		
	d.	Third Floor	SQM	106.00		
	FLR-08	Do-do the same of FLR-06 for 100mm high skirting with Pigmented coat etc., complete				
	a.	At all levels	SQM	47.00		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	FLR-09	Providing and laying of approved quality/colour/size of 450mmx450mm Non-slip Ceramic tile flooring at all levels,laid over 20mm tk CM(1:4) base mortar bed jointed with cement slurry @ 4.4Kg/Sqm ,pointing using matching shade waterproof tile grout and washing finally with diluted hydrochloric acid, all as per drawing, specifications and as directed, complete at Specified Location etc. In toilets				
	a.	Ground Floor	SQM	163.00		
	b.	First Floor	SQM	109.00		
	c.	Second Floor	SQM	109.00		
	d.	Third Floor	SQM	54.00		
	FLR-10	Do-do the same of above but for 100mm high Skirting etc., complete				
	a.	At all levels	RMT	536.00		
	FLR-09	Providing & fixing 300x300mm Ceramic tile flooring of specified types and size in DADO on 12 mm tk cement plaster 1:3(1 cement: 3 coarse sand)and jointed with gray cement slurry (at the rate of 3.3 kg cement per sqm) including pointing using matching shade waterproof tile grout,washing finally with diluted hydrochloric acid, all as per drawing, specifications and as directed etc., complete(Basic Price of tile Rs.60/Sft) In toilets				
	a.	Ground Floor	SQM	349.00		
	b.	First Floor	SQM	302.00		
	c.	Second Floor	SQM	302.00		
	d.	Third Floor	SQM	172.00		
	FLR-11	Providing & laying Power floated finish granolithic flooring with 50mm thick C.C(1:2:4)using 20mm & down size granite jelly with topping of CM1:3, laid to proper slope & cut to the required pattern as per specifications,including curing,with all lead & lift as directed by the Engineer- in-charge (Shall be laid as panel by panel and each panel should not be more than 4.0 Sqm)				
	a.	Below PU coat Flooring	SQM	3925.00		
	FLR-12	Providing and fixing toilet washbasin counter slab of granite stone slab of 20mm thick machine cut to requisite size set over 20mm thick CM 1:3, on existing RCC slab including pointing with tinted white cement, tin - oxide, polishing, curing etc. complete. Rate to include providing fascias and making openings in the marble counter for seating wash basins/sinks etc. and pillar cock. Rate to include sink cutting and edge polishing and rounding of edges, sealing the joints with pigmented mastic etc. as approved and as directed. Plan area shall be measured, with all lead and lift and as directed by Architect /Engineer in charge at all levels and heights.(Basic price of granite Rs.160/Sft)				
	a.	For all toilet Wash counter	SQM	21.00		
	b.	For kitchen and pantry	SQM	5.00		
	c.	In ledge wall coping	RMT	62.00		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	FLR-13	Providing & Laying Flagging Course with 4" thick PCC 1:2:4 & Finished top with 20mm thick CM 1:3 plaster of smooth finish including thraed lining, curing, cost of labour & material atc., complete	SQM	339.00		
		SUB TOTAL-FLOORING & DADOING/CLADDING				
J	PNT-00	PAINTING				
	PNT-01	Providing & applying 12mm thick POP punning to wall including scaffolding etc., complete	SQM	RO		
	PNT-02	Providing & painting 2 or more coats of Plastic emulsion paint of approved colour & shade for ceilings over one coat of primer & ready mixed acrylic putty including necessary centering, scaffolding, cleaning of paint stains where ever necessary including curing etc,complete with all lead & lift as directed by the engineer incharge at all levels(Sequance of work shall be Sanding of existing wall/ceiling + 1st primer + 1st coat readymade acrylic putty+ 2nd coat of readymade acrylic putty + 2nd coat primer + 1st coat of approved shade paint + final coat of approved shade paint)	SQM	RO		
	PNT-03	Providing & painting two or more coats of Low VOC Acrylic Emulsion paint(Jotun Fenomastic matt/Equivalent) of approved colour & shade to internal surfaces over one coat of primer including necessary centering, scaffolding, cleaning of paint stains where ever necessary including curing etc,complete with all lead & lift as directed by the engineer incharge. at all levels(Sequance of work shall be Sanding of existing wall/ceiling + 1st primer + 1st coat readymade acrylic putty+ 2nd coat of readymade acrylic putty + 2nd coat primer + 1st coat of approved shade paint + final coat of approved shade paint)	SQM	11820.00		
	PNT-04	Providing & painting 2 or more coats of Exterior Acrylic Emulsion Paint(Asian Apex/Equivalent)of approved colour & shade to external surfaces over one coat of primer including necessary centering,scaffolding, cleaning of paint stains where ever necessary including curing etc,complete with all lead and lift as directed by the engineer in charge at all levels	SQM	13221.00		
	PNT-05	Providing & Applying Anti-Fungal paint(Jotun Fenomatic Gold/Equivalent) as recommended by manufacturer including providing & removing scaffolding, preparing the plastered surfaces of walls and applying etc.,complete as specified by manufacturer including the cost of all materials, cost of labour, cost of equipment and machinery, work at all levels, leads and lifts, loading and unloading, transportation, and all other incidental charges etc., complete. The work shall be carried out as per the directions of the Engineer-In-Charge	SQM	1710.00		
		SUB TOTAL-PAINTING				
K	WTP-00	WATERPROOFING				
	NOTE	Sub contractor to be approved by Client/ Architect/Consultants/ Project Managers				
	WTP-01	TOILETS & LIFT PITS				

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
		Providing waterproofing for the Toilets by chemical method as follows:Brushing,cleaning & hacking the surface area to provide Fosrac Brushbond RFX at 1.0mm/ equivalent acrylic polymer modified cementations waterproof coating with 2 layers one after the other with 1mm tk as per manufacturers' specification.The cost to include 2coats of waterproofing plaster done with 12mm agg fixing in CM1:4 with waterproofing admixture mixing with rough finished to required slope with an avg tk of 40mm with a minimum guarantee period of 10yrs.Note:Plan area shall be the mode of measurement but only lift pit shall be measured & paid on surafce area(Sunken side wall to be considered at 300mm high)	SQM	1104.00		
	WTP-02	Providing terrace waterproofing with 1mm thick Fosrac Brush bond RFX acrylic polymer coat above with 2mm thick LDPE sheet above geo textile cloth one above with 75mm thick thermal insulation material as per manufacturer on above with 75mm thick Screed concrete in M20 grade concretemixed with approved water proofing compound like Conplast X421IC (Integral waterproofing compound confirming to IS 2645) on above finished with smooth cement finish with CM 1:4 with thread lining including complete celaning, cove treatment, side wall treatment, inject grouting if required, finish at Rain water outlet etc., complete	SQM	2058.00		
	WTP-03	OH TANK				
		Providing waterproofing for the OH Tanks by injection method by injection grouting the walls at joints/wherever required/specified & providing waterproof plastering in 2 layers in CM1:4 of tk 50mm for floor,25mm forwalls till top slab with waterproof admixture as per Manufacturer's specification approved by consultants with a minimum guarantee period of 10yrs	SQM	70.00		
	WTP-04	Providing cinder concrete in sunken floors at all levels of proportion one part of cement and ten parts of cinder by volume. Cinder available from furnaces of steam boilers using coal fuel onlyshall be used and brick kiln cinder shall not be allowed. The cinder should be cleaned, free from durt and wood ashes and shall pass through IS 3.35 sieve with 50% passing through IS 1.70 sieve and should not contain more than 10% of unburnt carbon and not more than 0.5% of acid soluble sulphates(SO). The cinder should be soaked in water before soaking. The concrete shall be cured for 7 days.	CUM	313.00		
	WTP-05	Providing and fixing 2mm thick LDPE Sheet for Planter box etc., complete	SQM	300.00		
	WTP-06	Providing and fixing Geo textile cloth for Planter box etc., complete	SQM	300.00		
		SUB TOTAL-WATERPROOFING				
M	MSL-00	MISCELLANEOUS				
	MSL-01	Providing and Fixing Agrinet sheet with bolt, nuts and accessories to existing structural steel members etc., complete	SQM	2058.00		
	MSL-02	Providing and fixing Expansion joint at floor & beam with Aluminum profile(Décor market/Equivalent make)	RMT	21.00		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	MSL-03	Providing expansion joint between structural members by fixing 25mm thick asphalt impregnated soft board and finishing the expansion joint neatly as per detailed drawing and as directed.	SQM	4.00		
	MSL-04	Sealing the expansion joint with 25mm x15mm approved quality polymer based silicone sealant from external as well as internal walls with 25mm dia polyurethane profile backing as per manufacturers requirement and as directed.	SQM	4.00		
	MSL-05	Providing and fixing GI plaster stopper etc., complete	RMT	3360.00		
	MSL-06	Supplying & Fixing CP 2' length towel rail including CP flange etc., complete	NOS	RO		
	MSL-07	Supplying & Fixing CP Paper holder etc., complete	NOS	RO		
	MSL-08	DISMANTLING WORKS				
		Dismantling & disposing due to change in design or layout at all levels by mechanical means using chippers, concrete breakers etc and carting out the demolished debris outside the site premises to a place not objected by civic authorities as directed by the engineer incharge for the following items of work including protective scaffolding or support system if required.				
		The rate shall include cutting of reinforcement by gas cutting & clearing the way for the dismantling of concrete.				
		The rate shall include staking of reinforcement as directed by engineer incharge in the site.				
		The rate shall include necessary safety precautions of the labourers and people working near by.				
	a.	Dismantling Reinforced Concrete structural members without damaging nearby structure or part thereof which is not supposed to be dismantled, during the process of dismantling and stacking usable / recovered steel and disposing the debris outside the site as directed at all heights & levels.	CUM	RO		
	b.	Dismantling specified Mild steel / Cast iron structural members include stacking the dismantled pieces as directed by the engineer at all heights & levels .	MT	RO		
	c.	Dismantling of brick / block masonry and carting away the debris outside the premises as directed at all heights & levels.	SQM	RO		
	d.	Dismantling/Removing the Centering and formwork due to change of design or layout as per instructions.	SQM	RO		
	e.	Dismantling existing RRM / SSM / UCR masonry and carting away the debris outside the premises as directed at all heights & levels.	CUM	RO		
	MSL-09	Drilling with core cutting machine in RCC beams,slabs,floorsetc.,for laying pipes and rendering the same in RCC 1:2:4 finishing the same to the satisfaction of the owner or his authorised representative etc.,including nominal reinforcement wherever required,complete,at all levels The quote shall also include for providing EPOXY based water proofing compound for sealing the joints around the pipes upto 250mm max depth at all heights & levels				
	a.	Up to 32mm dia.	NOS	RO		
	b.	Above 32mm dia and upto 100mm dia.	NOS	RO		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	c.	Above 100mm dia. and up to 200mm dia.	NOS	RO		
	MSL-10	Providing and Fixing 300mm long x 110mm dia PVC pipe of 4ksc sleeve with necessary end caps etc complete				
	a.	For AC units	NOS	RO		
	b.	For Fire sleeve at beams as per drawing (200 to 300 long)	NOS	RO		
	MSL-11	Preparing the unplastered surface on RCC elements by doing sanding, grinding the joints, filling up the voids etc., including staging & scaffolding.	SQM	8330.00		
		SUB TOTAL MISCELLANEOUS				

PROPOSED NCSCM BUILDING AT ANNA UNIVERSITY CAMPUS AT CHENNAI.
BILL OF QUANTITY
EXTERNAL DEVELOPMENT

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
A	EXE - 00	EARTH CUTTING AND FILLING				
	EXE-01	General earthwork excavation in all types of soil by mechanical means for levelling & lowering the ground other than in foundation upto the Basement formation level stacking the excavated earth & disposable material where ever indicated in site, excluding back filling but including filling depressions and loose pockets wherever necessary including watering, consolidating etc., complete. Rate to include disposing of excess earth within the site and spreading in layers to required levels, shoring, bailing out water, removal of slurry generated while excavation etc. complete. Contractor shall get aquented with site conditions, nature of soil and adopt suitable adequate dewatering system as deemed fit for the nature of soil and prevailing water table to get the surface reasonably dry for laying pcc at the time of execution so that execution will not be hampered or delayed.. (Backfilling and disposal of earth outside the site premises shall be payable separately) NOTE:Authorized working space shall be considered for as per IS 1200.				
	a.	Lift upto 0.0 m to 1.5m depth	CUM	3946.00		
	b.	Lift from 1.50m to 3.0m depth	CUM	RO		
	EXE-02	Back filling in plinths, for sides of foundation, trenches, liftpits, area developement else where as directed including breaking clods, watering and consolidating in 150mm thick layers, compacting each layer with vibratory compactor and at inaccessible places with wooden/steel rammers to achieve 90 to 95% proctor density at optimum moisture content, all leads and lifts, bailing/ pumping out water to keep site dry while backfilling cost shall include conveyance of all materials, labour, ,hire and fuel charges for tools and plants and other incidental charges etc.complete as per detailed specification.				
	a.	With excavated earth available at site	CUM	1213.00		
	b.	With approved earth brought from outside.	CUM	RO		
	c.	With approved River Sand filling	CUM	RO		
	EXE-03	Disposing surplus excavated soils of all types outside the site upto a lead of 5 KM including cost of labour, cost of equipment and machinery, loading and unloading, transportation, all other incidental charges at all leads and lifts etc. complete. The work shall be carried out as per the directions of the Engineer-In-Charge.	CUM	2733.00		
		SUB TOTAL- EARTH CUTTING AND FILLING				
B	RPW-00	ROAD & PAVING WORK				

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	RPW-01	Providing and laying subgrade to a compacted thickness of 200mm laid in single layer with good quality graded material from approved source and mixed in the specified proportion including cost and conveyance of all materials, stacking and mixing in specified proportion, with all leads, spreading to the required camber, levelling, watering and mixing to obtain the optimum moisture content at the time of compaction and compacting each layer with 8 to 10T vibratory power roller to obtain the required proctor density including all labour, charges for all tools and plant employed and all their incidental charges etc. all complete as per IRC / and MOST Specification and as directed (NOTE: Granular sub-base consisting of sand, murrum, crushed stone and gravel mixed in proportions as specified, shall extend 150mm on either side of road which shall be included in cost and shall not be paid extra. CBR value shall not be less than 30 for sub base).	CUM	659.00		
	RPW-02	Providing and laying water bound macadam base course in two layers for consolidated thickness of 150 mm (75 mm thick each layer) using 1.00 cum of 53 mm to 22.40 mm IRC size hand broken granite metal with 0.24 cum of gravel for blindage and filler material for 10 sqm area or as directed by the Consultants including cost and conveyance of all materials from approved source, stacking, labour charges for spreading and packing to camber, watering, all leads and lifts, forming edge bund and consolidation by 8 - 10 T power roller including all labour, hire and fuel charges for all tools and plants employed and all other incidental charges etc. complete as per IRC specifications or/and as specified by Consultants.	Cum	494.00		
	RPW-03	Providing and laying of 50 mm compacted thick asphalt concrete over the prepared dense bituminous macadam base with aggregates conforming to IRC grading set forth in Table 500-24 and binder content and other requirements as per table 500-25 and adopting suitable job mix formula approved by the Consultants including surface preparation, application of tack coat using bitumen grade 80/100 at the rate of 5kg/10Sqm area, heating and mixing in central hot mix plant to the required temperature, conveying, laying the mix at the required temperature, laying the mix to uniform thickness, specified lines, grades, camber and cross section using mechanical paver finisher and consolidation by vibratory power roller to get the required density including all leads ad lifts, labour charges, hire and fuel charges for all tools and plants employed and all other incidental charges etc. complete as per MOST specifications or as approved by Consultants	SQM	3294.00		
		<u>Table - 500 - 24 - Aggregate Gradation</u>				
		Sieve designation % by weight passing the sieve				
		Grading - 1				
		22.4 mm				
		13.2 mm		100		
		11.2 mm		90 - 100		
		5.6 mm		60 - 80		
		2.8 mm		40 - 55		
		710 micron		20 - 30		
		300 micron		15 - 25		
		180 micron		10 - 20		
		90 micron		5 - 11		
		<u>Table - 500 - 25</u>				
		<u>Requirements of Bituminous concrete mix</u>				
		Description	Requirements			

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
		Marshall stability 340 kg (min)				
		Marshall flow (mm) 2 - 4				
		Percent voids in mix 3 - 5				
		% voids in mineral aggregate				
		filled with bitumen 75 - 85				
		Binder content % by weight of mix 5 - 7.5				
	RPW-04	Providing and 6mm thick seal coat after cleaning and brushing road and applying Tack coat (at 0.5 kg / Sqm) if it is delayed by more than 24 hour after laying premix capet as specified, using 0.006 cum fine aggregate/ Sqm premix with 0.68 kg / Sqm , spreading, rolling by 10 T power road roller including cost of all material labour etc. complete	SQM	3294.00		
	RPW-05	Providing and laying 20mm thick colour pigmneted concrete paver tile laid over on compacted earth with 50mm thick Sand bed laid to slope etc., inlcuding pointing with CM 1:3 ,curing etc., complete	SQM	1695.00		
	RPW-06	Do-do the same of above but for grass paver tile etc., complete	SQM	1109.00		
	RPW-07	Providing and laying stone aggregate or gravels on compacted earth etc., complete	SQM	143.00		
	RPW-08	Providing and laying 60mm thick approved shade Interlock cement pavers over laid over 50mm thick river sand bed including machine vibrating etc., complete	SQM	380.00		
	RPW-09	Providing and fixing M20 Precast concrete flush kerbs- of approved brand and make , 150mm thick and 450mm deep, to be set in PCC bed 1:4:8 100mm thick,. Rates to include pointing with cement mortar 1:3, proper alignment, and necessary excavation and back fill, etc., complete.	RMT	213.00		
		SUB TOTAL- ROAD & PAVING WORK				
C	BWW-00	BOUNDARY WALL WORK				
	BWW-01	TEMPRORY BARRICADE WORKS: Providing and Fixing Barricade using Vertical channel of 4" x 2" MS "C" channel to be fixed to the concrete pedestals @ every 10 feet interval for a height of 10 feet. Horizontal 2" x 1/4" "L" angle to be fixed at every 5 feet intervals neatly welded to the MS "c" channel. Colour coated GI sheet for the size of 1m x 3m to be fixed to the frame with belt tapping screws. The rates are inclusive of earth work excavation and pcc for pedestals for fixing the "C" channels, Enamel paint on MS frame over a coat of primer etc. complete.	SQM	1162.00		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	BWW-02	Earthwork excavation in all types of soil for Footing, Raft, RC wall foundations, Lift pits, Trenches, Under ground sumps etc. stacking the excavated earth & disposable material where ever indicated in site, excluding back filling but including filling depressions and loose pockets wherever necessary including watering, consolidating etc., complete. Rate to include disposing of excess earth within the site and spreading in layers to required levels, shoring, bailing out water, etc. complete. Contractor shall get acquainted with site conditions and soil report and submit method statement for dewatering and getting the surface reasonably dry for laying PCC. Note: Authorised working space shall be considered as per IS 1200(From the Basement Floor Level)				
	a.	Lift upto 1.5M depth	CUM	170.00		
	BWW-03	Back filling in plinths, for sides of foundation, trenches, lift pits, area development else where as directed including breaking clods, watering and consolidating in 150mm thick layers, compacting each layer with vibratory compactor and at inaccessible places with wooden/steel rammers to achieve 90 to 95% proctor density at optimum moisture content, all leads and lifts, bailing/ pumping out water to keep site dry while backfilling cost shall include conveyance of all materials, labour, ,hire and fuel charges for tools and plants and other incidental charges etc.complete as per detailed specification.				
	a.	With excavated earth available at site	CUM	85.00		
	b.	With approved earth brought from outside.	CUM	RO		
	BWW-04	Disposing surplus excavated soils of all types outside the site upto a lead of 5 KM including cost of labour, cost of equipment and machinery, loading and unloading, transportation, all other incidental charges at all leads and lifts etc. complete. The work shall be carried out as per the directions of the Engineer-In Charge.	CUM	85.00		
	BWW-05	Providing and laying P.C.C 1:4:8 of specified thickness wherever specified using river sand, 40mm and downsize metal including sub grade preparation, levelling, compacting, all leads and lifts, rough finishing if required at the top surface with necessary curing and shuttering etc. complete at all levels.				
	a.	In below footing/Raft	CUM	31.00		
	BWW-06	Providing & laying 3" thick DAMP PROOF COURSE with cement concrete 1:2:4(cement:2coarse sand:4graded stone aggregate 12.5mm nominal size) including mixing of waterproofing admixture of Sika/Fosroc/MC Bauchemie/Roffe or equivalent as per manufacturers specifications etc., complete for SSM topping including shuttering etc., complete	CUM	13.00		
	BWW-07	Providing and constructing 230mm thick brick masonry in CM 1:6 using approved quality table moulded bricks of minimum 50kg / Sq.cm including raking, curing, scaffolding and staging, lead and lift, in all situations such as walls / pillasters / pillars / stub supports etc. complete as per drawing and as directed at all levels and heights	CUM	RO		
	BWW-08	Do-do the same of above but for boundary wall plinth etc., complete	CUM	209.00		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	BWW-09	Providing 20 mm THICK CEMENT PLASTER for external wall with 20 mm thick cement plaster 1:6 (1 cement: 6 coarse sand) with sponge finish including providing necessary plaster grooves at junctions wherever required , all as directed by the Engineer-in-charge at all levels	SQM	465.00		
	BWW-10	Providing & painting 2 or more coats of Exterior Acrylic Emulsion Paint(Asian Apex/Equivalent)of approved colour & shade to external surfaces over one coat of primer including necessary centering,scaffolding, cleaning of paint stains where ever necessary including curing etc.,complete with all lead and lift as directed by the engineer in charge at all levels	SQM	465.00		
	BWW-11	Supplying, fabricating and fixing in position PVC protected green colour chain link fencing with frame work made out of 50 x 50 mm MS box section and MS angles of size 25 x 25 mm 2 nos. fabricated over frame work and tied with GI wires at top and bottom complete as directed.	SQM	697.00		
	BWW-12	Providing & fixing entrance MS Gate made out of structural steel work consisting of box sections & cleat with spary finish synthetic enamel paint over a coat of Zinc coat primer etc., all as per drawings & as directed by the Architect Drawings(Str.steel shall be taken @ 30Kg/Sqm)	SQM	21.00		
		SUB TOTAL- BOUNDARY WALL WORK				
D	UGS-00	UNDER GROUND SUMPS				
	UGS-01	Earthwork excavation in all types of soil for Footing, Raft, RC wall foundations, Lift pits, Trenches, Under ground sumps etc. stacking the excavated earth & disposable material where ever indicated in site, excluding back filling but including filling depressions and loose pockets wherever necessary including watering, consolidating etc., complete. Rate to include disposing of excess earth within the site and spreading in layers to required levels, shoring, bailing out water, etc. complete. Contractor shall get acquainted with site conditions and soil report and submit method statement for dewatering and getting the surface reasonably dry for laying PCC. Note:Authorised working space shall be considered as per IS 1200(From the Basment Floor Level)				
	a.	Lift upto 1.5M depth	CUM	1031.00		
	b.	Lift from 1.50m to 3.0m depth	CUM	RO		
	c.	Lift from 3.0m to 4.5m depth	CUM	RO		
	UGS-02	Do-do the same of UGS-01 but earth work excavation in Hard rock at all levels with non blasting method like chiseling/compressors including stacking in rectangular/trapezoidal shape,for measurement at ground level as directed etc to complete. Note: 60% of the Stack Qty considered for payment				
	a.	Lift upto 0.0 m to 1.5m depth	CUM	347.00		
	b.	Lift from 1.50m to 3.0m depth	CUM	RO		

Sl. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	UGS-03	Do-do the same of UGS-01 but for earth work excavation in soft rock at all levels with non blasting method like chiseling including stacking in rectangular/trapezoidal shape,for measurement at ground level as directed etc to complete				
	a.	Lift upto 0.0 m to 1.5m depth	CUM	520.00		
	b.	Lift from 1.50m to 3.0m depth	CUM	RO		
	UGS-04	Back filling in plinths, for sides of foundation, trenches, lift pits, area developement else where as directed including breaking clods, watering and consolidating in 150mm thick layers, compacting each layer with vibratory compactor and at inaccessible places with wooden/steel rammers to achieve 90 to 95% proctor density at optimum moisture content, all leads and lifts, bailing/ pumping out water to keep site dry while backfilling cost shall include conveyance of all materials, labour, ,hire and fuel charges for tools and plants and other incidental charges etc.complete as per detailed specification.				
	a.	With excavated earth available at site	CUM	949.00		
	b.	With approved earth brought from outside.	CUM	RO		
	c.	With approved River Sand filling	CUM	RO		
	UGS-05	Disposing surplus excavated soils of all types outside the site upto a lead of 5 KM including cost of labour, cost of equipment and machinery, loading and unloading, transportation, all other incidental charges at all leads and lifts etc. complete. The work shall be carried out as per the directions of the Engineer-In-Charge.	CUM	949.00		
	UGS-06	Providing and laying P.C.C 1:4:8 of specified thickness wherever specified using river sand, 40mm and downsize metal including sub grade preparation, levelling, compacting, all leads and lifts, rough finishing if required at the top surface with necessary curing and shuttering etc. complete at all levels.				
	a.	In below footing/Raft	CUM	94.00		
	UGS-07	SITE MIX CONCRETE				
		Providing and laying cast in-situ design mix Reinforced Cement Concrete (RCC) using cement, coarse sand, granite, basalt or trap stone graded aggregate 20mm & down as per design & drawing including dewatering, preparing surface, machine batching, machine mixing, pouring in place, mechanical compaction, providing cement cover blocks, making construction joints, finishing, curing etc. complete as directed by the Engineer . The rate to include all labour, material, equipment, plant & machinery, conveyance, lowering, hoisting, wastages and all incidentals excluding formwork and reinforcement which shall be measured & paid for separately.				
	a.	M20 Grade concrete for Bottom slab, Walls & Top slab	CUM	388.00		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	UGS-08	Providing, fabricating and erecting form work for all RCC works at places wherever needed / specified as per drawing including striking / deshuttering with marine ply board with adjustable steel props to full height and with sufficient bracing etc. complete. Cost to include sealing the joints with heavy duty brown self adhesive tape, applying mould releasing agents (Rebol from Fosroc or equivalent) aligning to line and levels including M S Ties, PVC spacer etc. Complete & as directed at all levels.				
		Formwork shall be designed for rigidity, durability, strength, water tightness, easy deshuttering etc. Formwork designed using new material (approved prior to making), shall be able to withstand its shape, line, dimensions, level within the allowable tolerances. Only steel jacks and steel spans shall be used. Bracing in both directions as specified by the structural engineer shall be provided. Necessary arrangements for providing camber as required shall be made. Formwork shall have adequate openings for cleaning. Formwork for construction joints shall be submitted for approval. All slabs shall be progressively deshuttered and back propped as per instructions by structural engineer.				
		Shuttering below the shrinkage strip at every level shall be retained in place without disturbing for a time as specified by the structural engineer.				
		Shuttering materials shall be film coated plywood of approved thickness for slabs, beams, columns, shear walls, lift walls etc.				
	a.	For Bottom slab, Walls & Top slab	SQM	2839.00		
	UGS-09	Providing, Fabricating & Placing Reinforcement Steel of High Yield Strength Deformed (HYSD) bars of various diameters of grade Fe 500 conforming to IS codes & make ISPAT or SAIL or VIZAG or TATA including straightening, cutting, bending, hooking, lapping and/or welding wherever required as directed, placing in position, tying with 18G black annealed binding wire double fold, cost of binding wire and anchoring to the adjoining members wherever necessary, all laps and wastages etc. complete as per structural drawings. Rate also to include cost of all materials, cost of labour, cost of equipment and machinery, loading and unloading, transportation, all other incidental charges and work at all leads and lifts etc. complete.				
		Note: Unless noted otherwise the measurements will be in accordance with IS: 1200 or equivalent BS. However reinforcement shall be measured only in lengths of bars as actually placed in position on standard weight basis, no allowance being made in the weight for rolling margin. Authorized laps and splices only will be measured. Chairs of any shape & profile, spacer bar of any shape & profile, concrete cover blocks, wastages, binding wire etc., will not be measured and shall be included in the quoted rates. Quoted rate shall be deemed to have considered the above stipulation.				
	a.	For Bottom slab, Walls & Top slab	MT	47.00		
	UGS-10	WATERPROOF PLASTERING				
		Providing water proof plaster for RCC retaining wall in CM 1:4 of 20mm thick with water proof admixture of Fosroc Conplast X 421IC -150 MI/50kg of cement bag/Equivalent, finally smooth finish with cement rendering including curing, leading, scaffolding etc complete	SQM	1601.00		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	UGS-11	Providing and placing in position suitable PVC water stops fixed supports made out of reinf. bars bent to profile and placed 300mm c/c along the length of water stop of approved make for construction / expansion joints between two RCC members and fixed to the reinforcement with binding wire and supports made out of reinforcement bars bent to profile and placed 300mm c/c along the length of water stop before pouring concrete etc.				
		230 mm wide & 9mm thick.	RMT	807.00		
	UGS-12	Providing & fixing in position CI manhole frame & cover of heavy duty for underground sump tanks and wherever specified with necessary locking arrangements for the cover slab, necessary haunching of concrete surface for fixing including finishing in CM, curing etc., complete with all lead & lift for all materials & labour and as directed, at all levels & heights.				
	a.	600x600mm	Nos	17.00		
	b.	800x800mm	Nos	1.00		
	c.	1000x1000mm	Nos	6.00		
	UGS-13	Providing and fixing in position the PVC coated MS steps of size 300 X 150 mm for UG Sump and OH Tank including placing 150 mm inside concrete (while doing the form work), aligning during concreting, grouting the junction if required.	Nos	84.00		
	UGS-14	RAIN WATER SUMP FILTER MEDIA				
		Providing and filling filter media for rain water chamber etc., complete				
	a.	100mm thick River sand filling	CUM	6.00		
	b.	200mm gravel layer filling	CUM	12.00		
	c.	100mm charcoal layer filling	CUM	6.00		
	d.	2mm wide stainless steel wire mesh	SQM	61.00		
	UGS-17	Supplying and fixing G.I.Puddle Flanges of various dia and size made out of G.I B Class with screwed ends, cap and plates for embedment in concrete as necessary with suitable accessories, consumables welding accessories including placing in position, grouting, making necessary provision in the centering & shuttering etc, including one coat of zinc rich primer complete and as directed at all levels and heights				
		Up to 500mm Long				
	a.	50 mm to 100 mm dia	Each	RO		
	b.	100 mm to 200 mm dia	Each	RO		
	c.	200 mm to 300 mm dia	Each	RO		
		SUB TOTAL- UNDER GROUND SUMPS				
E	MSL-00	MISCELLANEOUS				
	MSL-01	Providing and constructing 4' dia x8' deep Rainwater percolation pit with 2" thick RCC rings, excavation, filling with agregate, sand etc., all as per drawing	NOS	26.00		

Sl. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	MSL-02	Providing and constructiong Water body including excavation,pcc,base concrete & wall with 100mm thick M20 grade concrete,waterproof plaster with CM 1:4,Glass mosiac tile with tile adhesive, pointing with tile matching shde tile grout, cleaning, 20mm thick sadarhalli stone coping etc., complete	LTR	6000.00		
	MSL-03	Providing and constructing 600mm wide Storm water drain including excavation, PCC 1:4:8, 6" block masonry, 15mm thick plaster with waterproof admixture, 3" thick perforated precast M20 grade cover slab fixed on MS angle etc complete				
	a.	Storm water drain	RMT	200.00		
	MSL-04	Providing and making Rain water Chamber in Brick masonry including excavation all types of soil,150mm thick base pcc 1:4:8,side wall with brick masonry in CM 1:3,plastering out side in CM 1:5 & inside with CM 1:3 added with water proof compound including benching slope of 1:6 with PCC & all inside finish with floating coat of neat cement ,top RCC Precast Grating with reinforcement & perforation as per detail given shall be placed with Cast-n-situ bed block concrete in M15 grade etc all as per drawings & details complete (Chamber depth varies from .30m to 1.5m) at all heights & levels				
	a.	450x450mm	NOS	18.00		
	b.	600x600mm	NOS	4.00		
	MSL-05	Providing and making Inspection Chamber in Brick masonry including excavation all types of soil,100mm thick base pcc 1:4:8,side wall with brick masonry in CM 1:3,plastering out side in CM 1:5 & inside with CM 1:3 added with water proof compound including benching slope of 1:6 with PCC & all inside finish with floating coat of neat cement ,top RCC Precast Grating with reinforcement & perforation as per detail given shall be placed with Cast-n-situ bed block concrete in M15 grade etc all as per drawings & details complete (Chamber depth varies from .45m to 1.5m) at all heights & levels				
	a.	600x600mm	NOS	24.00		
	MSL-06	Do-do the same of above but for Man holes				
	a.	900mm diameter	NOS	9.00		
	b.	1200mm diameter	NOS	3.00		
	MSL-07	Do-do the same of MSL-03 but for Water channel etc., complete	RMT	250.00		
	MSL-08	Site office: Constructing site office with sub structure in brick work & super structure with 150mm thick block masonry with GI sheet roofing including tile flooring, aluminum doors & windows,painting,electriclty, 2 TR A/C etc., complete	SQM	20.00		
	MSL-09	Do-do the same of above but for toilet with plumbing & sanitary fixtures etc., complete	SQM	6.00		
	MSL-09	Existing Tree replanting	NOS	10.00		

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
	MSL-13	Existing well - dewatering and cleaning	NOS	1.00		
	MSL-14	Supply of Grey water for Construction purposes in Tankers from approved source (TWSDB STP Plant / any other) including transportation etc complete at all heights & levels	KLD	14000.00		
	MSL-15	Providing DG set for Power supply at site for construction purpose including cabling, fuel, operator, maintenance etc., complete	Month	18.00		
		SUB TOTAL MISCELLANEOUS				

PROPOSED NCSCM BUILDING AT ANNA UNIVERSITY CAMPUS AT CHENNAI.
BILL OF QUANTITY
GLAZING (ALUMINIUM DOORS & WINDOWS)

SI. NO	BOQ CODE	DESCRIPTION OF THE WORK	UNIT	QTY	RATE	AMOUNT IN FIGURES
A	GLW - 00	GLAZING (ALUMINIUM DOORS & WINDOWS)				
	GLW-01	Providing and fixing of windows /Glazing/louvers as per the elevation drawings enclosed, fabricated out of heavy duty aluminium extruded profiles powder coated as per approved shade. All aluminium members and profiles shall be of AC 25 grade as per specification. The Aluminium members shall be protected with Masking Tapes all around the profiles for safety against external scratches at site (Masking Tapes shall be removed only at the time of handing over as per the instructions of Owner).				
		The fabrication shall be done with all the joints mitred; the Outer Frames and Mullions jointed with appropriate Stainless Steel Screws and Shutter Frames jointed with Heavy Duty Aluminium Angle/ Cleat/ box sleeve and Stainless Steel Screws.				
		Appropriate profiles of EPDM gaskets shall be inserted between aluminium frames/ beadings and glass; as well as both inside and outside around the periphery of the shutters, to make the windows air and water tight.				
		The fixing shall be done on existing openings at anchorage locations, in jambs, cills and heads by drilling holes with an electric drill, inserting Stainless Steel Counter sunk screws.				
		To make the joints water & air tight, the glazing framework shall be provided with approved in-built ventilation and drainage system. All the joints and the periphery of the Window Glazing system shall be properly sealed with specified weather silicon. The details for in-built ventilation & drainage system to be submitted by the contractor and got approved by the Owner.				
		Each openable shutters shall be provided 2 nos. of appropriate adjustable Stainless Steel Friction stay, button locking handle as per design to be got approved by the Architect/ Owner.				
		Glass: SGU (Low-e) : SHGC :0.4, U-Value: 0.62 btu/h sqft °f				
	a.	Aluminium framed sliding doors with 10mm thick toughened Glass (With automated sense of system)	SQM	27.00		
	b.	Aluminium framed doors with 10mm thick toughened Glass	SQM	9.00		
	c.	Aluminium framed glazing assembly with doors with 10mm thick toughened Glass	SQM	164.00		
	d.	Aluminium framed Sliding Panel window with 10mm thick toughened Glass	SQM	72.00		
	e.	Aluminium framed Fixed Panel window with 10mm thick toughened Glass	SQM	63.00		
	f.	Aluminium framed Fixed Panel window with 8mm thick toughened Glass	SQM	1.00		
	g.	Aluminium framed Openable Panel window with 10mm thick toughened Glass	SQM	686.00		
	h.	Aluminium framed Openable Panel window with 8mm thick toughened Glass	SQM	9.00		
		SUB TOTAL- GLAZING (ALUMINIUM DOORS & WINDOWS)				
		TAXES				
		GRAND TOTAL				

ABSTRACT FOR PLUMBING AND SANITARY WORKS FOR NCSCM

PART	DESCRIPTION OF WORK	AMOUNT
A	SANITARY AND BATHROOM FITTINGS	
B	INTERNAL AND EXTERNAL WATER SUPPLY	
C	SOIL AND WASTE PIPES & FITTINGS - INTERNAL & EXTERNAL DRAINAGE	
D	RAIN WATER PIPES AND FITTINGS	
E	PUDDLE FLANGES FOR UNDER GROUND SUMP AND ACCESSORIES	
F	PUMPS & ACESSORIES	
G	SOLAR WATER HEATER	
H	WATER TREATMENT PLANT - 52 KLD (BASED ON THE WATER TEST REPORT)	
I	TERTIARY TREATMENT FOR REED BED - 10 KLD	
	TAXES	
	DUTIES	
	TOTAL TO SUMMARY	

**EXCLUSIONS FOR PLUMBING AND SANITARY WORKS FOR NCSCM**

- 1 Construction of Under ground sumps
- 2 Construction of Pump rooms
- 3 Construction of Percolation pits/wells
- 4 Foundations for pumps and other PHE equipments
- 5 Construction of OHT
- 6 All electrical works are excluded in the PHE works.
- 7 All civil works related to PHE (wall opening, foundation)
- 8 Access for pump room civil and structural works
- 9 Irrigation piping layout.
- 10 Construction of Reed Bed
- 11 Construction of Marble counter (if any) for Wash Basins
- 12 Construction of Granite / Marble sink for LAB Sinks
- 13 Construction of Rainwater Filtration Chambers
- 14 Interior items like waste bins, liquid soap dispenser, tissue dispenser etc., are not included under PHE

BILL OF QUANTITIES FOR PLUMBING AND SANITARY WORKS FOR NCSCM

SL NO	DESCRIPTION OF WORK	TOTAL QUANTITY	UNIT	RATE(Rs)	AMOUNT (Rs.)
A	SANITARY AND BATHROOM FITTINGS				
THE QUOTED RATES SHALL INCLUDE ALL SUCH ITEMS, WHETHER SPECIFICALLY MENTIONED OR NOT REQUIRED TO COMPLETE THE WORK INCLUDING CUTTING, CHASING, CONCRETING, (WHERE EVER EXTERNAL PIPE RUNNING IN THE TRENCH LEVELING WITH SAND) REDOING, PROVISION OF SCREWS, BOLTS, WHITE CEMENT ETC. THE QUOTED RATES SHALL ALSO INCLUDE PROVISION OF M.S. ANGLE STAYS BOLT, HI-TECH HANGERS, EXPANSION BOLTS ETC. (AS PER SPECIFICATION STANDARD) EXPANSION BOLTS TO TAKE THE PIPES IN THE SHAFT OR IN THE CEILING, PAINTING OF THE BRACKETS WITH TWO COATS OF ZINC PREMIER PAINTS AND ONE COAT OF ENAMEL PAINT AND THE QUOTED RATES SHOULD BE INCLUSIVE OF ALL TAXES					
1.0	Supply, Installing, testing and commissioning of Floor Mounted European Water Closet with 'P' or 'S' trap with concealed cistern (2/4 dual flush) with all internal parts for efficient functioning with polypropylene solid hard seat and cover of with polythene buffers and flap, brass CP wall flanges, brass CP bolts and nuts 15mm brass CP angle valve, 450 mm long inlet (type) connection pipe, all of PARRYWARE MAKE AND MODEL Nos C0252, C8176, C0708, C2063, C8095, G1807A1 , with mounting chair bracket custom made to specific dimensions as mentioned by the architect / engineer, fixing of 110mm dia straight type straight syphon UPVC WC pan connector with neoprene rubber ring and necessary accessories etc., complete. (All fittings of approved make)	79	Each		
2.0	Supply, Installing, testing and commissioning EWC & concealed Cistern (2/4 dual flush) complete with fittings & seat cover for Physically Challenged with increased height for convenience with 'P' or 'S' trap with cistern with raised soft- push button for convenient access, with grab bars and hinged bars necessary for physically challenged toilets with all internal parts for efficient functioning with polypropylene solid hard seat and cover of with polythene buffers and flap, brass CP wall flanges, brass CP bolts and nuts 15mm brass CP angle valve, 450 mm long inlet (type) connection pipe, all HINDWARE MAKE CAT no 20049, (Wash basin 46 x 36 with one pair mounting brackets, ewc & cistern complete with fittings & seat cover, one no. Hinged rail 76 cm & 5 nos. Of grab rails 60 cm COMPLETE) with mounting chair bracket custom made to specific dimensions as mentioned by the architect / engineer, fixing of 110mm dia straight type straight syphon UPVC WC pan connector with neoprene rubber ring and necessary accessories etc., complete. (All fittings of approved make). Supply and fixing of vitreous china oval type wash basin for Physically Challenged of HINDWARE MAKE, make colour, with cold water supply connecting pipe with angular stop cock, CP waste coupling with plug chain, 32mm dia CP bottle trap, etc of approved make. The work shall include cutting and making good the walls and floors complete. Supply and fixing of 15mm dia CP pillar cock with aerators / flow restrictors (MODEL NO T0402A1, G1807A1 AND T3201A1). The work shall include cutting and making good the walls and floors. (All fittings of PARRYWARE MAKE) (Flow rate - 1.3 LPM @ 58 PSI)	19	Each		-

SL NO	DESCRIPTION OF WORK	TOTAL QUANTITY	UNIT	RATE(Rs)	AMOUNT (Rs.)
3.0	Supply and fixing of Health Faucet of the closet mounting type with hose connected Two Way Bib Cock with flow restrictors/ aerators with complete fittings. (All fittings of approved make) Fittings of PARRYWARE MAKE, MODEL Nos. T9941A1, T9915A1, G3434A1) (Flow rate - 1.3 LPM@ 58 PSI)	19	Each		-
4.0	Supply, installation, testing and commissioning of vitreous china Large Flat Back Urinal OF HINDWARE MAKE, MODEL No. 96005 with sensor type with the fabricated pace floor trap below the urinal bowl complete with C.I. Bracket fixing to wall daddo with required materials like teak wood plugs packing pieces, screw nails etc, C.P. Bottle trap,(OF PARRYWARE MAKE, MODEL No. T3201A1) C.P. Spreader, Pipe, C.P. Dome Coupling (of parryware make, model nO. T9954A1) etc. complete, testing & commissioning the installation. (All fittings of approved make) (Flow rate - 0.4 to 0.7 LPF)	56	Each		-
5.0	Supply, installation, testing and commissioning of vitreous china Large Flat Back Urinal OF HINDWARE MAKE, MODEL No. 60001 with push button type with the fabricated pace floor trap below the urinal bowl complete with C.I. Bracket fixing to wall daddo with required materials like teak wood plugs packing pieces, screw nails etc, C.P. Bottle trap (OF PARRYWARE MAKE, MODEL No. T3201A1), C.P. Spreader, Pipe, C.P. Dome Coupling (of parryware make, model nO. T9954A1) etc. complete, testing & commissioning the installation. (All fittings of approved make) (Flow rate - 0.4 to 0.7 LPF)	R.Only	Each		

SL NO	DESCRIPTION OF WORK	TOTAL QUANTITY	UNIT	RATE(Rs)	AMOUNT (Rs.)
6.0	Supply and fixing of vitreous china oval type wash basin of PARRYWARE MAKE, MODEL No. C0402 colour installed counter top of approved make, with 15mm dia CP pillar cock with aerators / flow restrictors OF PARRYWARE MAKE, MODEL No. T0402A1, with cold water supply connecting pipe with angular stop cock OF PARRYWARE MAKE, MODEL No. G1807A1, CP waste coupling with plug chain, 32mm dia CP bottle trap OF PARRYWARE MAKE, MODEL No. T3201A1, etc. The work shall include cutting and making good the walls and floors. (All fittings of approved make) (Flow rate - 1.3 LPM)	84	Each		-
7.0	Supply and fixing of best quality Stainless Steel double bowl kitchen sink of PARRYWARE MAKE, MODEL No C8530 , with CP wall mounted sink mixer (spout) OF PARRYWARE MAKE, MODEL No G3435A1 with necessary fittings fitted with 32mm CP waste coupling OF PARRYWARE MAKE, MODEL No.T9911A1 and with bottle trap connection OF PARRYWARE MAKE, MODEL NoS G1807A1, T3201A1 etc., including providing and fixing of MS painted brackets. (All fittings of approved make) (Flow rate - 1.3 LPM @ 58 PSI)	1	Each		-
8.0	Supply and fixing of best quality Stainless Steel single bowl LAB sink with drain board of PARRYWARE MAKE, MODEL Nos. C0602, C2009, C0709, with CP wall mounted spout (sensor faucet) OF PARRYWARE MAKE, MODEL No. T7183A1 with necessary fittings fitted with 32mm CP waste coupling and with bottle trap connection OF PARRYWARE MAKE, MODEL Nos. G1807A1 , T3201A1 etc., including providing and fixing of MS painted brackets. (All fittings of approved make) (Flow rate - 1.3 LPM @ 58 PSI)	13	Each		-
9.0	Supply and fixing of best quality Stainless Steel double bowl LAB sink of PARRYWARE MAKE, MODEL No C8530 , with CP wall mounted sink mixer (spout) OF PARRYWARE MAKE, MODEL No G3435A1 (sensor faucet) OF PARRYWARE MAKE, MODEL No. T7183A1 with necessary fittings fitted with 32mm CP waste coupling and with bottle trap connection OF PARRYWARE MAKE, MODEL NoS G1807A1, T3201A1 etc., including providing and fixing of MS painted brackets. (All fittings of approved make) (Flow rate - 1.3 LPM @ 58 PSI)	1	Each		-
10.0	Supply and fixing of best quality Stainless Steel single bowl LAB sink without drain board of approved make, with CP wall mounted swinging casted spout (sensor faucet) with necessary fittings fitted with 32mm CP waste coupling and with bottle trap connection etc., including providing and fixing of MS painted brackets. (All fittings of approved make) (Flow rate - 1.3 LPM @ 58 PSI)	R.Only	Each		
11.0	Supply and fixing of Health Faucet of the closet mounting type with hose connected Two Way Bib Cock with complete fittings (OF PARRYWARE MAKE, MODEL Nos. T9941A1, T9915A1, G3434A1) . (All fittings of approved make) (Flow rate - 1.3 LPM@ 58 PSI)	79	Each		
12.0	Supply and fixing of superior quality of approved type design, CP Toilet Paper Holder OF PARRYWARE MAKE, MODEL No. T6405A1 with complete fittings of approved make.	98	Each		

SL NO	DESCRIPTION OF WORK	TOTAL QUANTITY	UNIT	RATE(Rs)	AMOUNT (Rs.)
13.0	Supply and fixing of superior quality of approved type design, CP Towel Ring OF PARRYWARE MAKE, MODEL No. T6002A1 with complete fitting of approved make.	71	Each		
14.0	Supply and fixing of mirror of Saint Gobain / Modi / Parryware make having 8mm thick with copper backing and cut to require size 800x600 mm and fixed on to 10mm thick teak/ ply wood sheet by using CP clamp, CP screw, CP hooks etc. The sides of the mirror shall be provided with 50x20 mm thick teakwood frame. The frame shall be neatly polished etc and complete. (All fittings of approved make)	R.Only	Sq. m		
15.0	Supply and fixing of 20mm thick marble top counter of approved colour and cut to required size for accommodating the oval or round shape wash basin. Rate should include for making necessary holes in the marble slab etc., complete.	R.Only	sq-m		
16.0	Supply and fixing of Bib Cock with wall flange (drinking water tap point) OF PARRYWARE MAKE, MADEL No. G0604A1 flow aerators/ restrictors with long thread, adjustable flange with complete fittings of approved make. (Flow rate - 1.3 LPM @ 58 PSI)	R.Only	Each		
17.0	Supply and fixing CP Angular Stop Cock with long thread, with adjustable flange OF PARRYWARE MAKE, MODEL No. G1907A1 with completed fittings of approved make for making provision for Aqua Guard.	13	Each		
18.0	Supply and fixing of Bib Cock (landscape tap provision) flow aerators/ restrictors OF PARRYWARE MAKE, MODEL No G0106A1 with long thread, adjustable flange with complete fittings of approved make. (Flow rate - 1.3 LPM @58 PSI)	R.Only	Each		
19.0	Supply and fixing of CP Long Body Bib Cock with aerators / flow restrictors, OF PARRYWARE MAKE, MODEL No G0106A1 with wall flange type with complete fittings, all of approved make. (Flow rate - 1.3 LPM @58 PSI)	R.Only	Each		
20.0	Supply and fixing of Urinal partition of PARRYWARE MAKE, MODEL No C0571 make for Urinal border with necessary fittings and complete.	50	Each		
Total carried over to abstract					
B INTERNAL AND EXTERNAL WATER SUPPLY					
THE QUOTED RATES SHALL INCLUDE ALL SUCH ITEMS, WHETHER SPECIFICALLY MENTIONED OR NOT REQUIRED TO COMPLETE THE WORK INCLUDING CUTTING, CHASING, CONCRETING, REDOING, PROVISION OF SCREWS, BOLTS, WHITE CEMENT ETC. THE QUOTED RATES SHALL ALSO INCLUDE PROVISION OF M.S.ANGLE STAYS BOLT, HI-TECH HANGERS, EXPANSION BOLTS ETC. (AS PER SPECIFICATION STANDARD) EXPANSION BOLTS TO TAKE THE PIPES IN THE SHAFT OR IN THE CEILING, PAINTING OF THE BRACKETS WITH TWO COATS OF ZINC PRIMER PAINTS AND ONE COAT OF ENAMEL PAINT AND THE QUOTED RATES SHOULD BE INCLUSIVE OF ALL TAXES					
1.0	Supply and fixing Chlorinated Polyvinyl Chloride pipes (CPVC) of SDR 11 for both cold, flush and hot water applications as per ASTM D-2846 with all CPVC fittings and specials such as tees, elbows, couplers etc with CPVC brass threaded combination/transition specials such as male adopters brass threaded, female adopters brass threaded, brass FABT tee, brass FABT elbow etc where connection with metal is to be made including cutting holes and chases in walls and floors and refilling it by cement mortar of 1:3 mix (1 Portland Cement : 3 hard settling cement compound) and making good the walls etc as directed by the Engineer in charge. Joints to be made with CPVC solvent as per ASTM F 493 complete.				

SL NO	DESCRIPTION OF WORK	TOTAL QUANTITY	UNIT	RATE(Rs)	AMOUNT (Rs.)
a	15mm dia	30	R-mts		
b	20mm dia	450	R-mts		
c	25mm dia	390	R-mts		
d	32mm dia	170	R-mts		
e	40mm dia	230	R-mts		
f	50mm dia	590	R-mts		
2.0	Providing, laying and fixing Chlorinated Polyvinyl Chloride pipes (CPVC) of SCH 40 as per ASTM F-441 with all CPVC fittings of as per ASTM F 439 and specials such as tees, elbows, couplers etc with CPVC brass threaded combination/transition specials such as male adopters brass threaded, female adopters brass threaded, brass FPT Tee, brass FPT elbow etc where connection with metal is to be made including cutting holes and chases in walls and floors and refilling it by cement mortar of 1:3 mix (1 Portland Cement : 3 hard settling cement compound) and making good the walls etc as directed by the Engineer in charge. Joints to be made with CPVC solvent as per ASTM F 493 complete.				
a	65mm dia	180	R-mts		
b	80mm dia	150	R-mts		
c	100mm dia	100	R-mts		
d	150 mm dia	R.only	R-mts		
3.0	Supply and fixing thermal insulation over hot water pipes exposed or concealed with 6 mm thick up to 50mm and above 9mm thick approved make thermal insulation tubing, a elastomeric flexible material having hermetic blister closed cell structure of expanded synthetic rubber having density of 60-90 Kg/m ³ over pipes of following sizes including all required accessories complete as per manufacture's specifications. Joints of insulation should be applied with self adhesive tapes of rayon materials and Polyshield protective coating with sun radiating protective cloth cladding complete.				
a	15mm dia	20	R-mts		
b	20mm dia	40	R-mts		
c	25mm dia	35	R-mts		
d	32mm dia	30	R-mts		
e	40mm dia	30	R-mts		
f	50mm dia	30	R-mts		
g	65mm dia	R.only	R-mts		
h	80mm dia	R.only	R-mts		
i	100mm dia	R.only	R-mts		
4.0	Supply & fixing brass ball valve of forged brass, machined to mirror smooth finish, hard chrome plated, Seat: pure PTFE, conical Arc cut. Stem seals: Double O ring of H - NBR. Nut: Self locking nylon nut, BSP female threads. Etc complete. The quote shall also inclusive of the material necessary to withstand 9 kg/cm ² testing pressure without leakage (valve joints). The cost includes joints required for the CPVC pipes to valves such as flanges, couplings etc complete				
a	20mm dia	10	Each		
b	25mm dia	5	Each		
c	32mm dia	10	Each		
d	40mm dia	20	Each		

SL NO	DESCRIPTION OF WORK	TOTAL QUANTITY	UNIT	RATE(Rs)	AMOUNT (Rs.)
5.0	Supply & fixing butterfly valves. The body of the valve should be CI fine graded casting, neck: should be extended neck design, sleeve: replaceable type EPDM sleeve with phenolic backing, DISC & PIN: ductile iron with electroless nickel plating mirror smooth, shaft: carbon steel one piece and please follow the technical specification attached. The quote shall also be inclusive of the materials necessary to withstand 9 kg/cm ² testing pressure without leakage (valve joints). The cost includes joints required for the CPVC pipes to valves such as flanges, couplings etc complete.				
a	50mm dia	35	Each		
b	65mm dia	8	Each		
c	80mm dia	1	Each		
d	100mm dia	R.only	Each		
6.0	Supply and fixing of CI Y Strainers with perforated brass strainer body of approved make, provide each strainer with a cock for blowing down. Screen area of strainer shall be minimum of 5 times more than the pipe area with 1/32 inch max size holes. The cost also includes necessary flanges for supply and fixing to the pipes, complete.				
a	50 mm dia	2	Each		
b	65 mm dia	8	Each		
c	80 mm dia	R.only	Each		
d	100 mm dia	R.only	Each		
e	150 mm dia	R.only	Each		
7.0	Supply and install a solenoid stainless steel valve with 12-24V, at the OHT inlet with the existing manual tap. The installation includes all pipe fittings(valves, elbows, nipples etc.) and control circuitry (timers, relays, wires, etc). The valve shall be able to work with water level controller.	10	Each		
8.0	Providing and fixing stainless steel float valve with ball of approved make of following mentioned sizes, for water supply inlet pipe to under ground sump.				
a	40mm dia	R.only	Each		
b	50 mm dia	10	Each		
c	65 mm dia	R.only	Each		
d	80 mm dia	R.only	Each		
e	100 mm dia	R.only	Each		
9.0	Supply and fixing of Check Valves. The body and plates are to be of CI body and pressure rating is PN 10 & PN 16. The valve seal is Neoprene rubber. The cost also includes necessary fittings to complete the connections. Please refer technical specification attached.				
a	50mm dia	10	Each		
b	65 mm dia	R.only	Each		
c	80 mm dia	R.only	Each		
10.0	Supply and fixing of Air vent valves at tip of water riser with all necessary fittings, complete.				
a	20mm dia	21	Nos		

SL NO	DESCRIPTION OF WORK	TOTAL QUANTITY	UNIT	RATE(Rs)	AMOUNT (Rs.)
11.0	Supply and fixing of Water Meter conforming to IS:779 with direct reading dial in KL with all internal parts in gunmetal or brass, strainer, flanged distance piece for easy removal in future 100mm dia, boulder type pressure gauge and isolated cock including necessary test certificate for the meter from municipal corporation.				
a	50mm dia	11	Each		
12.0	Constructing Masonry chamber 60x45x50cm, inside with 75 class designation brick work in cement mortar 1:5 (1 cement : 5 fine sand) for water meter complete with CI double flap surface box 400x200x200mm (inside) with locking arrangement and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) necessary excavation foundation concrete 1:5:10 (1 cement : 5 fine sand :10 graded stone aggregate 40mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12mm thick finished with a floating coat of neat cement complete as per standard design.	11	Each		
13.0	Constructing valve chamber made of brick masonry with bricks of class designation 75 in cement mortar 1: 5 (1 cement:5 fine sand) 12 mm thick plastering on internal face with cement mortar 1:3 (1cement : 3 fine sand) including floating coat of neat cement and rough plaster on outer face complete with excavation in all kinds of soil, back filling and cart away surplus earth as directed. RCC top slab with CI medium duty manhole cover and frame to be not less than 50kg)				
a	Size : 300 x 300 x 300mm (clear dimension)	5	Each		
14.0	Excavating trenches of required width for pipes etc., including excavation for sockets and dressing of sides, ramming of bottom including getting out the excavated soil and then returning the soil as required in layers including consolidating each deposited layer by ramming, watering, etc., and disposing of surplus excavated soil as directed with in a lead of 50 mts. (pipe not exceeding 300mm dia)	120	Cum		
15.0	Same as above for hard rock including blasting	R.only	Cum		
Total carried over to abstract					
C SOIL AND WASTE PIPES & FITTINGS - INTERNAL & EXTERNAL DRAINAGE					
THE QUOTED RATES SHALL INCLUDE ALL SUCH ITEMS, WHETHER SPECIFICALLY MENTIONED OR NOT REQUIRED TO COMPLETE THE WORK INCLUDING CUTTING, CHASING, CONCRETING, (WHERE EVER EXTERNAL PIPE RUNNING IN THE TRENCH LEVELING WITH SAND) REDOING, PROVISION OF SCREWS, BOLTS, WHITE CEMENT ETC. THE QUOTED RATES SHALL ALSO INCLUDE PROVISION OF M.S.ANGLE STAYS BOLT, HI-TECH HANGERS, EXPANSION BOLTS ETC. (AS PER SPECIFICATION STANDARD) EXPANSION BOLTS TO TAKE THE PIPES IN THE SHAFT OR IN THE CEILING, PAINTING OF THE BRACKETS WITH TWO COATS OF ZINC PREMIER PAINTS AND ONE COAT OF ENAMEL PAINT AND THE QUOTED RATES SHOULD BE INCLUSIVE OF ALL TAXES.					
1.0	Supply and fixing of UPVC Soil & Waste pipes ISI marked /SWR jointed with solvent cement/rubber ring joints and further protected with Fibreglass paste, including all specials such as bends, tees reducers etc., with or without door as required, including any cutting & making good of floors/walls that may be necessary, clamps and stays as per requirements. The pipes laid above the floor level (sunken level), it should be rigidly fixed with PCC bedding and levelled at every 1 metre intervals.				
a	40mm dia 10 kg/cm2	160	R-mts		
b	50mm dia 10 kg/cm2	45	R-mts		
c	75mm dia 6kg/cm2	700	R-mts		
d	110mm dia 6kg/cm2	800	R-mts		

SL NO	DESCRIPTION OF WORK	TOTAL QUANTITY	UNIT	RATE(Rs)	AMOUNT (Rs.)
e	160mm dia 6kg/cm ²	290	R-mts		
f	200mm dia 6kg/cm ²	60	R-mts		
g	250mm dia 6kg/cm ²	100	R-mts		
2.0	Supply & fixing special PVC floor trap 147 x150x 75mm self cleansing design with or without vent arm, Inlet receiving cap for inlet dia 50 & 40 complete including cutting and making good of the walls and floors.	156	Each		
3.0	Supply & fixing special PVC floor trap 147 x150x 75mm (for landscape drain) self cleansing design with or without vent arm, Inlet receiving cap for inlet dia 50 & 40 complete including cutting and making good of the walls and floors.	33	Each		
4.0	Supply & fixing Cockroach trap of 125x125mm to insert into PVC floor trap complete	156	Each		
5.0	Supply & fixing porcelain trap of 125x125mm to insert into PVC floor trap complete	22	Each		
6.0	Provide and fixing standard uPVC clean out plug with suitable insert key with all required upvc accessories threaded adapter and end cap as per approval				
a	75mm dia	15	Each		
b	110mm dia	10	Each		
c	160mm dia	R.only	Each		
7.0	Supply of materials and construction of gully traps of specified size and shall be provided. It shall be fixed on 150mm thick and 700mm square 1:4:8 cement concrete bedding and the gully outlet shall be jointed similarly to the jointing of UPVC pipes. A brick masonry chamber 300x 300mm (internally) shall be constructed in 1/2 brick masonry with 1:6 cement mortar and the spaces between the trap and the wall shall be filled up with 1:3:6 concrete and the upper portion of the chamber shall be finished with neat cement. The corners and bottom of the chamber shall be rounded off so as to slope towards the grating and the bottom of the chamber shall not be less than 230 mm. In addition to 150mmx150mm CI grating, the chamber shall have a CI frame and cover (450mm x 450 mm). The cover and frame shall be placed on top of the brick masonry and all walls (four sides)both side plastering with FOSROC water proofing. Chamber bottom PCC with water proofing.	R.only	Each		
8.0	Supply of materials & Constructing brick masonry manholes/ Inspection chambers with 'A' class Table Moulded bricks in cement mortar 1:5 (1 cement : 5 fine sand), R.C.C. Top slab with 1:2:4 Mix (1 Cement : 2 coarse sand : 4 graded stone aggregate), foundation concrete with 1:4:8 concrete (1 cement :4 coarse sand : 8 graded stone aggregate) Inside plastering 12mm thick with CM 1:3 (1 cement :3 fine sand) finished with floating coat of neat & making channel in cement concrete 1:2:4 (1 cement : 2 coarse sand :4 graded stone aggregate) neatly finished complete as per standard design and as per drawing and all walls (four sides)both side plastering with FOSROC water proofing. Chamber bottom PCC with water proofing.				
a	Inside size of 450 x 450mm(200mm wall thickness) & depth not exceeding 900mm including providing 450 x 450mm C.I. cover with frame. (M.D.)	21	Each		

SL NO	DESCRIPTION OF WORK	TOTAL QUANTITY	UNIT	RATE(Rs)	AMOUNT (Rs.)
b	- do - size of 600 x 600(200mm wall thickness) depth not exceeding 1200mm with MD CI cover	21	Each		-
c	Dia 900 mm (top level) and 900 dia at bottom level in case of depth exceeds 1200 mm and up to 1650 mm with C I cover (MD)	12	Each		-
d	Dia 1200 mm (top level) and 1200 dia at bottom level in case of depth exceeds 1650 and up to 2300 mm with C I cover (MD)	1	Each		-
e	Dia 1500 mm (top level) and 900 dia at bottom level in case of depth exceeds 2300 and up to 3500 mm with C I cover (MD)	R.only	Each		
9.0	Providing, laying, jointing testing and commissioning of RCC Hume pipes (NP2 class) conforming to IS: 458 with collar joint in CM 1:3 packing the collar joints with asbestos rope dipped in cement slurry, finishing the surface smooth with neat cement slurry, including, curing & laid to correct levels and required slope below ground in trenches up to required depth including excavation in all kind of soil excluding soft rock and hard rock, backfilling with available earth in layer not exceeding 20 cm in depth, watering, levelling consolidation, disposing the excess earth to all lead etc., complete.				
a	100mm dia	R.only	R-mts		
b	150mm dia	R.only	R-mts		
c	200mm dia	R.only	R-mts		
10.0	Earth work excavation for trenches in all types of soil (width of trench shall be as shown in the detailed drawing) including soft rock and disintegrated rock for laying sewerage pipes . The soil shall be deposited on banks with all lead, lift, including necessary wooden/steel form work where ever required. Depositing of the surplus earth after backfilling to a initial lead of 30 meters. Refilling of the pipe line trenches and foundation with selected earth available from the trench excavation including watering consolidation in layers of 15cm thickness complete as per specifications. The back fill soil shall be graded soil free from stones, pebbles, clay lumps and vegetation etc., complete as per the specifications, drawings and the direction of the engineer.				
a	Depth up to 1.65 meters	200	Cum		
b	Depth from 1.65 meters to 2.3 meters	20	Cum		
c	Depth from 2.3 meters to 5.0 meters.	R.only	Cum		
11.0	Same as above for hard rock including blasting	R.only	Cum		
Total carried over to abstract					
D RAIN WATER PIPES AND FITTINGS					
NOTE: THE QUOTED RATES SHALL INCLUDE ALL SUCH ITEMS, WHETHER SPECIFICALLY MENTIONED OR NOT REQUIRED TO COMPLETE THE WORK INCLUDING CUTTING, CHASING, CONCRETING, (WHERE EVER EXTERNAL PIPE RUNNING IN THE TRENCH LEVELING WITH 150MM SAND BED) REDOING, PROVISION OF SCREWS, BOLTS, WHITE CEMENT ETC. THE QUOTED RATES SHALL ALSO INCLUDE PROVISION OF M. S. ANGLE STAYS BOLT, HI-TECH HANGERS, EXPANSION BOLTS ETC. (AS PER SPECIFICATION STANDARD) EXPANSION BOLTS TO TAKE THE PIPES IN THE SHAFT OR IN THE CEILING, PAINTING OF THE BRACKETS WITH TWO COATS OF ZINC PREMIER PAINTS AND ONE COAT OF ENAMEL PAINT. ALL ITEM SHOULD INCLUDE ALL TAXES.					
1.0	Supply & fixing of 4 kg/sq.mm UPVC Rain water pipes ISI marked,/SWR jointed with solvent cement/rubber ring joints and further protected with Fibreglass paste. including all specials such as bends, tees reducers etc., with or without door as required, including any cutting & making good of floors/walls that may be necessary, clamps and stays as per requirements. The pipes laid above the floor level (sunken level), it should be rigidly fixed with PCC bedding and levelled at every 1 metre intervals				

SL NO	DESCRIPTION OF WORK	TOTAL QUANTITY	UNIT	RATE(Rs)	AMOUNT (Rs.)
a	75mm dia	R.only	R-mts		
b	110mm dia	R.only	R-mts		
c	160mm dia	295	R-mts		
d	200mm dia	50	R-mts		
e	250mm dia	R.only	R-mts		
2.0	Supply & fixing of 6 kg/sq.mm UPVC Rain water pipes ISI marked,/SWR jointed with solvent cement/rubber ring joints and further protected with Fibreglass paste. including all specials such as bends, tees reducers etc., with or without door as required, including any cutting & making good of floors/walls that may be necessary, clamps and stays as per requirements. The pipes laid above the floor level (sunken level), it should be rigidly fixed with PCC bedding and levelled at every 1 metre intervals.				
a	75mm dia	R.only	R-mts		
b	110mm dia	R.only	R-mts		
c	150mm dia	150	R-mts		
d	200mm dia	145	R-mts		
e	250mm dia	95	R-mts		
f	300 mm dia	R.only	R-mts		
3.0	Making of Rain Water Collection khurra's grating with PVC bends, enlarger with PVC sheet flashing & 200 x 200mm with PVC Grating	23	Nos		
4.0	Supply of material Constructing brick masonry Rain Water Chambers / Manholes with `A' class Table Moulded bricks in cement mortar 1:5 (1 cement : 5 fine sand), R.C.C. Top slab with 1:2:4 Mix (1 Cement : 2 coarse sand: 4 graded stone aggregate), foundation concrete with 1:4:8 concrete (1 cement :4 coarse sand : 8 graded stone aggregate) Inside plastering 12mm thick with CM 1:3 (1 cement :3 fine sand) finished with floating coat of neat & making channel in cement concrete 1:2:4 (1 cement : 2 coarse sand :4 graded stone aggregate) and external plastering in CM 1:3 sponge finished neatly finished complete as per standard design and as per drawing and as per drawing and all walls (four sides)both side plastering with FOSROC water proofing. Chamber bottom PCC with water proofing.				
a	Inside size of 450 x 450mm(200mm wall thickness) & depth not exceeding 900mm including providing 450 x 450mm C.I. cover with frame. (M.D.)	15	Each		
b	- do - size of 600 x 600(200mm wall thickness) depth of 1200mm with MD CI cover	8	Each		
c	Dia 900 mm (top level) and 900 dia at bottom level in case of depth exceeds 1200 mm and up to 1650 mm with C I cover (MD)	R.only	Each		
d	Dia 1200 mm (top level) and 1200 dia at bottom level in case of depth exceeds 1650 and up to 2300 mm with C I cover (MD)	R.only	Each		
5.0	Providing, laying, jointing testing and commissioning of RCC Hume pipes (NP2 class) conforming to IS: 458 with collar joint in CM 1:3 packing the collar joints with asbestos rope dipped in cement slurry, finishing the surface smooth with neat cement slurry, including, curing & laid to correct levels and required slope below ground in trenches up to required depth including excavation in all kind of soil excluding soft rock and hard rock, backfilling with available earth in layer not exceeding 20 cm in depth, watering, levelling consolidation, disposing the excess earth to all lead etc., complete.				

SL NO	DESCRIPTION OF WORK	TOTAL QUANTITY	UNIT	RATE(Rs)	AMOUNT (Rs.)
a	150mm dia	R.only	R-mts		
b	200mm dia	R.only	R-mts		
c	300mm dia	R.only	R-mts		
6.0	Earth work excavation for trenches in all types of soil (width of trench shall be as shown in the detailed drawing) including soft rock and disintegrated rock for laying rainwater pipes. The soil shall be deposited on banks with all lead, lift, including necessary wooden/steel form work where ever required. Depositing of the surplus earth after backfilling to a initial lead of 30 meters. Refilling of the pipe line trenches and foundation with selected earth available from the trench excavation including watering consolidation in layers of 15cm thickness complete as per specifications. The back fill soil shall be graded soil free from stones, pebbles, clay lumps and vegetation etc., complete as per the specifications, drawings and the direction of the engineer.				
a	Depth up to 1.65 meters	160	Cum		
b	Depth from 1.65 meters to 2.3 meters	R.only	Cum		
c	Depth from 2.3 meters to 5.0 meters.	R.only	Cum		
7.0	Same as above for hard rock including blasting	R.only	Cum		
Total carried over to abstract					

SL NO	DESCRIPTION OF WORK	TOTAL QUANTITY	UNIT	RATE(Rs)	AMOUNT (Rs.)
E	PUDDLE FLANGES FOR UNDER GROUND SUMP AND ACCESSORIES				
1.0	Supply & fixing, testing and commissioning of GI Class C puddle flanges of required sizes for inlet, outlet, vent and overflow pipes for master underground sump. The puddle flanges shall be threaded end up to 80mm dia and flanged ends above 100mm dia. All the puddle flanges, plates and fittings shall be galvanized after fabrication as per IS specifications.. The scope work also includes supply, installation and testing of aluminium ladder, Cast Iron manhole frame and cover for master underground water tank etc., complete as per specifications and drawings.				
a	25 mm dia GI puddle flange	R.Only	Each		
b	32 mm dia GI puddle flange	3	Each		
c	40 mm dia GI puddle flange	2	Each		
d	50 mm dia GI puddle flange	30	Each		
e	65 mm dia GI puddle flange	3	Each		
f	80 mm dia GI puddle flange	5	Each		
g	100 mm dia GI puddle flange	9	Each		
h	150 mm dia GI puddle flange	R.Only	Each		
i	200 mm dia GI puddle flange	R.Only	Each		
2.0	Cast iron frame and cover heavy duty of weight 75kgs. size 600x600 mm	15	Each		
3.0	Cast iron frame and cover Light duty of weight 38kgs..size 600x600 mm	15	Each		
4.0	80mm dia Vent with mosquito proof mesh	25	Nos		
5.0	Supply & fixing of cast iron steps for U.G sump and OHTs	55	Each		
6.0	Supply and fixing of aluminium ladders	2	Each		
TOTAL carried over to abstract					
F	PUMPS & ACESSORIES				
NOTE : PUMPS ARE INCLUSIVE OF NECESSARY CABLE, PANEL, CONTROL PANEL, MCC/MCCB ETC, AND CONNECTION SHALL BE DONE BY WELL SKILLED ELECTRICIAN. Electrical contractor will leave the incomer cable near the Pump room.					
1.0	Supply, Installing, testing & commissioning of approved make submersible pumps for pumping the water from rain water sump (block A) to raw water sump including necessary Control Valves, Non-Return Valves and Rigid Hose pipe (1 working + 1 stand by) Capacity: 7.5m3/hr @ 10 mts head . All the valves, and pump material to be Non Corrosive type. The cost Shall include the pump panel, Necessary length and Size UG cable (Insulated) from pump room to respective sump, starter etc complete. Pump shall have dry run protection	1	Set		
2.0	Supply, Installing, testing & commissioning of approved make submersible pumps for pumping the water from rain water sump (block B) to raw water sump including necessary Control Valves, Non-Return Valves and Rigid Hose pipe (1 working + 1 stand by) Capacity: 12m3/hr @ 10 mts head . All the valves, and pump material to be Non Corrosive type. The cost Shall include the pump panel, Necessary length and Size UG cable (Insulated) from pump room to respective sump, starter etc complete. Pump shall have dry run protection	1	Set		

SL NO	DESCRIPTION OF WORK	TOTAL QUANTITY	UNIT	RATE(Rs)	AMOUNT (Rs.)
3.0	Supply, Installing, testing & commissioning of approved make submersible pumps for pumping the water from rain water sump (block C) to raw water sump including necessary Control Valves, Non-Return Valves and Rigid Hose pipe (2 working + 1 stand by) Capacity: 10m3/hr @ 10 mts head. All the valves, and pump material to be Non Corrosive type. The cost Shall include the pump panel, Necessary length and Size UG cable (Insulated) from pump room to respective sump, starter etc complete. Pump shall have dry run protection	1	Set		-
4.0	Supply, Installing, testing & commissioning of approved make submersible pumps for pumping the water from rain water sump (block D) to raw water sump including necessary Control Valves, Non-Return Valves and Rigid Hose pipe (1 working + 1 stand by) Capacity: 11.5m3/hr @ 10 mts head. All the valves, and pump material to be Non Corrosive type. The cost Shall include the pump panel, Necessary length and Size UG cable (Insulated) from pump room to respective sump, starter etc complete. Pump shall have dry run protection	1	Set		
5.0	Supply, Installing, testing & commissioning of approved make submersible pumps for pumping the water from rain water sump (block E) to raw water sump including necessary Control Valves, Non-Return Valves and Rigid Hose pipe (2 working + 1 stand by) Capacity: 10.5m3/hr @ 10 mts head . All the valves, and pump material to be Non Corrosive type. The cost Shall include the pump panel, Necessary length and Size UG cable (Insulated) from pump room to respective sump, starter etc complete. Pump shall have dry run protection	1	Set		
5.0	Supply, Installing, testing & commissioning of approved make submersible pumps for pumping the sea water from sea water sump (block C) to sea water OHT including necessary Control Valves, Non-Return Valves and Rigid Hose pipe (1 working + 1 stand by) Capacity: 1 m3/hr @ 30 mts head. All the valves, and pump material to be Non Corrosive type. The cost Shall include the pump panel, Necessary length and Size UG cable (Insulated) from pump room to respective sump, starter etc complete. Pump shall have dry run protection	1	Set		
5.0	Supply, Installing, testing & commissioning of approved make submersible pumps for pumping the reed bed treated water from reed bed treated water sump to flush water sump including necessary Control Valves, Non-Return Valves and Rigid Hose pipe (1 working + 1 stand by) Capacity: 5 m3/hr @ 10 mts head. All the valves, and pump material to be Non Corrosive type. The cost Shall include the pump panel, Necessary length and Size UG cable (Insulated) from pump room to respective sump, starter etc complete. Pump shall have dry run protection	1	Set		

SL NO	DESCRIPTION OF WORK	TOTAL QUANTITY	UNIT	RATE(Rs)	AMOUNT (Rs.)
5.0	Supply, Installing, testing & commissioning of approved make submersible pumps for pumping the water from treated water sump to OHT for cooling tower including necessary Control Valves, Non-Return Valves and Rigid Hose pipe (1 working + 1 stand by) Capacity: 10 m³/hr @ 40 mts head . All the valves, and pump material to be Non Corrosive type. The cost Shall include the pump panel, Necessary length and Size UG cable (Insulated) from pump room to respective sump, starter etc complete. Pump shall have dry run protection	1	Set		
6.0	Supply, Installing, testing & commissioning of approved make Constant speed Monoblock pump for pumping the water from treated water sump to 5 domestic OHTs . The cost shall include necessary Control Valves, pressure switch and Non-Return Valves. The Pumps shall deliver 5 m³/hr @ head of 45mts @ 4.5 Kg pressure with necessary panel and cabling from the pumps to panel at PHE Pump room (1 working + 1 stand by) with 400 Lts Pressure vessel of welmet make, solenoid or motoring valve, control panel INCLUSIVE OF ALL TAXES. The cost should include voltage stabilization panel. Electrical contractor will leave the cable near the panel with necessary size MCB or MCCB and the cost of electrical wiring shall include connection from MCB or MCCB to pump panel and to pump motors. All the valves, and pump material to be Non Corrosive type. The cost Shall include the pump panel, Necessary length and Size UG cable (Insulated) from pump room to respective sump, starter etc complete. Pump shall have dry run protection. 5 m³/hr @ head of 45mts @ 4.5 Kg pressure	1	Set		-
7.0	Supply, Installing, testing & commissioning of approved make Variable speed Monoblock pump for pumping the water from flush water sump to 5 flush OHTs . The cost shall include necessary Control Valves, and Non-Return Valves. The Pumps shall deliver 5 m³/hr @ head of 45 mts @ 4.5 Kg pressure with necessary panel and cabling from the pumps to panel at PHE Pump room (1 working + 1 stand by) with 400 Lts Pressure vessel of welmet make, solenoid or motoring valve, control panel INCLUSIVE OF ALL TAXES. The cost should include voltage stabilization panel. Electrical contractor will leave the cable near the panel with necessary size MCB or MCCB and the cost of electrical wiring shall include connection from MCB or MCCB to pump panel and to pump motors. All the valves, and pump material to be Non Corrosive type. The cost Shall include the pump panel, Necessary length and Size UG cable (Insulated) from pump room to respective sump, starter etc complete. Pump shall have dry run protection. Capacity 5 m³/hr @ 45 m head @ 4.5 Kg pressure	1	Set		
8.0	Supply & fixing of Electronic Auto level controller with Providing and fixing electronic type level indicator for water tanks mounting in panel with the following features, level display, alarm when water level is low or high, full range from one level to four level display and manual reset for alarm etc. Sensor should be non ferrous type (Non corrosive type). Display and control panel to be kept in the Pump room- Refer Schematic-1 for details	10	Nos		-

SL NO	DESCRIPTION OF WORK	TOTAL QUANTITY	UNIT	RATE(Rs)	AMOUNT (Rs.)
9.0	Supply & fixing of Electronic Auto level controller with Providing and fixing electronic type level indicator for water tanks mounting in panel with the following features, level display, alarm when water level is low or high, full range from one level to four level display and manual reset for alarm etc. Sensor should be non ferrous type (Non corrosive type). Display and control panel to be kept in the Pump room- Refer Schematic-2 for details.	5	Nos		-
10.0	Supply & fixing of Electronic Auto level controller with Providing and fixing electronic type level indicator for water tanks mounting in panel with the following features, level display, alarm when water level is low or high, full range from one level to four level display and manual reset for alarm etc. Sensor should be non ferrous type (Non corrosive type). Display and control panel to be kept in the Pump room- Refer Schematic-3 for details.	2	Nos		
11.0	Supply & fixing of Electronic Auto level controller with Providing and fixing electronic type level indicator for water tanks mounting in panel with the following features, level display, alarm when water level is low or high, full range from one level to four level display and manual reset for alarm etc. Sensor should be non ferrous type (Non corrosive type). Display and control panel to be kept in the Pump room- Refer Schematic-4 for details.	3	Nos		
12.0	Supply & fixing of Electronic Auto level controller cables with electrical wiring conduit supports from wall and ceiling probs and all other accessories complete as required.				
a	2Cx1.5 Sqmm Cable with MS Conduit	2000	R-mts		
TOTAL carried over to abstract					
G SOLAR WATER HEATER					
1.0	Supply and fixing of Solar flat plate collector with tanks, supporting stands and all necessary valves and fittings(Note: For details refer technical specification & drawings). The system shall be Gravity flow as per IS standards. There will be provision of heating by electrical back up in the absence of sufficient solar radiation.				
a	Capacity: 1000 L	1	Set		
b	Capacity: 500 L	1	Set		
c	Capacity: 250 L	1	Set		
TOTAL carried over to abstract					
H WATER TREATMENT PLANT - 52 KLD (BASED ON THE WATER TEST REPORT)					
NOTE: ALL QUOTED EQUIPMENTS AND PUMPS ARE INCLUSIVE OF ALL TAXES					
I	EQUIPMENTS / ELECTRICAL / PIPING				
1.0	Design, Engineering, and providing all equipment / machinery at site, installation and commissioning of equipments / electrical / piping inclusive of all types of taxes and duties as described in specification.				
2.0	Filter feed pumps-Horizontal, Centrifugal (self priming type) design complete with motor, base plate, couplings etc with wetted parts in CI -2 Nos (2W+1S)				
	3.25 m3/hr, 30 m head	1	Set		
3.0	Chlorine dosing system of electromechanical type of capacity 0-2 LPH ,including dosing pump, storage tank of 100 Lts and other essential accessories complete.	1	Nos		
4.0	Pressure Sand filter with a filtration rate of 3.25 m3/hr	1	Nos		

SL NO	DESCRIPTION OF WORK	TOTAL QUANTITY	UNIT	RATE(Rs)	AMOUNT (Rs.)
	Size : 1000 mm DIA X 1575 mm HOS with frontal piping, filter media and valves				
5.0	Activated carbon filter with a filtration rate of 3.25 m3/hr	1	Nos		
	Size: 1000mm DIA X 1575 mm HOS with frontal piping, filter media and valves.				

SL NO	DESCRIPTION OF WORK	TOTAL QUANTITY	UNIT	RATE(Rs)	AMOUNT (Rs.)
6.0	Supply of Softener, Softener Feed Pumps, Motors, gauges & Stand by Pump - 2Nos (1W +1S)	R.Only	Set		
	3.25. m3/hr @ 30m head				
7.0	Reverse osmosis system with a feed flow of 3.25m3/hr and the treated flow rate of 2.5 m3/hr and other essential accessories complete with required suitable high pressure pumps (1working +1standby)	1	Set		
8.0	Micron filter to filter the water with a rate of 3.25 m3/hr with an operating pressure range of 4 to 4.5Kg/cm2	R.Only	Nos		
9.0	Ozonator unit with Oxygen Concentrator, Ventury Injector, Mixing Vane Cylinder, Mixing Tank, Re-circulation Pump etc. with required ozone dosage of 0.05 kg/hr for a flow rate of 3.25m3/hr	R.Only	Nos		
10.0	U. V. Sterilizer is to provide Ultraviolet Disinfection for the flow through capacity of 21 m3/hr with required no. of UV Lamps.	R.Only	Nos		
11.0	Supply of Softener, Softener Feed Pumps, Motors, gauges & Stand by Pump - 2Nos (1W +1S)				
	3.25 m3/hr @ 30m head	R.Only	LS		
11.0	Electrical Wiring.The cost should include voltage stabilization panel. Electrical contractor will leave the cable near the panel with necessary size MCB or MCCB and the cost of electrical wiring shall include connection from MCB or MCCB to pump panel and to pump motors.	1	LS		
12.0	Plant Piping				
13.0	Interconnecting MS/GI piping, Puddle flanges , fittings , valves, Pressure gauges & pressure switches within the battery limits of the WTP.	1	LS		
14.0	Level Switch for pump control	1	Nos		
15.0	Supply, installing, testing and commissioning of water flow meter to measure 0 - 15 cum/hr, etc., complete	1	Nos		
TOTAL FOR WATER TREATMENT PLANT					
I TERTIARY TREATMENT FOR REED BED - 10 KLD					
NOTE: ALL QUOTED EQUIPMENTS AND PUMPS ARE INCLUSIVE OF ALL TAXES					
I	EQUIPMENTS / ELECTRICAL / PIPING				
1.0	Design, Engineering, and providing all equipment / machinery at site, installation and commissioning of equipments / electrical / piping inclusive of all types of taxes and duties as described in specification.				
2.0	Filter feed pumps-Horizontal, Centrifugal (self priming type) design complete with motor, base plate, couplings etc with wetted parts in CI -2 Nos (1W+1S)				
	1.25 m3/hr, 20 m head	1	Set		
3.0	Chlorine dosing system of electromechanical type of capacity 0-2 LPH ,including dosing pump, storage tank of 100 Lts and other essential accessories complete.	1	Nos		
4.0	Pressure Sand filter with a filtration rate of 1.25 m3/hr	1	Nos		
	Size: 450 mm DIA X 1575 mm HOS with frontal piping, filter media and valves	1			
5.0	Activated carbon filter with a filtration rate of 1.25 m3/hr	1	Nos		
	Size: 450mm DIA X 1575 mm HOS with frontal piping, filter media and valves.				
6.0	Ultrafiltration unit with a flow rate of 1.25 m3/hr	1	Set		

SL NO	DESCRIPTION OF WORK	TOTAL QUANTITY	UNIT	RATE(Rs)	AMOUNT (Rs.)
7.0	Ozonator unit with Oxygen Concentrator, Ventury Injector, Mixing Vane Cylinder, Mixing Tank, Re-circulation Pump etc. with required ozone dosage of 0.05 kg/hr for a flow rate of 1.25 m3/hr	R.Only	Nos		
8.0	Electrical Wiring.The cost should include voltage stabilization panel. Electrical contractor will leave the cable near the panel with necessary size MCB or MCCB and the cost of electrical wiring shall include connection from MCB or MCCB to pump panel and to pump motors.	1	LS		
9.0	Plant Piping				
10.0	Interconnecting MS/GI piping, Puddle flanges , fittings , valves, Pressure gauges & pressure switches within the battery limits of the WTP.	1	LS		
11.0	Level Switch for pump control	1	Nos		
12.0	Supply, installing, testing and commissioning of water flow meter to measure 0 - 15 cum/hr, etc., complete	1	Nos		
TOTAL FOR WATER TREATMENT PLANT					

ELECTRICAL - SUMMARY		
Sl.no	Description	Amount (Rs)
1	Total for all Electrical works	
2	Total for D.G Set & Accessories	
3	Total for UPS	
4	Total for SOLAR PV 70 KW	
	Taxes	
	Duties	
	TOTAL TO SUMMARY(Inclusion of Taxes)	

BOQ FOR ELECTRICAL WORKS,DG,UPS AND SOLAR PV FOR NCSCM		
MAIN SECTION-1		
Abstract for Electrical works		
Sl.no	Description	Amount
		McD BERL
1	Internal Wiring(Ceiling Fan,Socket OutLet TelePhone,Primary & Secondary Light Points,Light Fixtures)	
2A	HT PANEL	
2B	Transformer (750 KVA)	
3	HT CABLES AND TERMINATION	
4	Earthing	
5	LT Panels	
6	Lighting Protection Systems	
7	Safety and Miscellaneous Items	
8	Liasoining work	
Sub - Total		
Taxes		
TOTAL		

MAIN SECTION-2		
Abstract for DG works		
1	D.G Set	
		Taxes
		TOTAL
MAIN SECTION-3		
Abstract for UPS Works		
1	UPS	
		Taxes
		TOTAL
MAIN SECTION-4		
Abstract for SOLAR PV		
1	SOLAR PV 70 KW	
		Taxes
		TOTAL
GRAND TOTAL		
Exclusions : Statutory Deposits & Fees LAN & DATA Networking cables & active / passive components HVAC & PHE Electrical subdistribution cabling, starter panels, MCC's, VFD panels. Civil works like pedestals, foundations, chambers etc.		

BILL OF QUANTITIES FOR ELECTRICAL WORKS FOR NCSCM

S.No	Description of Work	Qty	Units	Rate	Amount
	PREAMBLE TO BOQ :				
	1. All item rate to included with supports and required accessories				
	2. Cable trays & raceways rates to be included with necessary GI supports, brackets and accessories.				
	3. All MCCB to be with overload, short circuit & shunt trip releases with additional 2nos NO/NC contacts for HVAC/ FACP interfacing, where ever applicable.				
	4. Where ever TPN CB are mentioned separate Neutral link to be provided with appropriate sizing to meet the respective current rating				
	5. All panels & DB's quoted to be as per TNEB & TN Electrical Inspectorate requirement, with proper phase segregation & shrouding etc.				
	6. All cables in Panels to terminate in cable alley & suitable busbar extensions / Cable terminal blocks to be provided				
	7. Looping of all circuits should happen in switch box / light fixture terminal box. No wire joints in isolation are allowed.				
	8. All wires quoted should be FRLS rated suitable single / three phase reuirement, as applicable, meeting relevant IS code.				
	9. All electrical material quoted should be ISI certified & marked, as applicable.				
	10. All LT cable should be XLPE insulated A2XFY/A2XWY type.				
	11. All copper wires & cables should be MSCC type.				
	12. All HT switchgear should be as per TNEB requirement & outdoor type, as applicable.				
	13. All LT Panels of indoor type should be IP54 rated. And outdoor panels should be IP55 rated.				
	14. Main LT Panel to be provided with DG synchronising relays suitable for 2nos. 500kVA DG set, Transformer protection relay with 12window annunciation, Intertrip & aux relays, PLC based interlock for incomer, Transformer incomer suitable for Busduct/ Cable termination, ACB's with communication port, all circuit breakers with LSIG release.				
	15. Capacitor panel to be with proper vent fans & as per capacitor manufacturers standard recommended design.				
	16. All breakers to be with lcu = lcs				
	17. All MCCBs to be provided with FD rotary handle mechanism.				
	18. PVC Conduits to be of FRLS type.				

	MAIN SECTION-1			
	<u>ELECTRICAL BOQ</u>			
1.0	PART-1 INTERNAL ELECTRIFICATION			
1.1	Primary points			
	Supply and wiring for primary light point with FRLS 2Rx1.5sqmm 1.1KV grade ISI marked PVC insulated single core standard copper conductor cable conforming to IS:694 (with latest ammendments)in 25mm dia 2mm thick electrical grade PVC conduit surface run /concealed in ceiling,wall, column, floor, including supply and fixing of 6amps flush type modular(plate) control switches fixed in suitable size sheet metal flush box suitable for modular switches and covered with modular switch plates and all necessary components and earthing with 1Rx1.5sqmm insulated copper wire run inside the conduit including supply of all fixing materials,accessories,and interconnections complete as required and approved by the consultant.			
	b).The secondary point wiring shall include necessary wiring looped from the primary light point as indicated in the electrical layout drawings.			
	Supply	650	Point	
	Installation	650	Point	
1.2	Secondary points			
	Supply and wiring generally same as item No1.1 above but without control switch.			
1.2.1	a) up to two light point			
	Supply	170	Point	
	Installation	170	Point	
1.2.2	b) up to three light point			
	Supply	75	Point	
	Installation	75	Point	
1.2.3	c) up to four light point			
	Supply	25	Point	
	Installation	25	Point	
1.2.4	d) above four light point			
	Supply	10	Point	
	Installation	10	Point	
1.2.5	e) upto five light point but controlled by MCB from DB			
	Supply	40	Point	
	Installation	40	Point	
1.2.6	f) upto six light point but controlled by MCB from DB			
	Supply	15	Point	

	Installation	15	Point		
1.2.7	g) above eight light point but controlled by MCB from DB				
	Supply	10	Point		
	Installation	10	Point		
1.2.8	h) Four to eight Lights and above points controlled by MCB and Timer				
	Supply	10	Point		
	Installation	10	Point		
1.3	Two Way light point including staircase				
	Supply and wiring same as in item No1.1 above for light point and fans (as per requirement) in staircase, rooms, etc and other with 1/2/3 nos of 2 way 6A modular plate switches.				
	Supply	2	Point		
	Installation	2	Point		
1.4	Ceiling fan points				
	Supply and wiring same as in item No1.1 with 6A control switch and step fan regulator mouted on modular plate switches.				
	Supply	15	Point		
	Installation	15	Point		
1.5	Bell points				
	Supply and wiring same as in item No1.1 with 6A bell push switch mounted on decorative modular plate and switch.				
	Supply	RO	Point		
	Installation	RO	Point		
1.6	Supply and wiring with FRLS 2Rx2.5sqmm+1Rx1.5sqmm of 1.1KV grade,ISI marked,PVC insulated single core stranded copper conductor cable conforming to IS:694(with latest amendments) in 25mm dia conduit from DB to the first point as required and approved by the consultant/client.				
	Supply	6000	Mtrs.		
	Installation	6000	Mtrs.		
1.7	Daylight sensors with dimmable balast for Light points with necessary wiring and terminations as a full set.				
	Supply	40	Nos		
	Installation	40	Nos		
1.8	Occupancy sensors with day light override for the Light points necessary wiring and terminations as a full set.				
	Supply	50	Nos		

		Installation	50	Nos		
1.9	Motion sensors for the Light points in the common area necessary wiring and terminations as a full set.					
		Supply	10	Nos		
		Installation	10	Nos		
2.0	Supply and fixing of power sockets flush type modular(plate) with switches fixed in suitable size sheet metal flush box suitable and with modular switch plates and all necessary accessories and interconnections complete as required and approved by the consultant/client.					
2.1	6Amps, 5 pin switch socket outlet in lighting switch board					
	Supply and fixing of 6A 5 pin flush type, 1.1KV grade, switch & socket outlet with safety shutters in the lighting control switch board including interconnections complete as required.					
		Supply	350	Point		
		Installation	350	Point		
2.2	6Amps, 2no. 5 pin switch Intel socket outlet point for UPS Point					
	Supply and fixing same as in item No2.0 above but for 6A 5pin combined switch socket outlet with safety shutters point including supply and fixing of 6A 5pin, 1.1KV grade, flush type combined modular switch socket outlet in a suitable size metal sheet box and covered with modular switch plate.					
		Supply	750	Point		
		Installation	750	Point		
2.3	Supply and wiring with FRLS 2Rx2.5sqmm+1Rx1.5sqmm of 1.1KV grade, ISI marked, PVC insulated single core stranded copper conductor cable conforming to IS:694(with latest amendments) in 25mm dia conduit from DB to the first point & looping as required and approved by the consultant/client.					
		Supply	11000	Mtrs.		
		Installation	11000	Mtrs.		
3.0	16Amp/6Amp Universal switch socket outlet					
	Supply and fixing of modular 6/16A, 5 pin single phase switch socket outlet fixed in a suitable size metal sheet box suitable for switches and sockets, including supply of fixing materials interconnections complete as required and approved by the consultant/client.					

		Supply	300	Point		
		Installation	300	Point		
3.1.1	Supply and fixing of 32A, 3 phase, 5 Pin Plastic moulded Industrial Plug with interlocked switch					
		Supply	10	Point		
		Installation	10	Point		
3.1.2	Supply and fixing of 63A, 3 phase, 5 Pin Plastic moulded Industrial Plug with interlocked switch					
		Supply	10	Point		
		Installation	10	Point		
3.1.3	Supply and fixing of 63A, 4P MCB din rail mounted in an enclosure					
		Supply	4	Point		
		Installation	4	Point		
3.2 a)	Supply and wiring with FRLS 2Rx4.0sqmm+1Rx2.5sqmm of 1.1KV grade,ISI marked,PVC insulated single core stranded copper conductor cable conforming to IS:694(with latest amendments) in 25mm dia conduit from DB to the first point & looping as required and approved by the consultant/client.					
		Supply	2900	Mtrs.		
		Installation	2900	Mtrs.		
3.2 b)	Supply and wiring with FRLS 2Rx4.0sqmm+1Rx2.5sqmm of 1.1KV grade,ISI marked,PVC insulated single core stranded copper conductor cable conforming to IS:694(with latest amendments) in existing conduit / raceways from DB to the first point & looping as required and approved by the consultant/client.					
		Supply	1900	Mtrs.		
		Installation	1900	Mtrs.		
3.2 c)	Supply and wiring with FRLS 2Rx2.5.0sqmm+1Rx1.0sqmm of 1.1KV grade,ISI marked,PVC insulated single core stranded copper conductor cable conforming to IS:694(with latest amendments) in existing conduit / raceways from DB to the first point & looping as required and approved by the consultant/client.					
		Supply	1900	Mtrs.		
		Installation	1900	Mtrs.		

3.3	Supply and wiring with FRLS 4Rx6.0sqmm+1Rx4.0sqmm of 1.1KV grade,ISI marked,PVC insulated single core stranded copper conductor cable conforming to IS:694(with latest amendments) in 25mm dia conduit from DB to the first point as required and approved by the consultant/client.				
	Supply	500	Mtrs.		
	Installation	500	Mtrs.		
3.4	Supply and wiring with FRLS 2Rx10.0sqmm+1Rx6.0sqmm of 1.1KV grade,ISI marked,PVC insulated single core stranded copper conductor cable conforming to IS:694(with latest amendments) in 32mm dia conduit				
	Supply	RO	Mtrs.		
	Installation	RO	Mtrs.		

4	MCB Distribution boards:				
	Supply and installation of following TPN/SPN MCB DBs of CRCA sheet steel enclosure,dust and vermin proof ,rated for 440V/230V. 3/1 phase,50 HZ AC supply, operation(doubledoor type)inclusive of busbar of suitable capacity,neutral link with required outgoing,DIN bar,and earthing terminals and with silicon based fire/ Heat resistant coating applied inside the DB and painted with approved shade of paint suitable for incorporating SP/DP/TP MCB as specified below with all materials required including supply and fixing of MCBs/ ELMCBs / Isolators/ SFUs and fixed in flush with wall along with all materials required including all associated civil works and earthing as per specifications and the SLD, The MCB & MCCB' S have the Ka Rating-10kA				
4.1	8 WAY VTPN DB (For Internal Main distribution boards for all the floors) with sub meter				
	3 Phase 8 way.Incoming 125A TPN ELMCB				
	Outgoings: 63A TPN MCB - 4Nos.				
	Supply	6	Each		
	Fixing	6	Each		
4.2	6 WAY VTPN DB (For Internal Main distribution boards for all the floors) with sub meter				
	3 Phase 8 way.Incoming 125A 4P MCCB				
	Outgoings: 63A TP MCB - 6Nos.				
	Supply	16	Each		
	Fixing	16	Each		
4.3	12 WAY TPN DB (For Power DB) with sub meter				
	3 Phase 12 way.Incoming 63A TPN ELMCB				
	Sub incommer: 1No. 32A DP MCB for each phase				
	Outgoings: 10/16A SP MCB ('C' curve)				
	Supply	19	Each		
	Fixing	19	Each		
4.4	12 WAY TPN DB (For UPS DB) with sub meter				
	3 Phase 12 way.Incoming 63A TPN ELMCB				
	Sub incommer: 1No. 32A DP MCB for each phase				
	Outgoings: 10/16A SP MCB ('C' curve)				
	Supply	23	Each		
	Fixing	23	Each		

4.5	3 Phase 8 way.Incoming 63A TPN ELMCB				
	Sub incommer: 1No. 32A DP MCB and RCBO for each phase				
	Outgoings: .10/16A SP MCB ('C' curve)				
	Supply	19	Each		
	Fixing	19	Each		
4.6	6WAY TPN DB				
	3 Phase 6 way.Incoming 32A TPN ELMCB				
	Sub incommer: 1No. 25A DP MCB for each phase				
	Outgoings: 10/16A SP MCB ('C' curve) with timer controlled				
	Supply	2	Each		
	Fixing	2	Each		
4.7	4WAY TPN DB				
	3 Phase 6 way.Incoming 32A TPN ELMCB				
	Sub incommer: 1No. 25A DP MCB for each phase				
	Outgoings: 12 Nos.10/16A SP MCB ('C' curve) with timer controlled				
	Supply	RO	Each		
	Fixing	RO	Each		
4.8	12 WAY SPN DB				
	1 Phase 12 way.Incoming 32A SPN ELMCB				
	Outgoing: 10/16A SP MCB ('C' curve)				
	Supply	RO	Each		
	Fixing	RO	Each		
4.9	Supply and installation of 1 No 32/ 63 Amp TPN MCB C Curve 10 kA in Metallic enclosure box. (for AC Units, UPS, pumps, etc.,)				
	Supply	40	Each		
	Fixing	40	Each		
5	LT XLPE Cables				

	Supply of 1.1 KV grade, 2C/3C/3.5C/4C, XLPE insulated, and PVC overall sheathed, stranded aluminium/Copper conductor, flat steel strip/ wire armoured cables conforming to IS:1554/ Part I (with latest amendments) and of following sizes. The cable shall bear ISI certification mark. Laying of the cable in ground/existing cable tray/duct/shaft including transportation of cable to site, excavation of earth, laying the cable and covering with sand and placing the bricks on sides and top, refilling with earth and providing cable route/ joint markers complete as required. (the laying of cable in trench shall include removing the trench cover, reclosing it after laying cable in good condition and fixing it to the cable supports on wall with suitable clamps including supply of clamps complete as required)				
5.1	3.5 C X 400Sq.mm AR. AL Cable (from dg to Main LT panel)				
	Supply	340	Mtrs		
	Laying	340	Mtrs		
5.2	3.5 C X 300Sq.mm AR. AL Cable(From electrical room to AC chillers at D block terrace and from electrical room to D&E block floor panel.)				
	Supply	880	Mtrs		
	Laying	800	Mtrs		
5.3	3.5 C X 185 Sq.mm AR. AL Cable (from electrical room to B block floor panel , D block main panel to third floor sub panel)				
	Supply	200	Mtrs		
	Laying	200	Mtrs		
5.4	3.5 C X 120 Sq.mm AR. AL Cable (from c block electrical room to B block first and third floor panel)				
	Supply	150	Mtrs		
	Laying	150	Mtrs		
5.5	3.5 C X 95 Sq.mm AR. AL Cable (from main LT Panel to Utility, A and E block floor Panel , B block ground floor main Panel to GF and FF sub panel, C block ground floor main Panel to GF and SF sub panel)				
	Supply	500	Mtrs		
	Laying	500	Mtrs		
5.6	3.5 C X 70 Sq.mm AR. AL Cable (From A block main panel to GF, FF, SF, TF sub Panels)				
	Supply	150	Mtrs		
	Laying	150	Mtrs		

5.7	3.5C X 50 Sq.mm AR. AL Cable (B block main floor panel to SF floor sub Panel, E block GF main Panel to GF,SF sub Panels)				
		Supply	150	Mtrs	
		Laying	150	Mtrs	
5.8	3.5C X 35 Sq.mm AR. AL Cable (B block main panel to TF sub Panel, B block main panel to SF sub Panel)				
		Supply	150	Mtrs	
		Laying	150	Mtrs	
5.9	4C X 25 Sq.mm AR. AL Cable (D block main panel to GF, FF sub Panel and E Block main Panel to FF sub Panel)				
		Supply	150	Mtrs	
		Laying	150	Mtrs	
6	4C X 16 Sq.mm AR. AL Cable (All block sub panels to floor DB's)				
		Supply	950	Mtrs	
		Laying	950	Mtrs	
6.1	4C X 10 Sq.mm AR. AL Cable (for External lighting)				
		Supply	500	Mtrs	
		Laying	500	Mtrs	
7	LT XLPE Cables End termination (Tinned copper lugs, long barrel)				
7.1	3.5 C X 400Sq.mm AR. AL Cable		20	Nos.	
7.2	3.5 C X 300 Sq.mm AR. AL Cable		6	Nos.	
7.3	3.5 C X 185 Sq.mm AR. AL Cable		6	Nos.	
7.4	3.5 C X 120 Sq.mm AR. AL Cable		2	Nos.	
7.5	3 C X 95 Sq.mm AR. AL Cable		14	Nos.	
7.6	3.5 C X 70 Sq.mm AR. AL Cable		8	Nos.	
7.7	3.5 C X 50 Sq.mm AR. AL Cable		6	Nos.	
7.8	3.5 X 35 Sq.mm AR. AL Cable		4	Nos.	
7.9	4C X 25 Sq.mm AR. AL Cable		6	Nos.	
8.0	4C X16 Sq.mm AR. AL Cable		200	Nos.	
8.1	4C X 6 Sq.mm AR. CU Cable		RO	Nos.	

8.2	4C X 10 Sq.mm AR. CU Cable	RO	Nos.		
9	Ladder/ Perforated type Cable tray				
	Supply and installation of 2mm thick FPR perforated/ ladder type cable tray side rail , washers, bolts,supporting brackets of same make and all other accessories required for fixing the cable tray complete as required and as directed by the Engineer-in-charge.				
9.1	300 X 100 X 2mm wide ladder type cable tray				
	Supply	250	Mtrs		
	Laying	250	Mtrs		
9.2	600 X 100 X 2mm wide ladder type cable tray				
	Supply	RO	Mtrs		
	Laying	RO	Mtrs		
9.3	300 X 100 X 2mm wide perforated cable tray				
	Supply	RO	Mtrs		
	Laying	RO	Mtrs		
9.4	450 X 100 X 2mm wide perforated cable tray				
	Supply	RO	Mtrs		
	Laying	RO	Mtrs		
9.5	600 X 100 X 2mm wide perforated cable tray				
	Supply	30	Mtrs		
	Laying	30	Mtrs		
10	Supply and erection of 14SWG Thick GI Raceways, AS PER APPROVED SAMPLE,(under floor multi-compartment metalised cable managemnet system) of following sizes.The rates for fixing in floor shall be inclusive of all necessary Civil Works like Cutting & Making Good of Screed, Tiles & similar floor finishes.				
10.1	300 mm x 38 mm Race ways (single compartment)				
	Supply	RO	Mtrs		
	Laying	RO	Mtrs		
10.2	200 mm x 38 mm Race ways (single compartment)				
	Supply	400	Mtrs		
	Laying	400	Mtrs		
10.3	100 mm x 38 mm Race ways (single compartment)				
	Supply	100	Mtrs		
	Laying	100	Mtrs		
11.0	CONDUITS				

	Supply and Laying and fixing of FRLS PVC conduits of 2mm thick of the following sizes in slab or external with necessary fixing accessories for PA system, home automation and bms integration as required with necessary accessories such as bends, collars, junction boxes and pull boxes and with covering covering plate as required as per the site condition and as approved by the client/ consultants.				
11.1	25mm dia conduit				
		Supply	2000	Mtrs	
		Laying	2000	Mtrs	
11.2	32mm dia conduit				
		Supply	300	Mtrs	
		Laying	300	Mtrs	
11.3	40mm dia conduit				
		Supply	RO	Mtrs	
		Laying	RO	Mtrs	
12	LIGHT FITTINGS				
12.1	INDOOR FIXTURES				
	Supply and installation of following light fittings with lamps complete with necessary Dimmeble ballast should be adoptable for daylight sensor, and all other accessories prewired including lamps, fittings conforming to IS-10322 with latest amendments of the following types. Installation of light fittings with flexible hose, suspension rod/chain.clamps etc. required for such installation and complete as per specifications including painting with approved shade paint and necessary interconnections.				
12.2	TPS 814/414 D8 HF 4XTLS 14W Surface mounted CFL lamps		600	No	
12.3	FBH 145/218L HF 2xPLC 18W Down light CFL lamps		150	No	
12.4	FCS 518/218 2XPLL 18W Surface mounted CFL lights		60	No	
12.5	TBS 669/228 M2 HF 2XTL5 28W Recess mounted CFL lights		16	No	
12.6	FBH 225/226 2XPLC 26W CFL down light		150	No	
12.7	1X13 Recess mounted CFL lights		480	No	
12.8	TB 90/236 2XTLD 36/TL 40W Recess mounted CFL lights		40	No	
12.9	TMS 122/128 1X28W Surface mounted		80	No	

13	TMC 55/136 1X28W FTL Wall Mounted	40	No		
13.1	FMS 200/111 1XPLS 9/11W Mirror lights	40	No		
13.2	1X11W FXC 101-1XPL-S/2P 11W ACO Bulk head	80	No		
14	OUT DOOR LIGHT FITTING				
	Street light fixture				
14.1	Supply and Installation of 36W CFL die cast aluminium top maintainable street light with curved toughened glass and pot optics reflector with an IP 54 .The street light fittings of CFL lamps type on MS poles with all materials required for				
	Supply	25	Each		
	Installation	25	Each		
14.2	MS Pole				
	Supply, erection and commissioning of following poles including cutting, threading, welding, earth excavation, providing concrete pedestal, coping, supply of GI pipe, WP terminal Box of suitable size, interconnecting cable,fuse, terminal box, 50mm dia GI sleeve, earthing complete as required and as directed by Engineer-in-charge.				
	9 mt. Above ground level, as per drg.				
	Supply	25	Nos		
	Installation	25	Nos		
14.3	Supply and Installation of 36W CFL die cast aluminium top maintainable street light with curved toughened glass and pot optics reflector with an IP 54 .The street light fittings of CFL lamps type on MS poles with all materials required for installation like interconnection cable & bolts, nuts , cut out fuse, terminal block, GI pipe, Junction box & earthing , MS Clamps . Wipro make WSP- 11136 or approved Equivalent.The cost shall include lamp and all fixing accessories.(light fixed on one 9 mtr pole)				
	Supply	RO	Each		
	Installation	RO	Each		
15.0	MS Pole with Double arm				
	Supply, erection and commissioning of following poles				
	9 mt. Above ground level, as per drg.				
	supply	RO	Nos		
	Installation	RO	Nos		
1.0	TOTAL FOR PART - 1-INTERNAL ELECTRIFICATION				

2.0	PART-2 SUBSTATION AND TRANSFORMERS				
	PART-2 SECTION-1 HT PANEL				
	1.The rates shall include 100mm painted MS channel frame/ cement foundation/suspending arrangement /with necessary mounting arrangement as per standards				
	2.Cost of all testing are deemed to ge included in the rates				
2.1	11kV ,350 MVA, 630Amp Gang Operated Double throw fused Air Break Switch on a ESCOM-approved double pole structure including all cross members, Insulators lightning arrestors, necessary earthing, pothead, termination Etc. and with all required Civil Works.				
	Supply	1	Set		
	Installation	1	Set		
2.2	HT METERING PANEL				
	H.T.Metering cubicle,11 KV class, All single ratio CTs including ETV meter as per ESCOM/TNEB				
	All Civil related works like foundation excuded				
	Supply	1	Set		
	Installation	1	Set		
2.3	11KV SINGLE WAY VCB PANEL				
A	11 kV Single Way VCB panel (Outdoor/ P 54) with 630 Amp,350 MVA, MDO type with closing coil , shunt trip, spring charged closing mechanism, operation counter,auxiliary contacts for interlocks, and complete with following. Antipumping relay, panel illumination lamp,Space heater and Breaker control switch,(TRIP-NEUTRAL -CLOSE), Emergency trip button.				
	Busbar: 11kV, 630A, 20kA, 3Ph, Electrolytic copper with color coded PVC heat shrink sleeves.				
	Indicating Lamps: Breaker ON/OFF, Auto Trip, Spring Charged Trip Circuit Healthy, Unhealthy.				
	CTs/PT:				
	CT: 50/20/5A Class 5P 10 Protection & CL 1.0 Metering Cast resin CTs, 11kV as per SLD				
	PT : 11kV/ root 3 : 110V/ root 3 ,100VA,CL 1.0				
	RELAYS:				
	Incomer: 3 Ploe IDMT relay, 2 OC(50-200%) +1 EF(20- 80%) with high set element				
	Trip circuit supervision relay, 24 V DC				
	Antipumping Relay				
	Master Trip relay, 24 V DC				
	Auxiliary relays for WT High trip & Alarm				

	METERING:				
	Incomer:				
	Digital Ammeter , Voltmeter, PF meter, Frequency meter				
	Digital Trivector meter with MDI				
	1 No Bell for 1 Non trip alarm (230 V AC).				
	1 No hooter for trip alarm(24 V DC).				
	The panel shall be suitable for Outdoor Construction and shall be finished in Battleship Grey colour.				
	Provisions for Adaptor Box to be considered if necessary.				
		Supply	1	Nos	
		Installation	1	Nos	
B	11 kV Single Way VCB panel (Outdoor P 54) with 630 Amp,350 MVA, MDO type with closing coil , shunt trip, spring charged closing mechanism, operation counter,auxiliary contacts for interlocks, and complete with following. Antipumping relay, panel illumination lamp,Space heater and Breaker control switch,(TRIP-NEUTRAL -CLOSE), Emergency trip button.				
	Busbar: 11kV, 630A, 20kA, 3Ph, Electrolytic copper with color coded PVC heat shrink sleeves.				
	Indicating Lamps: Breaker ON/OFF, Auto Trip, Spring Charged Trip Circuit Healthy, Unhealthy.				
	CTs/PT:				
	CT: 50/20/5A Class 5P 10 Protection & CL 1.0 Metering Cast resin CTs, 11kV as per SLD				
	PT : 11kV/ root 3 : 110V/ root 3 ,100VA,CL 1.0				
	RELAYS:				
	Incomer: 3 Ploe IDMT relay, 2 OC(50-200%) +1 EF(20- 80%) with high set element				
	Trip circuit supervision relay, 24 V DC				
	Antipumping Relay				
	Master Trip relay, 24 V DC				
	Auxiliary relays for WT High trip & Alarm				
	METERING:				
	Incomer:				
	Digital Ammeter , Voltmeter, PF meter, Frequency meter				
	Digital Trivector meter with MDI				
	Transformer fault aux trip relay , annunciation windows (12window) with ACCEPT/RESET/TEST pushbuttons				
	1 No Bell for 1 Non trip alarm (230 V AC).				
	1 No hooter for trip alarm(24 V DC).				
	The panel shall be suitable for Outdoor Construction and shall				
	Provisions for Adaptor Box to be considered if necessary.				

	Supply	1	Nos		
	Installation	1	Nos		
2.4	LT KIOSK				
	The panel shall be suitable for Outdoor Construction and shall be finished in Battleship Grey colour.				
	Provision for the main metering supplied from the BESCOM				
	with 1no 1250A ACB with EDO as incoming/outgoing.				
	Supply	1	Set		
	Installation	1	Set		
2.5	BATTERY & BATTERY CHARGER				
	Supply,installation, testing and commissioning of automatic FLOAT-CUM-BOOST battery charger unit with fast response SCR controled full wave bridge rectifier(2D+2 SCR) complete with double wound copper conductor main transformer,surge suppressor at the input side,auto float/manual float/manual boost with double pole ON/OFF MCB,at AC input, pilot lamp for charger "ON" indication, other protections, etc with all necessary features as per standards.				
	Battery Charger 24 V DC output , 30 Amps as above including 1 no Integral DC distribution board with 1 No 63 A DP DC MCB incomer and 10 Nos 16 A DP MCBs outgoing The Charger shall be complete with 24 V , 150 AH Sealed Maintenance free Batteries of Approved make Charger Finished in Powder coated finish, Battle ship Grey Colour.				
	Supply	1	Set		
	Installation	1	Set		
2.5A	Supply, laying inclusive of cost of conduits etc and termination of control cables from Transformer marshalling box to HT panel, input supply to marshalling box , mains sensing cable to AMF panel etc.				
2.5B	2C x 2.5 sq.m PVC insulated copper control cables				
	Supply	RO	Mtrs.		
	Installation	RO	Mtrs.		
2.5C	4C x 2.5 sq.mm PVC insulated copper control cables				
	Supply	50	Mtrs.		
	Installation	50	Mtrs.		
2.5D	12C x 2.5 sq.mm PVC insulated copper control cables				
	Supply	100	Mtrs.		
	Installation	100	Mtrs.		

2.0	TOTAL FOR PART-2 SECTION-1 HT PANEL				

3	PART-2 SECTION-2 SUBSTATION				
3.1	11/0.433KV, 750kVA Substation				
	Transformer				
	Supply,installation,testing and commissioning of 3 Phase 50HZ in-door copper wound plinth, mounted delta/star connected dry type Transformer with no load voltage ratio of 11000V/433V,with on load tap changing switch with tapping of - 7.5% to +7.5% in steps of 1.5% which is operated automatically with voltage variation .Transformer shall be suitable for operation in an ambient temp.upto 50Deg.C and shall be supplied with suitable neutral terminal on LT side and all accessories such as silica gel breather,dial type temperature indicator, with voltage sensing relay,cable end boxes on LT side earthing terminals explosion vent drain valve.The transformer shall confirm to IS 2026(with latest ammendments)in all respects like insulation levels,tempetrature rise,impedance voltage and losses.(including testing at manufacturers premises and fist filling of oil) and with adopter box if necessary and with necessary civil works for mounting of transformer as approved by consultants.				
3.2	750kVA,11000/433V trasformer				
	Supply	1	No.		
	Installation	1	No.		
3	TOTAL FOR PART-2 SECTION-2 SUBSTATION				
	PART-2 SECTION-3 HT CABLES AND TERMINATION				
	HT XLPE Cables:				
	Supply of 11 KV grade, 3Core,stranded aluminium conductor,XLPE insulated, PVC Bedded,galvanized flat steel/strip armoured and PVC over all sheathed ,screened cables conforming to IS: 7098/ Part II (with latest amendments) suitable for earthed systems.The cable shall bear ISI certification mark. Laying of 11KV 3Core cable in ground,1000mm below ground level including transportation of cable to site,excavation of earth, laying the cable and covering with sand and placing the bricks on sides ,providing cable route/ joint markers complete as required.(the laying of cable in trench shall include removing the trench cover, reclosing it after laying in good condition and fixing the cable to cable supports with suitable clamps including supply of clamps complete as required)				
3.0	1RX3CX185 Sqmm 11KV, XLPE,Al,Ar cable(From Double pole structure to HT Metering cubicle & HT Metering cubicle to Transformer)				

		Supply	200	Mtrs		
		Laying	200	Mtrs		
	End termination					
3.1	Providing end termination for the following 11 KV,3 Core aluminium conductor XLPE cable including supply of epoxy based end termination kit with all items complete as required and as directed by Engineer in charge.all materials like cable gland, lugs neoprene bushes, crimping tool and interconnections, and with necessary pothead termination kit and earthing complete as required.					
	1RX3CX185 Sqmm 11KV XLPE cable		4	Nos		
3.2						
	TOTAL FOR PART-2 SECTION-3 HT CABLES AND TERMINATION					
3.3	GRAND TOTAL FOR PART-2					
A	PART-3 EARTHING					
B	Copper Plate earthing					
	Providing standard plate earth with 600x600x3.15mm electrolytic copper plate, conforming to IS3043 with latest ammendments,and as per standards including supply of all materials at a depth of 3.5Mtr with copper plate and providing chamber complete with cover and excavation, refilling and necessary civil masonry as required.(Transformer-Neutral 2 Nos, DG Neutral-4Nos and for UPS)					
C	G.I. Plate earthing					
	Providing standard plate earth with 600x600x3.15mm electrolytic GI plate, conforming to IS3043 with latest ammendments,and as per standards including supply of all materials at a depth of 3.5Mtr with copper plate. and providing chamber complete with cover and excavation, refilling and necessary civil masonry as required.(Main LT Panel, Lighting Arrestor, Lift, Body earthing etc.,)					
D	Pipe earthing					
	Providing standard pipe earth station with 38mm dia 2.5mtr long medium class GI pipe conforming to IS 3043 including supply of GI pipe,saddles,clamps,nuts,bolts,and all other materials and providing chamber complete with all interconnections as required and as directed by Enginner- in-charge.					
E	(Ashlok) earthing for UPS					

	Supply , Installation & Commissioning of Safe Earth Electrodes, Ready-Made type (type-39) complete with B grade Crystalline fill , 12 SWG 80-100 micron GI, 3000mm long , 80mm diameter, complete with backfill compound (@ 2bags per electrode) supplied by the manufacturer.	RO	Nos		
4.0	GI Wire/strips				
	Supply and laying following sizes of GI Wire/strips including supply of fixing clamps and accessories when laid inside the building and inclusive of excavation & refilling of earth when laid outside the building and interconnections with earth pit and equipment, terminations/ interconnections in an approved manner as per IS:3043 (with latest amendments) inclusive of supply of all hardwares complete as required.				
4.1	40X6mm GI strip (For HT panel, For Transformer & DG- body earthing and risers)	600	Mtrs		
4.2	40x6mm COPPER strip (For Transformer and DG Neutral Earthing)	200	Mtrs		
4.3	25x3mm GI strip (body earthing for Fencing, SUB- panels and DBs)	500	Mtrs		
4.4	8SWG GI wire for AC Units/ Plumbing / External/basement DB	200	Mtrs		
4.5	25x3 Cu. strip for UPS and UPS DB	500	Mtrs		
4.6	Supply and fixing of earth terminal box comprising of 25 x 6mm copper bus with necessary insulator, top and bottom opening of suitable size as per site condition and interconnections complete as required and approved by the consultant/client	RO	Nos		
4.0	TOTAL FOR PART-3 EARTHING and TERMINATIONS				
5.0	PART-4 LT PANELS				
	1.The rates shall include 100mm painted MS channel frame/ cement foundation/suspending arrangement				
	2.Cost of all testing are deemed to be included in the rates				
5.1	MAIN LT PANEL (Loc: Basement Floor)				
	Design, manufacture, testing, installation, commissioning of Main L.T panel (MDB)				
	Incomer :-				
	One main incomer of 1250 4P EDO 50KA ACB and two 800A 4P EDO 50KA ACB				

Three (3) Incomer (1No. For EB Supply and 2No. For DG Supply)				
Two(2) 800A, 4pole,36kA,ACB with thermal release having adjustable over load and short circuit protection. The ACB and MCCB shall be preferably double breaking type with line load reversibility and suitable for positive isolation., the breaking capacity of MCCB shall be $I_{cs} = I_{cu}$. The ACB and MCCB shall be capable for total discrimination with upstream and down stream breakers.The MCCB shall be trip free feature with ON,OFF and TRIP indications, with 2C/O auxiliary contacts terminal shrouds sliding type front operation kit the trip unit shall be interchangeable.-(1 + 1 nos)				
The breaker should have an integrated short circuit release which gives protection against short circuit in case of failure of microprocessor release. The breaker should be tested at ERDA & offers should be accompanied by the test certificate of the same.				
ACB shall be of 440V, 50 HZ, 800/1250 A (as per actual requirement) with short time current rating of 50KA for 1 sec. Air Circuit Breaker shall conform to IS: 13947 part -2 of 1993 with latest amendments				
1250/5A, 10VA, C1 CTs for MDM - 1 No				
800/5A, 10VA, C1 CTs for MDM - 2 No				
1250/5A, 10VA, C1 CTs (for Ammeter) - 1 No				
800/5A, 10VA, C1 CTs (for Ammeter) - 2 No				
CBCT ELR - 3 set				
Three (3)- phase indicating lamps with MCBs. (LED type)-03 sets				
DG Sync relays, PLC based interlock, Transformer protection relays with 12 window annunciation panel.				
Bus Bar:				
1600A TPN+E insulated Alu. Bus bar: 50kA for 1 set each for EB & DG				
1250 Amps Bus coupler 1 No.				
Out goings :				
630 Amps TPN MCCB - 2 Nos				
400 Amps TPN MCCB - 3 No				
250 Amps TPN MCCB -2 Nos				
100 Amps TPN MCCB - 3 No				
Spare :				
630 Amps TPN MCCB - 1 Nos				
250 Amps TPN MCCB - 1 No				
400 Amps TPN MCCB - 1 Nos				

	DG synch. And PLC interlock				
	MS Cuical (Fabrication and powder coated				
		Supply	1	No.	
		Installation	1	No.	
5.2	SUB PANELS				
	Supply,Installation,Testing and commissioning of front operated indoor cubicle type free standing MV panel suitable for operating on 415V,three phase,4wire 50HZ AC supply system and to withstand a short circuit level of 35 kA rms symmetrical The panel shall be fabricated out of 14 SWG CRCA sheet steel with necessary anti-corrosive treatment and shall be dust and vermin proof construction suitable for installation on pedestal with the following facilities:-				
	a) Fire and corrosion resistant coating similar to VIPER FR-1101 applied in two coats with necessary primer.				
	b) Fire retardant DMC/SMC fillings for openings around bus bar near the sectional barriers.				
	c) Facilities in the terminals to have direct termination with aluminium cables.				
	d) Shall have high mechanical dielectric strength.				
	e) Door interlocking facility				
	f) Shall have fire barriers				
	g) Switch body shall be made of fire retardant materials.				
	h) Shall be painted with heavy coat of anti corrosive paint				
	i) Shall be mountable in any position in vertical plane for operation.				
	j) Shall be suitable for vertical expansion in future.steel parts of the panel shall be carried out through seven tank process.				
	l)After surface treatment panel shall be painted through powder coating process with two coats of Zinc chromate primer and two coats of paint				
	The panels shall consisting of the followings:-				
5.3	APFC PANEL				
	Supply , testing and commissioning of APFC panel with APP capacitors with Micro processor based relay, contactors, switchgears, protective devices, meters and panel housing complete as required.				
	Incoming Breaker :				

	630Amps 4P MCCB with O/L,S/C Release-1set				
	Phase indicating light protected by 6 amps MCB's. with CT's-3 Set				
	Breaker ON / OFF / TRIP indicating lights with control MCB's.-1 Set				
	96x96 sq.mm 0-500/ 5 amps digital ammeter with, 5 VA Class I CT's.-1 Set				
	96 x 96 mm sq. 0-500 Volt digital voltmeter with selector switch protected by 2 amp TP MCB's -1 Set				
	Power Factor Meter-1 Set				
	Power factor Correction Relay with all other accessories.-1 Set				
	Bus Bar:				
	630A TPN+E insulated Alu. Bus bar:				
	Outgoings :				
	50 KVAR BANK - 4 Nos				
	100A TP MCCB of 35kA with with O/L,S/C Release-4 Nos				
	50 KVAR Capacitor Duty Contactor for switching -4 sets				
	50 KVAR mixed dielectric extra low loss type Capacitor Bank with 7 % Detuned Reactor and ON / OFF push buttons, Indicating lamps for ON/OFF -2 Sets + 1Set Spare				
	25 KVAR BANK - 4 Nos				
	63A TP MCCB of 35kA with with O/L,S/C Release-4No				
	25 KVAR Capacitor Duty Contactor for switching -4 sets				
	25 KVAR mixed dielectric extra low loss type Capacitor Bank with 7 % Detuned Reactor and ON / OFF push buttons, Indicating lamps for ON/OFF -4 Sets				
	Supply (As per single line diagram)	1	No.		
	Installation	1	No.		
5.4	UTILITY PANEL (Loc: A Block Ground Floor electrical room)				
	The panel shall consisting of the followings:-				
	Incoming:				
	100A 4P MCCB with O/Land external E/f relay -1 Nos				
	Bus Bar:				
	200A TPN+E insulated Alu. Bus bar: 35kA for 1 sec.				
	Outgoing:				
	a). 63A TPN MCCB: 3Nos				
	b)25A TPN MCB: 1No				
	Spare:				
	a). 63A TPN MCCB: 1Nos				

	a). 25A TPN MCB: 1Nos				
	Metering:				
	CBCT ELR - 1 set				
	(0-500V) Digital Voltmeter with Phase selector switch - 1 set and 6A TPN MCB				
	(0-630A) Digital Ammeter with CTs and Phase selector switch - 1 set.				
	Dual Source Kilowatt hour from EB supply and DG supply				
	Multi data meter- 1No. With RS 485 port for monitoring				
	Phase indication lamps with fuse and control switches - 3 Nos.				
	Supply (As per single line diagram)	1	No.		
	Installation	1	No.		
5.5	A BLOCK PANEL (E.G. A BLOCK Ground Floor electrical room)				
	The panel shall consisting of the followings:-				
	Incoming:				
	100A 4P MCCB with O/Land external E/f relay -1 No				
	Bus Bar:				
	200A TPN+E insulated Alu. Bus bar: 35kA for 1 sec.				
	Outgoing:				
	a). 100A TPN MCCB: 3Nos				
	a). 63A TPN MCCB: 2Nos				
	Spare:				
	a). 63A TPN MCCB: 1Nos				
	a). 100A TPN MCCB: 1Nos				
	Metering:				
	CBCT ELR - 1 set				
	(0-500V) Digital Voltmeter with Phase selector switch - 1 set and 6A TPN MCB				
	(0-630A) Digital Ammeter with CTs and Phase selector switch - 1 set.				
	Dual Source Kilowatt hour from EB supply and DG supply				
	Phase indication lamps with fuse and control switches - 3 Nos.				
	MS cubical (fabrication and powder coating)				
	Supply (As per single line diagram)	1	No.		
	Installation	1	No.		

5.6	B BLOCK PANEL (Loc: B Block Ground Floor electrical room)				
	The panel shall consisting of the followings:-				
	Incoming:				
	250A 4P MCCB with O/Land external E/f relay -1Nos				
	Bus Bar:				
	300A TPN+E insulated Alu. Bus bar: 35kA for 1 sec.				
	Outgoing:				
	a). 125A TPN MCCB: 2Nos				
	b)100A TPN MCCB: 2No				
	C)63A TPN MCCB: 1No				
	Spare:				
	a). 63A TPN MCCB: 1Nos				
	Metering:				
	CBCT ELR - 1 set				
	(0-500V) Digital Voltmeter with Phase selector switch - 1 set and 6A TPN MCB				
	(0-630A) Digital Ammeter with CTs and Phase selector switch - 1 set.				
	Dual Source Kilowatt hour from EB supply and DG supply				
	Phase indication lamps with fuse and control switches - 3 Nos.				
	MS cubical (fabrication and powder coating)				
	Supply (As per single line diagram)	1	No.		
	Installation	1	No.		
5.7	C BLOCK PANEL (Loc: C Block Ground Floor electrical room)				
	The panel shall consisting of the followings:-				
	Incoming:				
	400A 4P MCCB with O/Land external E/f relay -1 Nos				
	Bus Bar:				
	400A TPN+E insulated Alu. Bus bar: 35kA for 1 sec.				
	Outgoing:				
	a). 200A TPN MCCB: 2Nos				
	b). 160A TPN MCCB: 1Nos				
	c)125A TPN MCCB: 1No				
	c)63A TPN MCCB: 1No				
	Spare:				
	a). 200A TPN MCCB: 1Nos				

	a). 63A TPN MCCB: 1Nos			
	Metering:			
	CBCT ELR - 1 set			
	(0-500V) Digital Voltmeter with Phase selector switch - 1 set and 6A TPN MCB			
	(0-400A) Digital Ammeter with CTs and Phase selector switch - 1 set.			
	Dual Source Kilowatt hour from EB supply and DG supply			
	Phase indication lamps with fuse and control switches - 3 Nos.			
	Supply (As per single line diagram)	1	No.	
	Installation	1	No.	
5.8	D BLOCK PANEL (Loc: D Block Ground Floor electrical room)			
	The panel shall consisting of the followings:-			
	Incoming:			
	400A 4P MCCB -1 No			
	Bus Bar:			
	400A TPN+E insulated Alu. Bus bar: 35kA for 1 sec.			
	Outgoing:			
	a). 250A TPN MCCB: 1Nos			
	b). 63A TPN MCCB: 2Nos			
	c). 40A TPN MCCB: 1Nos			
	Spare:			
	a). 250A TPN MCCB: 1Nos			
	a). 63A 4P MCB: 1Nos			
	Metering:			
	CBCT ELR - 1 set			
	(0-500V) Digital Voltmeter with Phase selector switch - 1 set and 6A TPN MCB			
	(0-630A) Digital Ammeter with CTs and Phase selector switch - 1 set.			
	Dual Source Kilowatt hour from EB supply and DG supply			
	Phase indication lamps with fuse and control switches - 3 Nos.			
	Supply (As per single line diagram)	1	No.	
	Installation	1	No.	

5.9	E BLOCK PANEL (Loc: E Block Ground Floor electrical room)				
	The panel shall consisting of the followings:-				
	Incoming:				
	100A 4P MCCB -1 Nos				
	Bus Bar:				
	200A TPN+E insulated Alu. Bus bar: 35kA for 1 sec.				
	Outgoing:				
	a). 100A TPN MCCB: 1No				
	b). 80A TPN MCCB: 1Nos				
	a). 63A TPN MCCB: 2Nos				
	Spare:				
	a). 63A 4P MCB: 1Nos				
	a). 80A 4P MCB: 1Nos				
	Metering:				
	CBCT ELR - 1 set				
	(0-500V) Digital Voltmeter with Phase selector switch - 1 set and 6A TPN MCB				
	(0-100A) Digital Ammeter with CTs and Phase selector switch - 1 set.				
	Dual Source Kilowatt hour from EB supply and DG supply				
	Phase indication lamps with fuse and control switches - 3 Nos.				
	MS cubical (fabrication and powder coating)				
	Supply (As per single line diagram)	1	No.		
	Installation	1	No.		
5	TOTAL FOR PART-4 LT PANELS				
6	PART- 5 LIGHTNING PROTECTION SYSTEM				
6.1	Lightning Air Terminations comprising Multiple point copper sphere, Arial rod of 1 meter length with Baseplate, provisions for mounting the baseplate, and termination of earthing strip to base-plate, all necessary hardware required,fastners etc complete.				
	Supply	10	Set		
	Installation	10	Set		

	Early streamer emission air terminal complete with central pickup rod, stainless steel housing & triggering device, diameter 105 mm & height 30mm conducting material copper.Coverage radius shall not be less than 60 Metres.Complete with surge counter.				
	Supply	RO	Set		
	Installation	RO	Set		
	Provision of Test Links (at a height of 1500 mm from ground level) made out of Galvanised Iron. Each conductor will be of sufficient length to extend 1/2 " beyond the test clamp. Contact surfaces shall be tinned.				
	Supply	10	Set		
	Installation	10	Set		
6	TOTAL FOR PART- 5 LIGHTNING PROTECTION SYSTEM				
7	PART- 7 SAFETY AND MISCELLANEOUS ITEMS				
	Heat/fire resistant coating				
	Supply and coating of Fire Resistant Compound of water based thermoplastic resin, Flame retardant chemicals and inorganic incombustible fibers for coating on the cables to withstand severe Fires and to prevent propagation along horizontally and vertically laid cables on wall or on cable trays under high temperature conditions. The compound shall be similar to " VIPER CABLEMASTIC FR-903 " complete as required and as directed by Engineer-in-charge. (To be coated on the cable for 1.5 mtr. length from end terminations and 1 Mtr length for every 10 mtr. Interval cable)	RO	Kgs		
7.1	Hume pipe				
a	Supply and laying of hume pipe with collars non-pressure type conforming to IS : 458 with latest amendments for road crossing including excavation and refilling of earth,drawing cables through the pipes as required.				
	300mm dia	400	Mtrs		
7.2	DANGER BOARDS :				
a	Supplying & fixing of 11KV danger boards with the word "DANGER" written in English & Kannada as per BESCO/LOCAL EB AUTHORITIES requirement.	10	Nos.		
7.3	YARD FENCING & JELLY SPREADING ETC.				
a	Providing 2200 mm high chain link fencing for HT & Transformer Yard	40	sqmtr.		

b	Providing gate, each of 1.50mm width (min) in two (side hung) leaves of 750 mm each to match the chain link fence including necessary hinges, locking arrangements, etc., complete.	2	Each		
c	Supplying and spreading 40mm nominal size stone aggregate as directed (voids not considered for measurement)	40	cum		
7.4 SAFETY ITEMS					
a	Rubber mats, 1M wide and 10 mm thick, 1100V grade	35	RM		
b	Fire Extinguishers, ELECTRICAL DUTY 4.5Kg ABC Powder	25	Nos.		
c	Danger Boards on subpanels, In English, HINDI & LOCAL LANGUAGE.	15	Nos.		
d	Artificial Respiration Charts-In English, HINDI & LOCAL LANGUAGE	2	Nos.		
e	11kV Tested hand Gloves	2	Pair		
f	First Aid Kit as per RedCross Standards, complete with Medicines for Burns, Cuts vomiting , swelling , Cotton Wool , Cotton bandages ,Surgical sprit etc . placed in a wall-mounting box with 6 mm thick front hingedGlass cover, with the sign + and the inscription FIRST AID in Red paint - overall size not less than 450mm x 300mm x 200mm deep in two tier shelf patern	2	Set		
g	Cable route marker as required	60	Nos.		
7.5	Supply, fabrication & installation of Steel supports including primer & black enamel painting. (For Transformer pedestal rail, external HT panel pedestal supports)	####	KG		
TOTAL FOR PART- 7 SAFETY AND MISSCELLANEOUS ITEMS					
8 PART- 8 LIASOINING WORK AND UPS SYSTEM					
LIAISONING CHARGES FOR APPROVALS					

	Follow-up and liasioning charges for permission for Road-Cutting, Corporation Clearances, CEIG's Drawing Approvals, ESCOM's Drawing approvals, Inspection, power sanctioning, all other Statutory approvals and related follow-up works, testing, charging the substation etc, all required Approvals by ESCOM / Other Govt & Statutory Authorities like CEIG, ESCOM, Dept Of Telecom, Police Etc, Complete in all respects. (For ENTIRE HT & LT including DG approval Works-TOTAL INSTALLATION)	1	LS		
	TOTAL FOR PART- 8 LIASOINING WORK				
	TOTAL FOR ELECTRICAL WORKS				
	MAIN SECTION-2				
	<u>DG- BOQ</u>				
	DG-SET and ACCESSORIES				
	Supply & Installation of 2No. Of 500KVA,415V,50HZ 3phase 4 wire diesel generator set				
1	Supply, Installation, TEsting & Commissioning of DG Set. Diesel engine shall be complete with necessary controls and safety devices conforming to relevent ISS/BSS with latest amendments.Diesel Engine shall be suitable for continuous operation of generator set duty inclusive of fly wheel flexible coupling air cleaner corrosion resistor radiator fan with guard fuel pump fuel filter Eectronic governor,electrical starting system with starter 24V battery,voltage regulator,instrument panel ,with RPM indicator,exhaust silencer,protections against low lubrication oil pressure,high water temperature.Alternator shall be 415V 3 phase 50HZ 4 wire 0.8 power factor self excited self regulated brushless type drip proof conforming to IS 4722 with latest amendments and voltage regulation of +1or-1%,with class H insulation and with IP23 standard enclosure and with suitable adopter box.The engine and alternator shall be coupled over a sturdy common base frame.Day fuel tank (990 Ltrs) with necessary fuel hoses to the engine and fist filling of deisel and lub oils and as per detailed specifications as required and with a AMF Panel with necessary breaker / relay / contactor/ indicator and metering as supplied by the supplier as per standards with necessary fixing arrangement. The entire set shall be enclosed in a accoustique enclosure with necessary relay/ breakers and as full set of work as approved by client / consultants.				

	The entire set shall be tested at factory for full load conditions and tested at site with load after installation				
	500 kVA DG Set				
	Supply	2	Set		
	Installation	2	Set		
2	D.G Exhaust pipe				
a	Supply and installation of exhaust pipe of suitable size for exhausting the smoke up to a height of about 4meters above Terrace level including supply of required size pipe with suitable supports and clading with 50mm thick glass wool with chicken mesh and ALUMINIUM sheet rapping including supply of all materials required complete as required and as directed by Engineer in charge and as per standards.				
	MS pipe for 500kVA DG Set as per standards				
	Supply	70	Mtrs.		
	Installation	70	Mtrs.		
b	Supply and laying 25mm dia medium class ms pipe inclusive of all fittings required for fuel line from fuel tank to both the generators				
	Supply	RO	Mtrs.		
	Installation	RO	Mtrs.		
3	Safety equipments required as per standard	1	Set		
4	Liasoining with CEIG ,PCB & necessary authorities and obtaining relevant approvals for the entire DG installation consisting of the above.	1	LS		
	TOTAL TO SUMMARY				
	MAIN SECTION-3				
	<u>UPS-BOQ</u>				
1	Supply & installation of 10 KVA UPS , with IGBT technology, < 10 % THD, input Three - Phase (415 V + / - 10%) and output Three Phase (415 V + 10 %) with incoming and outgoing isolation, sealed maintenance free batteries suitable for 30 minutes back-up , complete with provision of suitable size of 14 gauge MS battery rack, suitably painted as complete as required and approved by the consultant.				

		Supply	9	Set		
		Installation	9	Set		
2	Supply & installation of 15 KVA UPS , with IGBT technology, < 10 % THD, input Three - Phase (415 V + / - 10%) and output Three Phase (415 V + 10 %) with incoming and outgoing isolation, sealed maintenance free batteries suitable for 30 minutes back-up , complete with provision of suitable size of 14 gauge MS battery rack, suitably painted as complete as required and approved by the consultant.					
		Supply	1	Set		
		Installation	1	Set		
3	Supply & installation of 20 KVA UPS , with IGBT technology, < 10 % THD, input Three - Phase (415 V + / - 10%) and output Three Phase (415 V + 10 %) with incoming and outgoing isolation, sealed maintenance free batteries suitable for 30 minutes back-up , complete with provision of suitable size of 14 gauge MS battery rack, suitably painted as complete as required and approved by the consultant.					
		Supply	1	Set		
		Installation	1	Set		
4	Supply & installation of 30 KVA UPS , with IGBT technology, < 10 % THD, input Three - Phase (415 V + / - 10%) and output Three Phase (415 V + 10 %) with incoming and outgoing isolation, sealed maintenance free batteries suitable for 30 minutes back-up , complete with provision of suitable size of 14 gauge MS battery rack, suitably painted as complete as required and approved by the consultant.					
		Supply	1	Set		
		Installation	1	Set		
5	Supply & installation of 40 KVA UPS , with IGBT technology, < 10 % THD, input Three - Phase (415 V + / - 10%) and output Three Phase (415 V + 10 %) with incoming and outgoing isolation, sealed maintenance free batteries suitable for 30 minutes back-up , complete with provision of suitable size of 14 gauge MS battery rack, suitably painted as complete as required and approved by the consultant.					
		Supply	2	Set		
		Installation	2	Set		

6	Supply & installation of 50 KVA UPS , with IGBT technology, < 10 % THD, input Three - Phase (415 V + / - 10%) and output Three Phase (415 V + 10 %) with incoming and outgoing isolation, sealed maintenance free batteries suitable for 30 minutes back-up , complete with provision of suitable size of 14 gauge MS battery rack, suitably painted as complete as required and approved by the consultant.				
	Supply	2	Set		
	Installation	2	Set		
7	Supply & installation of 60 KVA UPS , with IGBT technology, < 10 % THD, input Three - Phase (415 V + / - 10%) and output Three Phase (415 V + 10 %) with incoming and outgoing isolation, sealed maintenance free batteries suitable for 30 minutes back-up , complete with provision of suitable size of 14 gauge MS battery rack, suitably painted as complete as required and approved by the consultant.				
	Supply	1	Set		
	Installation	1	Set		
	TOTAL TO SUMMARY				
	MAIN SECTION-4				
	SOLAR BOQ				
1.0	PV system				
	Supply and installation 70 Kw Peak Solar Power Plant of PV system with Solar Module, inverter Disconnecter switches ,junction box,breakers,Cables and other accessories.				
	Supply	1	Set		
	Installation	1	Set		
	TOTAL TO SUMMARY				