



SECTION X (A) - Group A - SCHEDULE OF RATES/SOR

Group A - EPC PACKAGE FOR DESIGN, ENGINEERING, SUPPLY, CONSTRUCTION, TESTING & COMMISSIONING OF POOLING SUBSTATION AND ASSOCIATED POWER EVACUATION SYSTEM FOR 300 MW (220kV ISTS) SOLAR PROJECT IN THE VICINITY OF MORENA PS, DISTRICT SHEOPUR, MADHYA PRADESH, INCLUDING 5 YEARS OF COMPREHENSIVE OPERATION AND MAINTENANCE

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SCHEDULE OF RATES

NAME OF WORK: DESIGN, ENGINEERING, SUPPLY, CONSTRUCTION, TESTING & COMMISSIONING OF POOLING SUBSTATION AND ASSOCIATED POWER EVACUATION SYSTEM FOR 300 MW (220KV ISTS) SOLAR PROJECT IN THE VICINITY OF MORENA PS, DISTRICT SHEOPUR, MADHYA PRADESH, INCLUDING 5 YEARS OF COMPREHENSIVE OPERATION & MAINTENANCE

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
A	SECTION 1: SERVICE ITEMS					
1.0	<p>Electrical design charges for 220/ 33kV switchyard & 220 kV transmission line.</p> <p>The scope shall include preparation of complete electrical design and detailed engineering using standard industry software such as ETAP, DigSILENT or equivalent. The work shall broadly cover and include the following:</p> <p>i.System studies and design using recognized power system analysis software such as ETAP, DigSILENT or equivalent. The studies includes Short circuit study, load flow study, Reactive power compensation, etc or any other such studies required by Regulatory / Govt agencies.</p> <p>ii.Preparation and submission of Single Line Diagrams (SLD) and switchyard layouts such as Lightning, earthing, Erection key diagram (EKD), Lighting, Cable tray, etc.</p> <p>iii.Preparation of design calculations, including but not limited to lighting calculations, Direct Stroke Lightning Protection (DSLPL), grid earthing design, busbar sizing, CT / PT sizing, main and auxilliary protection scheme including redundancy, Cable sizing/ Schedule, Voltage loss calculations, Protection coordination study and relay setting calculations, shall be provided for the entire CRP, MV, and LT systems, interface requirements between 33 kV & 220 kV systems etc complete in all respects as per system performance and regulatory requirements.</p> <p>iv.Preparation of plan and sectional, fabrication, construction, execution drawings of the switchyard and associated facilities. Preparation of General Arrangement (GA), construction drawings of equipment in the control room and associated panels, cable schedules for owners approval in complete as required for engineering and execution.</p> <p>v. Preparation of any other design, drawing, calculations, documents incidental to the design and detailed engineering of the entire system meeting technical, performance requirements as per Owner, concerned Regulatory / Govt agencies. The item also includes incorporation of comments/ observations, modifications as advised by Owner or Owner's PMC/ concerned Regulatory / Govt agencies so as to obtain necessary execution/ commissioing approvals/ clearances.</p>	EA	1.00	60,21,987.19	18%	71,05,944.89

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2.0	<p>Civil & Structure design charges for 220/33kV switchyard and 220 kV Transmission Line.</p> <p>The scope shall include complete civil and structural design and detailed engineering for the 220/33 kV switchyard and 220 kV EHV transmission line, using standard structural analysis software such as STAAD or equivalent. The work shall broadly cover and include the following:</p> <p>i. Structural analysis and design using recognised software such as STAAD or equivalent for all civil and structural components, elements, buildings etc of the switchyard and transmission line structures.</p> <p>ii. Preparation of plan, elevation and sectional, construction, execution drawings for all civil structures including equipment foundations, control room building, switchyard structures and other associated facilities.</p> <p>iii. Carrying out geotechnical investigations/ soil bearing capacity test as per relevant IS standards (as applicable), preparation and submission of geotechnical/ soil investigation reports along with foundation recommendations for all types of structures/ equipment/ buildings, for approval.</p> <p>iv. Preparation of contour survey/contour layout of the land at appropriate grid intervals using Total Station including establishing permanent/ temporary benchmarks, site specific features up to 50 m beyond the project boundary in all directions.</p> <p>v. Detailed design, engineering and drawings for switchyard civil works, including but not limited to foundations for equipment and structures, gantries, lightning masts, transformer foundations, control room building, equipment sheds, cable trenches, baffle walls, internal roads, pathways, drainage systems, fencing, gates and other associated civil infrastructure etc complete in all respects as per project & system performance requirements.</p> <p>vi. Transmission line civil and structural design, including tower foundation design for various soil conditions, stub setting templates, retaining structures where required, foundation drawings for all tower types and extensions, and preparation of foundation schedules and construction drawings for the transmission line for owners approval.</p> <p>vii. Preparation of any other design, drawing, calculations, documents incidental to the design and detailed engineering of the entire civil works meeting technical/ performance requirements as per Owner, concerned Regulatory / Govt agencies. The item also includes incorporation of comments/ observations, modifications as advised by Owner or Owner's PMC/ concerned Regulatory / Govt agencies so as to obtain necessary execution/ commissioning approvals/ clearances.</p>	EA	1.00	25,80,851.65	18%	30,45,404.95

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
3.0	<p>Liaison charges for Statutory Approvals for 220 kV EHV Transmission Line and Substation.</p> <p>The scope includes charges and expenses towards providing timely liaisoning and coordination for obtaining all statutory permissions, approvals and clearances required for installation, testing, commissioning and energisation of the 220 kV EHV transmission line and associated switchyard/ substation works from concerned authorities such as Central Transmission Utility of India Limited, Central Electricity Authority / Chief Electrical Inspector (CEI), and other Government or Public Sector agencies.</p> <p>The scope shall also cover obtaining timely & necessary approvals such as CEI energisation approval, CTUIL charging approval, metering and protection scheme approvals, etc., along with coordination with all concerned authorities to facilitate successful commissioning and evacuation of power including all incidental, sundry expenses.</p> <p><i>Note: All statutory fees and charges payable to Government / statutory authorities shall be paid by the Contractor and shall be reimbursed by the Owner at actuals against submission of documentary proof .</i></p>	EA	1.00	12,90,425.83	18%	15,22,702.48
4.0	Detailed survey including tower spotting and tower profiles with GPS, Total station, Digital theodolite etc. along the approved alignment, preparation of profiles, tower spotting, tower schedules and soil resistivity, marking of route on topo sheet and village map, collection of khasra/khatauni records of corridor, identification of forest/ hatching to minimize the forest etc., and submission of .kml/ .kmz files or such other formats as required by the Owner, Statutory/ Govt/ Regulatory agencies including incorporation of observations, corrections etc complete in all respects & as per the direction of Engineer incharge.	km	8.00	21,533.38	18%	2,03,275.11
5.0	Check survey to carry out the checks as per approved profiles including revision of profiles (if required) with Digital Theodolite/total station/GPS etc. and location marking by fixing appropriate number of pegs in alignment for suspension tower and in bisection for angle tower including bush cutting along the centre line of alignment and repeg marking if necessary etc. complete in all respects. The details of such profiles should be submitted for approval of Engineer-In-Charge, the decision of whom shall be binding on the contractor.	km	8.00	9,104.72	18%	85,948.56
6.0	Excavation of trial pits of standard dimension of 1m x 1m width up to 3m depth at every 1 km interval or where ever required as per change in topography and taking observation of soil strata for classification of foundation and backfilling the trial pits. The details of such pits along with methodology of arriving at the quantity should be submitted for approval of Engineer-In-Charge, the decision of whom shall be binding on the contractor.	per pit	8.00	5,959.00	18%	56,252.96
7.0	Preparation of PTCC (Power & Telecommunication Coordination Committee) proposals including relevant information in prescribed formats and on route map based on toposheets of survey of India as per PTCC guidelines in desired numbers (including route map in 27 sets) along with necessary data to obtain the PTCC clearance. The scope includes charges and expenses towards providing timely liaisoning and coordination for obtaining permissions, approvals and clearances & shall also cover all incidental, sundry expenses.	EA	1.00	13,530.00	18%	15,965.40

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	SUBTOTAL (A) INCLUDING GST					1,20,35,494.34
B	SECTION 2: COMPOSITE ITEMS Common Note to all items: (i) All materials shall be approved technical specifications/ datasheets / recommended makes enclosed in the Technical Specifications and/ or as approved by the Engineer-In-Charge (EIC). The decision of EIC shall be final and binding on the contractor. (ii) Conducting inspection through the Third Party Inspection (TPI) agency including necessary coordination/ re-inspection in case of failure is in the scope of the items (as applicable). QAPs shall be reviewed and approved by Engineer In Charge/ Owner's PMC. (iii) All items shall be with required materials, machinery, equipment, tools & tackles, labour etc including all leads, lifts as per site conditions & as per the direction of Engineer incharge. (iv) Pre-commissioning checks and testing as per relevant IS/IEC standards prior to commissioning. (v) Preparation and submission of drawings/documents for approval at appropriate stage. (vi) Preparation and submission of as-built drawings, test reports and handing over documents to the Owner.					
1.0	Supply Installation Testing Commissioning (SITC) of Transmission line towers					
1.1	Complete fabrication, hot-dip galvanization, supply, transportation, erection, testing and commissioning of transmission line towers of all types and configurations made of mild steel/ high tensile steel as per relevant IS code, approved design with required extensions, supply and fixing of Bolts/ Studs & Nuts or fasteners with spring washers, stubs, Superstructure, templates, step bolts, U bolts, D Shackles, Chain links etc, including tree cutting, clearing & gradings, Stub setting in all type of soils with the help of template/ PROP including transportation as required to the desired location as per approved design & drawings. Item also includes supply and fixing of Tower accessories such as Danger board, Number plate, phase plates, Circuit plate, Anticlimbing devices with Barbed wire, Bird guard, Earth Bonds and Bird flight diverters (if required) as per Technical Specification & requirement, complete in all respects with required materials, equipment, tools & tackles, labour etc.	MT	300.00	1,44,455.21	18%	5,11,37,144.91
1.2	Electric tack welding (half round welding) to GI Nuts & Bolts of each tower from thread ends (Two spots to be welded to each Nut & Bolts near thread end) and painting the welded portion with two coats of Zinc rich paint in all sections of each tower, complete in all respects with required materials, machinery, equipments, tools & tackles, labours, etc .	Per Tower	30.00	6,358.85	18%	2,25,103.29
1.3	Complete Fabrication, galvanising, supply, transportation, erection testing and commissioning of Steel Pole Structure (Monopole) as per relevant IS code, of all types and configurations as per approved design including cross arms, base plate with anchor bolts, anticlimbing device, step bolts and bolt & nuts/ladder, etc as per technical specification, complete in all respects with required machinery, materials, equipments, tools & tackles, labours, etc.	MT	40.00	2,53,495.00	18%	1,19,64,964.00

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
2.0	SITC of AL 59 Moose S/C conductor on all types of tower					
2.1	Complete Supply, transportation, Stringing, testing and commissioning of 03 conductors for Single circuit (all 3 phases) on all types of towers including AL59 Moose conductor, conductor accessories, insulators, hardwares and required material to site locations, laying, paving, jointing, termination at both ends, rough sagging, final sagging, clipping, fixing of accessories, hoisting of insulators, jumpering etc. on tower complete in all respect including tree cutting if required as per the direction of Engineer incharge.(which includes the works involved in the crossing of LT,HT,.viz dismantling and restringing of conductors), complete in all respects with required machinery, materials, equipments, tools & tackles, labours, etc .	km	7.40	18,08,427.85	18%	1,57,91,191.94
2.2	Complete Supply, transportation, Stringing, testing and commissioning of 03 conductors for Single circuit (all 3 phases) for crossing of EHV Power Lines, Railway, National Highway and River/Creek on all types of towers including f AL59 Moose conductor, conductor accessories, insulators, hardwares and required materials to site locations, laying, paving, jointing, termination at both ends, rough sagging, final sagging, clipping, fixing of accessories, hoisting of insulators, jumpering etc. on tower complete in all respect including tree cutting, works involved in the crossing of LT,HT,.viz dismantling and restringing of conductors if required as per the direction of Engineer incharge, complete in all respects with required machinery, materials, equipments, tools & tackles, labours, etc .	km	1.00	18,83,550.16	18%	22,22,589.18
3.0	SITC of Earth wire and its accessories					
3.1	Complete supply, transportation, stringing testing and commissioning of 7/3.15 mm G.I. Earthwire including required material such as suspension clamp, Tension clamp, midspan Joint, etc to site locations, laying, fixing hardware, fixing accessories, paving out earth wire, jointing, tensioning, stringing and clamping etc. as per the direction of Engineer incharge, complete in all respects with required materials, machinery, equipments, tools & tackles, labours, etc.	km	8.40	91,420.18	18%	9,06,156.84

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
4.0	SITC of Tower Earthing					
4.1	Grounding of towers with pipe type earthing including excavation, back filling, supply of all materials like 25 mm Dia 3 m long galvanised Pipe (Medium class/ Class B) & 50 x 6 mm G.I. flat with, bolt-nuts, salt, coal/charcoal etc. as per specifications and approved drawing, complete in all respect with required materials, equipments, tools & tackles, labours, etc.	EA	120.00	7,186.20	18%	10,17,565.92
4.2	Earthing of towers with Counter Poise type earthing Including excavation of pits/ trenches, laying of earth wire and fitting plates/ lugs to tower legs including supply of all materials (Viz. GI wire, lugs, nuts and bolts etc) and back filling as per specification and approved drawing, complete in all respect with required materials, equipments, tools & tackles, labours, etc.	EA	30.00	16,056.09	18%	5,68,385.59
5.0	SITC of FOTE (Fiber Optic Terminal Equipment) System					
5.1	Complete supply installation testing and commissioning of FOTE panel including i. SDH Base Equipment with STM-16 & its related accessories ii. PDH equipment & its related accessories iii. Networking equipment and VOIP phone iv. Amplifier/Booster if required v. NMS with Hardware & accessories including license OS with PC vi. Including configuration, testing & commissioning as per specification, complete in all respects with required materials, equipments, tools & tackles, labours, etc.	EA	1.00	35,37,509.00	18%	41,74,260.62
5.2	Complete supply, transportation and Stringing of 48 Core optical Fiber ground Wire (OPGW) along with all hardware & Accessories including joint box, vibration damper, down lead clamps, etc., and termination / splicing as required of a fibre optic approach cable at both the sub-station ends as per technical specification, complete in all respects with required materials, equipments, tools & tackles, labours, etc.	KM	8.40	3,08,104.42	18%	30,53,931.01

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
6.0	SITC of 220kV OUTDOOR C.T. UNIT Supply, installation, testing and commissioning of 220kV, 50Hz, outdoor, single phase, Live tank type, Porcelain insulated, oil cooled, nitrogen topped, hermetically sealed current transformer along with bimetallic terminal connectors conforming to relevant IS/IEC standards, complete with all materials, labour and accessories as per approved drawings/specifications. The scope of work shall include the following: i. Supply of complete Current Transformer along with all accessories, fittings, JB's and mounting hardware as per specification including Packing, transportation and delivery of equipment at project site. ii. Routine and acceptance testing at manufacturer's works as per approved Quality Assurance Plan (QAP), including inspection by the Owner/Consultant prior to dispatch. iii. Complete installation and assembly including interconnections and termination. iv. Earthing of CT body, structure, etc as per approved earthing scheme.					
6.1	220kV Tariff CT with Porcelain Insulation, 50kA for 1S Core:1- 600-1200/1A, CL: 0.2s Core:2- 600-1200/1A, CL: 0.2s	EA	3.00	4,82,448.36	18%	17,07,867.19
6.2	220kV Line CT with Porcelain Insulation, 50kA for 1s Core:1- 600-1200/1A, CL:PS, Spare Core:2- 600-1200/1A, CL:PS Core:3- 600-1200/1A, CL: 0.2s Core:4- 600-1200/1A, CL:PS Core:5- 600-1200/1A, CL:PS	EA	3.00	4,82,448.36	18%	17,07,867.19
6.3	220kV Bus coupler CT with Porcelain Insulation, 50kA for 1s Core:1- 600-1200/1A, CL:PS, Spare. Core:2- 600-1200/1A, CL:PS Core:3- 600-1200/1A, CL: 0.2s Core:4- 600-1200/1A, CL:PS Core:5- 600-1200/1A, CL:PS	EA	3.00	4,82,448.36	18%	17,07,867.19
6.4	220kV Transformer CT with Porcelain Insulation, 50kA for 1s Core:1- 600-1200/1A, CL:PS Core:2- 600-1200/1A, CL:PS Core:3- 600-1200/1A, CL: 0.2s Core:4- 600-1200/1A, CL:PS Core:5- 600-1200/1A, CL:PS, Spare	EA	6.00	4,82,448.36	18%	34,15,734.39

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
7.0	SITC of 220kV OUTDOOR CVT					
	<p>Supply, installation, testing and commissioning of 220kV, 50Hz, outdoor, single phase, capacitor type Voltage Transformer (CVT), Live tank type, Porcelain insulated, oil cooled, nitrogen topped, hermetically sealed Potential transformer along with bimetallic terminal connectors, conforming to relevant IS/IEC standards and approved drawings/specifications complete with all materials, labour and accessories. The scope of work shall include the following:</p> <p>i. Supply of complete CVT along with capacitor stack, electromagnetic unit, tuning reactor, intermediate transformer, junction boxes and all accessories, fittings and mounting hardware as per specification including Packing, transportation and delivery of equipment at project site.</p> <p>ii. Routine and acceptance testing at manufacturer's works as per approved Quality Assurance Plan (QAP), including inspection by the Owner/Consultant prior to dispatch.</p> <p>iii. Complete installation and assembly including interconnections and termination.</p> <p>iv. Earthing of CVT base, structure as per approved earthing scheme.</p>					
7.1	<p>220kV Tarrif CVT with Porcelain Insulation, 50kA for 1S and core burden shall not exceed 50VA for protection</p> <p>Core:1 - (220000/√3) / (110/√3), CL: 0.2</p> <p>Core:2 - (220000/√3) / (110/√3), CL: 0.2</p>	EA	3.00	2,14,020.65	18%	7,57,633.10
7.2	<p>220kV Bus CVT</p> <p>(220000/√3) / (110/√3) , Core:1 - CL:0.2</p> <p>(220000/√3) / (110/√3) , Core:2 - CL:3P</p> <p>(220000/√3) / (110/√3) , Core:3 - CL:3P</p>	EA	6.00	2,14,020.65	18%	15,15,266.20
7.3	<p>220kV, Line CVT</p> <p>(220000/√3) / (110/√3) , Core:1 - CL:0.2</p> <p>(220000/√3) / (110/√3) , Core:2 - CL:3P</p> <p>(220000/√3) / (110/√3) , Core:3 - CL:3P</p>	EA	3.00	2,14,020.65	18%	7,57,633.10

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8.0	SITC of 220kV OUTDOOR ISOLATOR					
	Supply, installation, testing and commissioning of 3φ, Porcelain insulator, Mechanically ganged, Double Break (center break) Standard / TANDEM, with M.S.cubicle for auxiliary contacts and motor, conforming to relevant IS/IEC standards and approved drawings/specifications, complete with all materials, labour and accessories. The scope of work shall include the following: i. Supply of complete off load Isolator set as per approved design along with all accessories, fittings and mounting hardware as per specification including Packing, transportation and delivery of equipment at project site. ii. Routine and acceptance testing at manufacturer's works as per approved Quality Assurance Plan (QAP), including inspection by the Owner/Consultant prior to dispatch. iii. Complete installation and assembly including interconnections and termination. iv. Earthing of Isolator at appropriate locations as per approved scheme/ design.					
8.1	245kV, 1250A, 50kA for 1s, 3Φ, Motor operated Horizontal Double Break standard Isolator with Motorised Single Earth Switch with Porcelain insulator as per specifications	EA	4.00	3,18,358.00	18%	15,02,649.76
8.2	245kV, 1250A, 50kA for 1s, 3Φ, Motor operated Horizontal Double Break standard Isolator without Earth Switch with Porcelain insulator as per specifications	EA	3.00	2,67,233.00	18%	9,46,004.82
8.3	245kV, 1250A, 50kA for 1s, 3Φ, Motor operated Horizontal Double Break standard Isolator with Motorised Double Earth Switch with Porcelain insulator as per specifications	EA	3.00	3,18,358.00	18%	11,26,987.32
8.4	245kV, 1250A, 50kA for 1s, 3Φ, Motor operated TANDEM Isolator Without Earth Switch with Porcelain insulator as per specifications	EA	3.00	2,67,233.00	18%	9,46,004.82

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	SITC of 220kV OUTDOOR SF6 CB.					
9.0	Supply, installation, testing and commissioning of outdoor SF6 Circuit breaker conforming to relevant IS/IEC standards and approved drawings/specifications, complete with all materials, labour and accessories. The scope of work shall include the following: i. Supply of complete Circuit breaker set along with all accessories, fittings and mounting hardware as per specification including Packing, transportation and delivery of equipment at project site. ii. Routine and acceptance testing at manufacturer's works as per approved Quality Assurance Plan (QAP), including inspection by the Owner/Consultant prior to dispatch. iii. Complete installation and assembly including interconnections and termination. iv. Earthing of SF6 breaker at appropriate locations as approved scheme/ drawings.					
9.1	Supply, installation, testing and commissioning of 245kV, 50kA for 1s, 1250A, 3Φ, 50Hz., outdoor type, with Porcelain insulator, Gang operated motorised SF6 circuit breaker with local M.S. control cubicle, steel structure for circuit breaker mounting, ladder, bi-metallic connectors and accessories suitable for mounting on steel structure, conforming to relevant IS/IEC standards and approved drawings/specifications.	EA	4.00	17,85,740.00	18%	84,28,692.80
	SITC of 198kV LIGHTNING ARRESTOR					
10.0	Supply, installation, testing and commissioning of 198kV LA conforming to relevant IS/IEC standards and approved drawings/specifications, complete with all materials, labour and accessories. The scope of work shall include the following: i. Supply of Lightning arrestor/Post insulator/EHV cable terminator along with all accessories, fittings and mounting hardware as per specification including Packing, transportation and delivery of equipment at project site. ii. Routine and acceptance testing at manufacturer's works as per approved Quality Assurance Plan (QAP), including inspection by the Owner/Consultant prior to dispatch. iii. Complete installation and assembly including interconnections and termination. iv. Earthing of equipment neutral & body as per approved scheme/ drawing.					
10.1	Supply, installation, testing and commissioning of 198kV, 10kA, Class-III, single phase, gapless type, Porcelain lightning arrestor with bi-metallic terminals connectors, surge monitor, grading ring etc.	EA	9.00	77,089.41	18%	8,18,689.53
10.2	Supply, installation, testing and commissioning of 220kV class Post Insulator, 6kN or 8kN as per approved design	EA	9.00	29,079.30	18%	3,08,822.17

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	SITC of Conductors, Hardware and Insulators					
11.0	Supply, installation, testing and commissioning of required conductors, hardware and insulators conforming to relevant IS/IEC standards and approved drawings/specifications, complete with all materials, labour and accessories. The scope of work shall include the following: i. Supply of Conductors, Hardware and Insulators along with all accessories, fittings and mounting hardware as per specification including Packing, transportation and delivery of equipment at project site. ii. Routine and acceptance testing at manufacturer's works as per approved Quality Assurance Plan (QAP), including inspection by the Owner/Consultant prior to dispatch. iii. Complete installation and assembly including interconnections and termination. iv. Earthing of equipment at appropriate locations as approved scheme/ drawings.					
11.1	CONDUCTOR					
11.1.1	Supply, installation, testing and commissioning of AL-59 (Moose) Conductor & IPS tubes and other accessories	LOT	1.00	58,49,930.42	18%	69,02,917.89
11.1.2	Supply, installation, testing and commissioning of G.I. shield wire (7/3.15) with mounting & tension clamps.	LOT	1.00	1,76,358.19	18%	2,08,102.67
11.2	HARDWARE					
11.2.1	Supply, installation, testing and commissioning of Clamps & connectors (incl. spacer, T etc. complete) for connection of various equipment to AL-59 Moose conductor, IPS tubes for Bays.	LOT	1.00	66,24,185.92	18%	78,16,539.38
11.3	INSULATOR					
11.3.1	Supply, installation, testing and commissioning of 220kV 120kN Insulator Tension String-Single disc Porcelain type including all required accessories, hardware, turnbuckle, ball link, yoke plate, arcing horn etc.	EA	69.00	5,161.70	18%	4,20,265.88
11.3.2	Supply, installation, testing and commissioning of 220kV 90kN Insulator Suspension String-Single disc Porcelain type including all required accessories, hardware, turnbuckle, ball link, yoke plate, arcing horn etc.	EA	51.00	946.31	18%	56,949.07

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	SITC of RELAY & CONTROL PANELS					
12.0	<p>Supply, installation, assembling, connection, testing and commissioning of CRPs, including redundancy, conforming to relevant IS/IEC standards and approved SLD/drawings/specifications, complete with all materials, labour and accessories. The scope of work shall include the following:</p> <p>i. Supply of panels along with accessories as per specification including Packing, transportation and delivery of equipment at project site.</p> <p>ii. Routine and acceptance testing at manufacturer's works as per approved Quality Assurance Plan (QAP), including inspection by the Owner/Consultant prior to dispatch.</p> <p>iii. Complete installation and assembly including interconnections and termination.</p> <p>iv. Earthing all components, frame etc. to a common internal earth bar.</p> <p>v. Touching of body with powder coating for damaged parts. All the nuts bolts & joints exposed to the air shall be covered with suitable anti - oxidant material or as directed by the Engineer incharge.</p> <p>vi. Checking of Internal connection & wiring, operation of switches, MCCB, MCB etc..</p> <p>vii. Supply of necessary tools, hardware, testing hardware, testing equipment during testing at site.</p> <p>Note: Supply & fixing of MS channels/ structurals / RCC foundation (if any) for mounting the panel shall be paid under respective items under civil works and as per the instruction of Engineer Incharge. All other items/ materials forming part of the job is deemed to be included in the scope, rates.</p>					
12.1	Supply, installation, testing and commissioning of 220kV Line Bay CRP shall be provided as per technical specifications	EA	1.00	23,22,685.93	18%	27,40,769.40
12.2	Supply, installation, testing and commissioning of 220kV Transformer Bay CRP shall be provided as per technical specifications	EA	2.00	17,52,876.97	18%	41,36,789.65
12.3	Supply, installation, testing and commissioning of 220kV Bus Coupler CRP shall be provided as per technical specifications	EA	1.00	9,82,968.73	18%	11,59,903.10
12.4	Supply, installation, testing and commissioning of 220kV Decentralized Busbar protection CRP with inbuilt LBB for all bays shall be provided as per technical specifications	EA	1.00	37,30,608.55	18%	44,02,118.09

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
	SITC of 33kV SWITCHGEAR PANEL					
13.0	<p>Supply, Installation, testing and commissioning of outdoor (IP55), extensible type, draw out type 33kV VCB panel set with CT of appropriate rating for metering and protection as per approved Single Line Diagram, complete with all materials, labour and accessories. The Scope of work shall include the following:</p> <p>i. Supply of panels along with accessories as per specification/approved drawing including Packing, transportation and delivery of equipment at project site.</p> <p>ii. 'Complete installation and assembly including interconnections and termination including Earthing all components, frame etc. to a common internal earth bar.</p> <p>iii. Touching of body with powder coating for damaged parts. All the nuts bolts & joints exposed to the air shall be covered with suitable anti - oxidant material or as directed by the Engineer incharge.</p> <p>iv. Supply and fixing all accessories and supporting structure.</p> <p>v. Testing of panel as per relevant IS/IEC as applicable at Manufacturer's Factory as per approved Quality Assurance Plan (QAP), including inspection by the Owner/Consultant prior to dispatch.</p> <p>vi. Checking of operation, wiring of breaker, trip mechanism, no. of operation on power pack etc. before commissioning.</p> <p>vii. Testing of breaker including testing of tripping mechanism, setting of all relays including providing necessary redundancy etc.</p> <p>viii. Conducting hi-pot test on each panel as per specifications.</p> <p>ix. System study and protection co-ordination setting for HV as required</p> <p>Note: Supply & fixing of MS channels/ structurals / RCC foundation (if any) for mounting the panel shall be paid under respective items under civil works and as per the instruction of Engineer Incharge. All other items/ materials forming part of the job is deemed to be included in the scope, rates.</p>					
13.1	Supply, Installation, testing and commissioning of 33kV VCB Switchboard (complete set) as per approved SLD	EA	1.00	5,66,28,186.70	18%	6,68,21,260.31

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
14.0	SITC of Substation Automation system					
	<p>Supply, installation, assembling, connection, testing and commissioning of SAS Panels conforming to relevant IS/IEC standards and approved drawings/specifications, complete with all materials, labour and accessories. The Scope of work shall include the following:</p> <p>i. Supply of panels along with accessories as per specification/approved drawing including Packing, transportation and delivery of equipment at project site.</p> <p>ii. Testing of equipment as per approved Quality Assurance Plan (QAP), including inspection by the Owner/Consultant prior to dispatch.</p> <p>iii. 'Complete installation and assembly including interconnections and termination including Earthing all components, frame etc. to a common internal earth bar.</p> <p>iv. Touching of body with powder coating for damaged parts. All the nuts bolts & joints exposed to the air shall be covered with suitable anti - oxidant material or as directed by the Engineer incharge.</p> <p>v. Supply and fixing all accessories and supporting structure.</p> <p>vi. 'Checking of Internal connection & wiring, operation of switches, MCCB, MCB etc..</p> <p>vii. Supply of necessary tools, hardware, testing hardware, testing equipment during testing at site.</p> <p>Note: Supply & fixing of MS channels/ structurals / RCC foundation (if any) for mounting the panel shall be paid under respective items under civil works and as per the instruction of Engineer Incharge. All other items/ materials forming part of the job is deemed to be included in the scope, rates.</p>					
14.1	Supply, installation, testing and commissioning of Substation Automation System for Supervisory Control & Data Acquisition of 220KV switchyard. SAS shall also include accessories such as GPS clock,Inverter,remote gateways for LDC, etc.as per technical specification	EA	1.00	82,93,898.08	18%	97,86,799.73

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
	SITC of Power line carrier Communication					
15.0	<p>Supply, installation, assembling, connection, testing and commissioning of PLCC system conforming to relevant IS/IEC standards, as per requirements of CTU, NLDC/RLDC with required interface/communication protocols, ports, data transfer, connectivity, storage and backup and approved drawings/specifications, complete with all materials, labour and accessories. The item includes:</p> <p>i. Supply of panels/terminals along with necessary tools, hardware, testing hardware, testing equipment during testing at site, accessories as per specification/ approved drawing including supporting structure packing, transportation and delivery of equipment at project site.</p> <p>ii. Testing of equipment as per approved Quality Assurance Plan (QAP), including inspection by the Owner/Consultant prior to dispatch.</p> <p>iii. Complete installation and assembly including interconnections and termination, Earthing all components, frame etc. to a common internal earth bar, Touching of body with powder coating for damaged parts. All the nuts bolts & joints exposed to the air shall be covered with suitable anti - oxidant material or as directed by the Engineer incharge.</p> <p>iv. Checking of Internal connection & wiring, operation of switches, MCCB, MCB etc.</p> <p>Note: Supply & fixing of MS channels/ structurals / RCC foundation (if any) for mounting the panel shall be paid under respective items under civil works and as per the instruction of Engineer Incharge. All other items/ materials forming part of the job is deemed to be included in the scope, rates.</p>					
15.1	Supply, installation, testing and commissioning of Single Channel Analog PLCC terminal with 4 command tele-protection interface, speech interface, Field Tunable, 1x 4 kHz SSB 40W/50W output power (PEP) having operating band of 40KHz-500kHz for 220kV lines along with necessary accessories.	EA	1.00	12,08,969.82	18%	14,26,584.39
15.2	Supply installation testing and commissioning of Electronic micro Processor based private Automatic Exchange equipment (EPAX) (12/8) for PLCC operation along with push button telephone, 10 pair armoured telephone cable of required length and 75 ohm Unbalanced H.F. cable of required length along with other accessories as per technical specification	EA	1.00	4,96,168.18	18%	5,85,478.45
15.3	Supply installation testing and commissioning of 220 kV Coupling Device 200 W as per technical specification	EA	1.00	87,362.42	18%	1,03,087.66
15.4	Supply installation testing and commissioning of 220kV Wave Trap (Suspended type) with support insulators & support structures 1250A, 0.5mH as per approved specification, 50kA, 1Sec.	EA	1.00	3,02,179.08	18%	3,56,571.31

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
16.0	SITC of D.C. SUPPLY SYSTEM Supply, installation, assembling, connection, testing and commissioning of Battery and Charger conforming to relevant IS/IEC standards and approved drawings/specifications, complete with all materials, labour and accessories. The scope of work shall include the following: i. Supply of Battery and Charger along with accessories as per specification/approved drawing including Packing, transportation and delivery of equipment at project site. ii. Testing of equipment as per approved QAP at OEM's factory including inspection by the Owner/Consultant prior to dispatch. iii. 'Complete installation and assembly including interconnections, termination, etc including Earthing all components, frame etc. to a common internal earth bar. iv. Touching of body with powder coating for damaged parts. All the nuts bolts & joints exposed to the air shall be covered with suitable anti - oxidant material or as directed by the Engineer incharge. v. 'Checking of Internal connection & wiring, operation of switches, MCCB, MCB etc.. vi. Supply of necessary tools, hardware, testing hardware, testing equipment during testing at site. Note: Supply & fixing of MS channels/ structurals / RCC foundation (if any) for mounting the panel shall be paid under respective items under civil works and as per the instruction of Engineer Incharge. All other items/ materials forming part of the job is deemed to be included in the scope, rates					
16.1	Supply, installation, testing and commissioning of 220V DC, 300AH VRLA SMF Lead acid battery with related accessories, as per specifications for SS DC Control Supply	EA	2.00	10,12,311.34	18%	23,89,054.76
16.2	Supply, installation, testing and commissioning of Float Cum Boost Battery charger for 220V DC, 300AH VRLA SMF Lead Acid batteries	EA	2.00	7,99,575.50	18%	18,86,998.18
16.3	Supply, installation, assembly, connection, testing and commissioning DCDB-1 & 2 for 220V DC, 300AH VRLA SMF Lead-Acid	EA	2.00	1,72,463.66	18%	4,07,014.24
16.4	Supply, installation, testing and commissioning of 48V DC, 200AH VRLA SMF battery with related accessories, as per specification for Communication Equipments.	EA	2.00	2,05,285.83	18%	4,84,474.56
16.5	Supply, installation, testing and commissioning of Float Cum Boost Battery charger for 48V DC, 200AH VRLA SMF Lead-Acid battery	EA	2.00	5,10,842.13	18%	12,05,587.43
16.6	Supply, installation, assembly, connection, testing and commissioning DCDB-3 & 4 for 48V DC, 200AH VRLA SMF Lead-Acid	EA	2.00	1,35,288.68	18%	3,19,281.28

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
17.0	<p>SITC of LV Distribution boards</p> <p>Supply, installation, assembling, connection, testing and commissioning of DB's conforming to relevant IS/IEC standards and approved drawings/specifications, complete with all materials, labour and accessories. The Scope of work shall include the following:</p> <p>i. Supply of panels/DB's along with accessories as per specification/approved drawing including Packing, transportation and delivery of equipment at project site.</p> <p>ii. Testing of panels/DB's as per approved QAP at OEM's factory including inspection by the Owner/Consultant prior to dispatch.</p> <p>iii. 'Complete installation and assembly including interconnections, termination, etc including Earthing all components, frame etc. to a common internal earth bar.</p> <p>iv. Touching of body with powder coating for damaged parts. All the nuts bolts & joints exposed to the air shall be covered with suitable anti - oxidant material or as directed by the Engineer in charge.</p> <p>v. 'Checking of Internal connection & wiring, operation of switches, MCCB, MCB etc..</p> <p>vi. Supply of necessary tools, hardware, testing hardware, testing equipment during testing at site.</p> <p>Note: Supply & fixing of MS channels/ structurals / RCC foundation (if any) for mounting the panel shall be paid under respective items under civil works and as per the instruction of Engineer Incharge. All other items/ materials forming part of the job is deemed to be included in the scope, rates.</p>					
17.1	Supply, installation, assembly, connection, testing and commissioning of LT ACDB with auto Change over switch and as per Specification	EA	1.00	2,40,906.00	18%	2,84,269.08
17.2	Supply, installation, assembly, connection, testing and commissioning of PDB/AC distribution board as per Specification	EA	5.00	1,25,400.00	18%	7,39,860.00
17.3	Supply, installation, assembly, connection, testing and commissioning of ELDB as per Specification	EA	2.00	1,03,531.00	18%	2,44,333.16
17.4	Supply, installation, assembly, connection, testing and commissioning of MLDB as per Specification	EA	1.00	1,10,545.00	18%	1,30,443.10
17.5	Supply, installation, assembly, connection, testing and commissioning of LT DB (EXT.DB) for external lighting as per Specification	EA	5.00	53,900.00	18%	3,18,010.00
17.6	Supply, installation, testing, and commissioning of an outdoor, weatherproof Bay Marshalling Kiosk fabricated from CRCA sheet steel, conforming to IS 2629, complete for power distribution to bay equipment and termination of all control cables within the kiosk, with the other ends of the cables routed to the control building	EA	4.00	41,093.62	18%	1,93,961.89
17.7	Supply, installation, assembly, connection, testing and commissioning of Dual redundant 10kVA UPS with required SMF battery capacity for 4hour backup including UPS DB as per Technical Specification.	EA	1.00	1,24,238.00	18%	1,46,600.84

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
18.0	<p>Installation Testing Commissioning (ITC) of POWER TRANSFORMER</p> <p>Installation, Testing and Commissioning of the Owner supplied 165 MVA Oil cooled (ONAN/ONAF), Outdoor type, step-up transformer with ON load tap Changer conforming to relevant IS/IEC standards and approved drawings/specifications, complete with all materials, labour and accessories. The scope of work shall include the following:</p> <p>i. Taking over of transformer from the Owner's custody including loading, unloading, shifting to installation location as required and proper placement on the designated foundation/plinth.</p> <p>ii. Complete installation and assembly of the transformer at site including necessary supply of tools, tackles, etc including all leads & lifts</p> <p>iii. Drying out of the transformer, if required, prior to commissioning as per the direction of Engineer-in-charge</p> <p>iv. Oil filtration of transformer oil, including arrangement of power supply for filtration equipment, wherever required.</p> <p>v. Supply and installation of Emergency Trip Push Button (ETPB) station in IP-65 enclosure near the transformer, including necessary cabling and termination.</p> <p>vi. Earthing of transformer neutral and body as per approved earthing scheme.</p> <p>vii. Testing of transformer as per IS/IEC as applicable before commissioning.</p> <p>viii. Charging of transformer gradually and complete commissioning as per IS/IEC as applicable.</p>					
18.1	<p>Installation, Testing and Commissioning of 165MVA, ONAN/ONAF, 220/33/33 kV, YNynyn0, Z=15% power transformer complete with RTCC panel, marshalling box, control cabinet with associated accessories conforming to relevant IS/IEC standards and approved drawings/specifications.</p> <p><i>Note:</i></p> <p>i. The power transformers shall be supplied by the Owner as free issue materials.</p> <p>ii. Civil works shall be paid separately under respective items</p>	EA	2.00	5,09,789.93	18%	12,03,104.23

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
18.2	<p>Supply, installation, testing and commissioning of Online Multi-Gas Dissolved Gas Analysis (DGA) Monitoring System for 220/33-33 kV, 165 MVA power transformer, suitable for continuous online monitoring of dissolved fault gases in transformer insulating oil. The system shall monitor minimum seven key gases, namely Hydrogen (H₂), Methane (CH₄), Ethane (C₂H₆), Ethylene (C₂H₄), Acetylene (C₂H₂), Carbon Monoxide (CO) and Carbon Dioxide (CO₂) along with moisture in oil and oil temperature using proven gas extraction and sensing technology such as Gas Chromatography (GC), Photo-Acoustic Spectroscopy (PAS), Tunable Diode Laser (TDLAS) or equivalent. The analyser shall provide suitable measurement ranges with accuracy better than ±10%, automatic periodic sampling, and measurement cycle within 30-60 minutes and shall be suitable for direct mounting on the transformer oil valve or skid mounted with oil circulation arrangement, complete with required oil piping, valves, filters and mounting accessories.</p> <p>The analyser shall operate on 220 V DC supply and support Modbus RTU / Modbus TCP/IP / IEC-61850 communication protocols for integration with SCADA / Substation Automation System, along with potential-free alarm and trip contacts and the system shall include local HMI/display, data logging, event recording and self-diagnostics, and support transformer fault interpretation methods as per IEC 60599 and IEEE C57.104. The equipment shall be suitable for outdoor installation with minimum IP65 protection, operating in -10°C to +55°C ambient conditions</p>	EA	2.00	30,00,000.00	18%	70,80,000.00
18.3	<p>Supply, installation, testing and commissioning of Nitrogen Injection Fire Protection System (NIFPS) and NIFPS panel for power transformer including nitrogen cylinders/gas unit, TCIV (Transformer Conservator Isolation Valve), control panel, detectors, control relays, piping, valves, fittings, mounting hardware, interconnecting cables and all associated accessories required for complete and satisfactory operation of the system. The system shall be capable of operation in Local, Remote and Automatic modes and shall be complete in all respects as per technical specification and relevant standards</p>	EA	2.00	23,10,000.00	18%	54,51,600.00

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
19.0	<p>ITC of AUXILIARY TRANSFORMER</p> <p>Installation, Testing and Commissioning of Oil cooled (ONAN), Outdoor type, step-down transformer with ON load tap Changer conforming to relevant IS/IEC standards and approved drawings/specifications, complete with all materials, labour and accessories. The scope of work shall include the following:</p> <p>i. Taking over of transformer from the Owner's custody including loading, unloading, shifting to installation location as required and proper placement on the designated foundation/plinth.</p> <p>ii. Complete installation and assembly of the transformer at site including necessary supply of tools, tackles, etc including all leads & lifts</p> <p>iii. Drying out of the transformer, if required, prior to commissioning as per the direction of Engineer-in-charge</p> <p>iv. Oil filtration of transformer oil, including arrangement of power supply for filtration equipment, wherever required.</p> <p>v. Supply and installation of Emergency Trip Push Button (ETPB) station in IP-65 enclosure near the transformer, including necessary cabling and termination.</p> <p>vi. Earthing of transformer neutral and body as per approved earthing scheme.</p> <p>vii. Testing of transformer as per IS/IEC as applicable before commissioning.</p> <p>viii. Charging of transformer gradually and complete commissioning as per IS/IEC as applicable.</p>					
19.1	<p>Installation, Testing and Commissioning of 250kVA to 300kVA, ONAN, 33000V/415V, Dyn11 step-down transformer complete with marshalling box, control cabinet with associated control, other accessories as per IS 1180.</p> <p><i>Note:</i></p> <p>i. The Distribution transformers shall be supplied by the Owner as free issue materials.</p> <p>ii. Civil works shall be paid separately under respective items</p>	EA	2.00	26,666.19	18%	62,932.21

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
20.0	SITC of EARTHING SYSTEM FOR SWITCH YARD					
	Earthing Stations					
20.1	<p>Supply, installation, connection, testing and commissioning of plate type / pipe type earthing station for various electrical equipments and systems in switchyard complete with all materials, labour and accessories, as per approved drawings, technical specifications and relevant IS/IEC standards, complete with all materials, labour and accessories. The item shall include the following works:</p> <p>i. 'Excavation of earth pit in soft soil / hard murrum, including disposal of excavated earth.</p> <p>ii. 'Supply and installation of copper plate electrode / G.I. pipe/MS Rod electrode as approved.</p> <p>iii. 'Construction of brick masonry earth pit chamber with plastering, including heavy-duty C.I. frame with hinged cover of suitable size as per drawings</p> <p>iv. 'Supply of charcoal, salt or approved backfill compound and filling of earth pit as per specification</p> <p>v. 'Supply of all tools, tackles, consumables and accessories required for excavation and civil works</p> <p>vi. 'Supply and installation of equipotential bar with enclosure/housing, including mounting hardware and connections.</p> <p>vii. Testing of the completed earthing station and recording of earth resistance values, including proper identification and stenciling of the earthing pit number and corresponding earth grid readings, in accordance with the approved drawings, technical specifications, and relevant IS/IEC standards</p>					
20.1.1	Providing earthing electrode of 40mm dia 4.5m long as per IS: 3043 standard/ drawing /specifications with following sizes medium quality, Class-B, ITC/KT/Jindal make GI pipe fabricated as per the approved drawing and driven in the earth pit filled up with charcoal or coke dust mixed with salt clay (salt 0.5%) including providing inspection chamber as per the drawing with cover, earth, excavation, back filling, masonry work etc. all complete with labour and materials as per the direction of Engineer- in-Charge.	EA	150.00	4,768.36	18%	8,43,999.72
20.1.2	Providing earthing with GI plate as per IS: 3043 standard/ drawing /specification with plate size 600 mm x 600 mm x 6 mm thick plate with drilled hole at centre to receive 50 mm long 13 mm bolt, nut and double washer screwing system with GI tape / GI flexible. The tape / flexible shall be inside 1 1/2" dia GI pipe length from GI plate to the system to be earthed. The Plate shall be buried at a minimum depth of 4.5 Mtr below ground level on its edge and 2 Mtrs away from building/equipment foundation and shall be connected to the equipment. The size of the GI flexible shall be not less than 19 mm x 3 mm	EA	10.00	4,973.25	18%	58,684.35

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
20.2	SITC of Earthing Conductor					
	Supply, laying, installation, connection, testing and commissioning of bare earthing conductors for earth mat, interconnection of earthing stations, equipment and structures in the switchyard and control room, laid in built-up trenches, cable trenches, walls/ceilings or buried directly in ground, complete with labour and materials as per direction of Engineer-inCharge. The work shall include the following: i. Provision of corrosion protection for buried conductors using bituminous coating or equivalent approved method ii. 'Supply and installation of test links (GI/Copper) wherever required for testing and maintenance iii. Connection and termination of earthing conductors to equipment, structures, earth pits, equipotential bars, etc					
	20.2.1 75 mm x 10 mm GI strip	M	14500.00	496.58	18%	84,96,483.80
	20.2.2 50 mm x 8 mm GI strip	M	2200.00	264.84	18%	6,87,531.56
	20.2.3 50 mm x 6 mm GI strip	M	500.00	231.16	18%	1,36,384.40
	20.2.4 25 mm x 3 mm Cu strip	M	95.00	542.34	18%	60,796.86

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
	SITC of MV CABLE					
21.0	<p>Supply, laying, installation, jointing/termination, testing and commissioning of 33 kV, armoured, XLPE insulated aluminium conductor cable suitable for earthed system, complete with all accessories, supports and materials, etc., including all labour, tools, tackles and consumables required for complete installation as per approved cable schedule /layout. The Scope of work shall include the following:</p> <p>i. Supply of Cables as per approved cable schedule/data sheet/specification including Packing, transportation and delivery of equipment at project site.</p> <p>ii. Pre-laying inspection and insulation resistance (megger) testing</p> <p>iii. Excavation of trenches in soft soil / hard murrum / rocky area up to required depth and Supply, laying of fine sand bedding, protective bricks/tiles, warning tape and backfilling, including levelling of ground to original condition</p> <p>iv. Laying of cables in tray/trenches / RCC hume pipes, as per the approved cable route/layout</p> <p>v. Supply and installation of cable route markers at intervals of 30 m and at all changes in direction</p> <p>vi. Glanding, termination and bonding of cable armour, including earthing of glands and armouring using suitable earthing clamps, jumpers, etc and connection to the station earth grid/common earth bar.</p> <p>vii. Post-laying testing including insulation resistance and high voltage (HV) withstand/pressure testing at site</p> <p>viii. Preparation and submission of cable schedules/Data sheets/documents for approval at appropriate stage</p>					
21.1	Supply, Laying, Testing and Commissioning of 33kV, 1Cx 630mm ² AL XLPE Armoured Cable including excation, including excavation, laying of bricks, filling with sand as per requirement, backfillings, etc.	M	4000.00	2,370.69	18%	1,11,89,633.20
21.2	Supply & connection of the Heat shrinkable type indoor/outdoor MV cable end termination kit suitable for 1C x 630mm ² x 33kV(E), XLPE, Aluminium, Armoured Cable by providing required size lugs, glands and ferrules	EA	120.00	7,700.14	18%	10,90,339.82
21.3	Supply, Laying, Testing and Commissioning of 33kV, 3Cx 240mm ² AL XLPE Armoured Cable including excation, including excavation, laying of bricks, filling with sand as per requirement, backfillings, etc.	M	150.00	3,569.98	18%	6,31,886.64
21.4	Supply & connection of the Heat shrinkable type indoor/outdoor MV cable end termination kit suitable for 3C x 240mm ² x 33kV(E), XLPE, Aluminium, Armoured Cable by providing required size lugs, glands and ferrules	EA	12.00	7,700.14	18%	1,09,033.98

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
22.0	SITC of POWER AND CONTROL CABLES					
	<p>Supply, laying, connection, testing and commissioning of heavy duty, low voltage, XLPE insulated, stranded AL / Cu conductor Armoured cables conforming to relevant IS/IEC standards, complete with all materials, labour and accessories. The scope of work shall include the following:</p> <p>i. The cables shall be 1.1 kV grade XLPE insulated, PVC inner sheathed and FRLS/FRLSH PVC ST2 outer sheathed, armoured cables with stranded Aluminium or Copper conductors, conforming to IS 7098 (Part-1) and other applicable standards</p> <p>ii. Cables shall be laid underground in excavated trenches / prepared trenches / RCC hume pipes when installed outside buildings, and in cable trays / trenches / ducts / channels / floor trunks when installed inside buildings, complete with all accessories</p> <p>iii. Supply of Cables as per approved cable schedule/data sheet/specification including Packing, transportation and delivery of equipment at project site.</p> <p>iv. Laying of cables in trenches, cable trays, ducts, hume pipes, channels or floor trunks as applicable including supply and installation of cable clamps, supports, brackets, saddles, route markers and identification tags wherever required</p> <p>v. Connection and termination of cables to equipment/panels</p> <p>vi. Earthing of cable glands and armour using earthing clamps, jumpers, etc as applicable and connection to the station earthing system / common earth bar</p> <p>vii. Testing of insulation resistance, continuity and functional checks after installation and submission of test reports</p>					
22.1	POWER CABLES					
22.1.1	3.5Cx300 sq. mm Aluminium XLPE Armoured FRLS Cable	M	600	1,342.71	18%	9,50,637.99
22.1.2	3.5Cx120 sq. mm Aluminium XLPE Armoured FRLS Cable	M	514	513.81	18%	3,11,520.84
22.1.3	3.5Cx70 sq. mm Aluminium XLPE Armoured FRLS Cable	M	346	346.13	18%	1,41,371.05
22.1.4	3.5Cx35 sq. mm Aluminium XLPE Armoured FRLS Cable	M	310	220.86	18%	80,790.59
22.1.5	3.5 Cx 25 sq. mm Aluminium XLPE Armoured FRLS Cable	M	80	189.70	18%	17,907.68
22.1.6	3 Cx 2.5 sq. mm Copper XLPE Armoured FRLS Cable	M	580	138.70	18%	94,926.28
22.1.7	4Cx16 sq. mm Aluminium XLPE Armoured FRLS Cable	M	1645	163.39	18%	3,17,156.33
22.1.8	4Cx10 sq. mm Aluminium XLPE Armoured FRLS Cable	M	169	135.52	18%	27,025.40
22.1.9	4Cx6 sq. mm Aluminium XLPE Armoured FRLS Cable	M	484	117.26	18%	66,969.53
22.1.10	4C x 2.5sq. mm Copper XLPE Armoured FRLS Cable	M	3240	161.06	18%	6,15,764.59

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
22.1.1 1	2Cx70 sq. mm Aluminium XLPE Armoured FRLS Cable	M	150	329.58	18%	58,335.48
22.2	CONTROL CABLES					
22.2.1	2Cx10 sq. mm, Cu, PVC insulated, FRLSH Sheathed, Armoured Cable	M	65	217.66	18%	16,694.75
22.2.2	2Cx2.5 sq. mm, Cu, PVC insulated, FRLSH Sheathed, Armoured Cable	M	2884	109.66	18%	3,73,196.35
22.2.3	4C x 4 sq. mm, Cu, PVC insulated, FRLSH Sheathed, Armoured Cable	M	7273	233.07	18%	20,00,184.37
22.2.4	7C x 2.5 sq. mm, Cu, PVC insulated, FRLSH Sheathed, Armoured Cable	M	3499	279.38	18%	11,53,394.32
22.2.5	12C x 2.5 sq. mm, Cu, PVC insulated, FRLSH Sheathed, Armoured Cable	M	4190	426.16	18%	21,07,205.67
22.2.6	19C x 2.5 sq. mm, Cu, PVC insulated, FRLSH Sheathed, Armoured Cable	M	3330	604.88	18%	23,76,624.97
22.2.7	27C x 2.5 sq. mm, Cu, PVC insulated, FRLSH Sheathed, Armoured Cable	M	1000	651.93	18%	7,69,273.38
22.2.8	2Pair 1.5 sq. mm Copper Shielded Cable	M	1206	201.66	18%	2,87,042.07
22.2.9	10Pair 1.5 sq. mm Copper Shielded Cable	M	200	1,829.19	18%	4,31,689.78

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
	POWER CABLES END TERMINATIONS					
23.0	Supply, installation, testing and commissioning of 1.1kV power cable end terminations using double compression cable glands of nickel plated brass with check nuts and crimping type copper/aluminium/bimetallic lugs or sockets suitable for XLPE insulated, PVC sheathed, armoured aluminium or copper conductor power cables, in accordance with relevant IS standards and specifications, complete with all materials, labour and accessories. The scope shall include supply and installation of cable glands, crimping of suitable copper/aluminium/bimetallic lugs or sockets, supply of PVC insulating tape and other accessories required for proper electrical termination and connection of the cables. The work shall also include earthing of cable glands and armour by connecting to the common earth bar using suitable earthing clamps and jumpers, provision of PVC gland protection hoods for outdoor terminations, and testing and verification of all cable terminations after completion.					
23.1	3.5Cx300 sq. mm Aluminium XLPE Armoured FRLS Cable	EA	12	1,299.00	18%	18,393.84
23.2	3.5Cx120 sq. mm Aluminium XLPE Armoured FRLS Cable	EA	8	905.05	18%	8,543.67
23.3	3.5Cx70 sq. mm Aluminium XLPE Armoured FRLS Cable	EA	6	627.93	18%	4,445.74
23.4	3.5Cx35 sq. mm Aluminium XLPE Armoured FRLS Cable	EA	8	430.00	18%	4,059.20
23.5	3.5 Cx 25 sq. mm Aluminium XLPE Armoured FRLS Cable	EA	4	430.00	18%	2,029.60
23.6	3 Cx 2.5 sq. mm Copper XLPE Armoured FRLS Cable	EA	6	327.83	18%	2,321.04
23.7	4Cx16 sq. mm Aluminium XLPE Armoured FRLS Cable	EA	28	430.00	18%	14,207.20
23.8	4Cx10 sq. mm Aluminium XLPE Armoured FRLS Cable	EA	12	404.46	18%	5,727.15
23.9	4Cx6 sq. mm Aluminium XLPE Armoured FRLS Cable	EA	36	404.46	18%	17,181.46
23.10	4C x 2.5sq. mm Copper XLPE Armoured FRLS Cable	EA	94	327.83	18%	36,362.90
23.11	2Cx70 sq. mm Aluminium XLPE Armoured FRLS Cable	EA	36	784.00	18%	33,304.32
	CONTROL CABLE END TERMINATIONS					
24.0	Supply, installation, testing and commissioning of control cable end terminations using weatherproof double compression cable glands nickel plated brass with check nuts and crimping type tinned copper lugs suitable for 1.1 kV grade copper conductor, PVC/XLPE insulated, PVC sheathed, armoured control cables, in accordance with relevant IS standards and specifications, complete with all materials, labour and accessories. The scope shall include supply and installation of cable glands, crimping of tinned copper lugs, earthing of cable glands and armour by connecting to the common earth bar using suitable earthing clamps and jumpers, provision of PVC gland protection hoods for outdoor terminations, and testing and verification of all cable terminations after completion.					
24.1	2Cx10 sq. mm, Cu, PVC insulated, FRLSH Sheathed, Armoured Cable	EA	6	137.51	18%	973.57
24.2	2Cx2.5 sq. mm, Cu, PVC insulated, FRLSH Sheathed, Armoured Cable	EA	124	137.51	18%	20,120.46

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
24.3	4C x 4 sq. mm, Cu, PVC insulated, FRLSH Sheathed, Armoured Cable	EA	208	132.50	18%	32,488.64
24.4	7C x 2.5 sq. mm, Cu, PVC insulated, FRLSH Sheathed, Armoured Cable	EA	100	196.53	18%	23,181.93
24.5	12C x 2.5 sq. mm, Cu, PVC insulated, FRLSH Sheathed, Armoured Cable	EA	120	254.77	18%	35,991.84
24.6	19C x 2.5 sq. mm, Cu, PVC insulated, FRLSH Sheathed, Armoured Cable	EA	95	254.77	18%	28,599.96
24.7	27C x 2.5 sq. mm, Cu, PVC insulated, FRLSH Sheathed, Armoured Cable	EA	29	254.77	18%	8,589.22
24.8	2Pair 1.5 sq. mm Copper Shielded Cable	EA	34	137.51	18%	5,592.24
24.9	10Pair 1.5 sq. mm Copper Shielded Cable	EA	6	254.77	18%	1,717.84
25.00	SITC of G.I. CABLE TRAY					
	Supply, fabricating and installing following sizes of perforated GI cable trays including horizontal and vertical bends, reducers, tees, cross members and other accessories as required and duly suspended from the ceiling and / or fix to steel/ RCC columns, beams, or any other structure members with MS suspenders, angles, channels etc. complete with all materials, labour and accessories. as per the direction of Engineer-in Charge					
25.10	600mm x 100mm x 2mm	M	1900	1,441.28	18%	32,31,349.76
25.20	300mm x 100mm x 2mm	M	410	964.36	18%	4,66,557.37
25.30	150mm x 50mm x 2mm	M	150	567.17	18%	1,00,389.09
26.0	SITC of SWITCHYARD STEEL STRUCTURES					
26.1	Supply, Fabrication, Installation and of Galvanised structural steel of different sizes for Gantry, Lightening mast, Beams and mounting of various equipment in field such as CT, PT, CVT, Isolator, PI, LA etc as per approved drawings and technical specifications. Structural steel conforming to Grade IS:2062 shall be galvanized in accordance with the provisions of IS 4759. Weight of zinc coating shall be at least 0.610 kg/m2 and foundation bolts shall have heavier zinc coating of at least 0.80 kg/m2. Foundation bolts shall conform to IS: 5624, property class 4.6 as specified in IS: 1367. The weight of bolts, nuts, washers and accessories for structure erection shall not be considered for measurement and payment.	MT	160	1,27,580.72	18%	2,40,87,239.75

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
27.0	SITC of DIESEL GENERATOR SET (DG SET)					
	Supplying, Installation, Testing & Commissioning of 'Silent Type Diesel Generating set as per CPCB IV + or better norms along with having Prime Power Rating of KVA as below, 415 volts at 1500 RPM, 0.8 lagging power factor at 415 V suitable for 50 Hz, 3 phase system & for 0.85 Load Factor, including testing at factory and site with fuel, load for test and other necessary arrangements Complete as per specifications, should have QR code which should contain drawing, test report OEM manual, Geo-Tag of manufacturing location, rating plate as per relevant IS Code etc. complete with all materials, labour and accessories comprising Diesel Engine, Instrument Panel, Alternator, Base frame, foundation, AVM pads, Fuel tank, Exhaust System, Starter/ Battery System, Acoustic Enclosure, AMF panel and as per enclosed technical specifications.					
27.1	Supply, installation, testing and commissioning of 250 kVA Diesel Generator Set with CPCB-compliant acoustic enclosure, suitable for 75 dB(A) noise level at 1 m distance, complete with exhaust system, control and protection panel, metering, indication/annunciation and all accessories required for complete operation	EA	1	15,86,051.69	18%	18,71,541.00

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
	SITC of Interface Energy Meters(IEMs) along with Automated Meter Reading (AMR) system					
28.0	<p>Supply, installation, testing and commissioning of Interface Energy Metering (IEM) and Automated Meter Reading (AMR) system, complete in all respects, conforming to relevant IS/IEC standards, approved drawings, specifications, complete with all materials, labour and accessories as per the directions of the Engineer-in-Charge. The Scope of work shall include the following:</p> <p>i. Supply of panels/terminals along with accessories as per specification/approved drawing including Packing, transportation and delivery of equipment at project site.</p> <p>ii. Testing of equipment as per approved Quality Assurance Plan (QAP), including inspection by the Owner/Consultant prior to dispatch.</p> <p>iii. 'Complete installation and assembly including interconnections and termination including Earthing all components, frame etc. to a common internal earth bar.</p> <p>iv. Touching of body with powder coating for damaged parts. All the nuts bolts & joints exposed to the air shall be covered with suitable anti - oxidant material or as directed by the Engineer incharge.</p> <p>v. Supply and fixing all accessories and supporting structure.</p> <p>vi. Checking of Internal connection & wiring, operation of switches, MCCB, MCB etc..</p> <p>vii. Supply of necessary tools, hardware, testing hardware, testing equipment during testing at site.</p> <p>Note: Supply & fixing of MS channels/ structurals / RCC foundation (if any) for mounting the panel shall be paid under respective items under civil works and as per the instruction of Engineer Incharge. All other items/ materials forming part of the job is deemed to be included in the scope, rates.</p>					
28.1	Supply installation testing and commissioning of AMR Panel suitable for housing 8Nos of IEM(Inter face energy Meters),1No DCU,2Nos of Network switches,1No LIU (if required) with provision for TTBs for CT/PT secondary wiring to IEMs,TBs for terminating cables of AC/DCsupply,with separate MCB for AC/DC supply to DCU,Network switch with necessary internal pane wiring up to TBs	EA	1	1,61,283.10	18%	1,90,314.06
28.2	Supply installation testing and commissioning of 3Phase 4Wire IEM, Rated Current -/1A, rated voltage -3x63.5V(P-N), Frequency-50Hz, Accuracy class-0.2S,Standard applicable-IS14679,IEC62052-11,ICE62052-22,CBIP325, Power Consumption-as per IS14679,Ingress protection IP51, Energy Measurement -4 Quadrant measurement of kWh, kVAh and kVAh, Comminterface-RS232/RS485/TCP/IP,ProtocolSupport-IEC/DLMS/MODBUS. IEM shall be DLMS compliant and suitable for AMR system	EA	1	73,360.82	18%	86,565.77
28.3	Supply, installation, testing and commissioning of AMR communication system including 1 No's of Data Concentrator Unit (DCU), 2 No's of industrial ethernet network switch, 1 No's of LIU with patch cords, along with required cables such as CAT 6 LAN cable, Armoured FO cable 2 pair, PVC conduits and other accessories, configuration and integration with AMR server	Set	1	2,74,054.04	18%	3,23,383.77
	SITC of INTELLIGENT FIRE ALARM SYSTEM					

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
29.0	<p>Supply, installation, testing and commissioning of intelligent fire alarm system, complete in all respects, conforming to relevant IS/IEC standards, approved drawings, specifications, complete with all materials, labour and accessories as per the directions of the Engineer-in-Charge. The scope of work shall include the following:</p> <p>i. Supply of panels along with accessories as per specification/approved drawing including Packing, transportation and delivery of equipment at project site.</p> <p>ii. Testing of equipment as per approved Quality Assurance Plan (QAP), including inspection by the Owner/Consultant prior to dispatch.</p> <p>iii. 'Complete installation and assembly including interconnections and termination including Earthing all components, frame etc. to a common internal earth bar.</p> <p>iv. Touching of body with powder coating for damaged parts. All the nuts bolts & joints exposed to the air shall be covered with suitable anti - oxidant material or as directed by the Engineer incharge.</p> <p>v. Supply and fixing all accessories and supporting structure.</p> <p>vi. 'Checking of Internal connection & wiring, operation of switches, MCCB, MCB etc..</p> <p>vii. Supply of necessary tools, hardware, testing hardware, testing equipment during testing at site.</p> <p>Note: Supply & fixing of MS channels/ structurals / RCC foundation (if any) for mounting the panel shall be paid under respective items under civil works and as per the instruction of Engineer Incharge. All other items/ materials forming part of the job is deemed to be included in the scope, rates.</p>					
29.1	Supplying, installation, testing and commissioning of micro processor based intelligent addressable main fire alarm panel, central processing unit with the 2 (Two) loop modules and capable of supporting not less than 240 devices (including detectors) and minimum 120 detectors per loop and loop length up to 2 km, network communication card, minimum 320 character graphics/ LCD display with touch screen or other keypad and minimum 4000 events history log in the non volatile memory (EPROM), power supply unit (230 ± 5 % V, 50 hz), 48 hrs back-up with 24 volt sealed maintenance free batteries with automatic charger. The panel shall have facility to connect printer to printout log and facility to have seamless integration with analog/digital voice evacuation system and shall be complete with all accessories . The panel shall be compatible for IBMS system with open protocol BACnet/ Modbus over IP complete as per specifications	EA	1	2,12,220.34	18%	2,50,420.00
29.2	Supplying, installation, testing & commissioning of central graphical fire alarm management system to centrally monitor and operate the fire alarm system complete as required	EA	1	1,78,189.83	18%	2,10,264.00
29.3	Supplying, installation, testing & commissioning of repeater panel with 320 character/ Touch screen LCD display with inbuilt reset, acknowledge and silence switches complete as required	EA	1	96,384.75	18%	1,13,734.00
29.4	Supplying, installation, testing & commissioning of intelligent analog addressable Smoke/photothermal detector complete with mounting base complete as required	EA	15	2,545.76	18%	45,060.00
29.5	Supplying, installation, testing & commissioning of response indicator on surface/recessed MS Box having two LED, metallic cover complete with all connections etc as required	EA	5	259.32	18%	1,530.00
29.6	Supplying, installation, testing & commissioning of intelligent addressable programmable sounder complete as required	EA	5	2,361.86	18%	13,935.00
29.7	Supplying, installation, testing & commissioning of fault isolator complete with base as required	EA	5	2,910.17	18%	17,170.00

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
29.8	Supplying, installation, testing & commissioning of addressable fire control module complete as required	EA	5	2,674.58	18%	15,780.00
29.9	Supplying, installation, testing & commissioning of addressable manual call point complete as required	EA	5	3,443.22	18%	20,315.00
29.10	Supplying, installation, testing & commissioning of addressable horn cum strobe complete as required	EA	5	3,120.34	18%	18,410.00
30.0	SAFETY ACCESSORIES					
30.1	Supply and installation of shock hazard chart as per IE Rules 1956 (Clause-44) complete with frame and glass including necessary clamps, bolts, rawl plugs, etc. breaching and making good the wall if required. All complete with labour and materials as per the direction of EIC	EA	2	756.91	18%	1,786.31
30.2	Supply and installation of "Caution Boards" MV-200 mm X 150 mm / HV- 250 mm X 200 mm, made of mild steel, at least 2 mm thick, and vitreous enamelled white on both sides, and with inscription in single red colour on front side as required.at sub-stations as per IS2551/up to date including supply of necessary clamps, nuts, bolts and other hardware. All complete with labour and materials as per the direction of the Engineer-in-Charge	EA	20	260.95	18%	6,158.42
30.3	Supplying Fire bucket stand- 4 buckets hanging arrangement 1 meter height, made of 50x50x6mm angle frame, painted with 2 coats of primer and 2 coats of Red, synthetic enamel paint.	EA	4	2,517.31	18%	11,881.70
30.4	Supply of Galvanised Fire buckets of 9 litre capacity, painted white inside and red outside with letters 'fire' in black, conforming to IS 2546-1974.	EA	16	347.87	18%	6,567.79
30.5	Supplying and fixing of 4.5kg CO2 fire extinguisher of approved make Conforming to IS 15683, portable high pressure type. Body seamless Manganese Steel, ISI marked conforming to IS 7285, discharge valve conforming to IS 324,polyethylene flat discharge horn with diffuser,1m wire braded rubber hose, powder coated wall mounting mild steel bracket,stainless steel safety pin of SS 316 grade, CO2 gas with 99.5% purity. Extinguisher shall have anti corrosive treatment of phosphating by hot dipping process to thickness not less than 0.012mm both internally and externally. Epoxy polyester powder coating of minimum 50 micron to all metallic external parts with two bands of yellow colored fluorescent adhesive tape of minimum 20mm thickness of body. Finish of the paint to be PO red as per shade 538 of IS:5	EA	10	7,128.14	18%	84,112.05

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
30.6	Supplying and fixing of 9kg DCP portable,cartridge type Fire extinguisher of approved make,Conforming to IS15683:2006,Body Carbon Steel as per IS:513,EDD grade with no vertical weld joint on the body Neck ring of seamless mild steel tube conforming to IS 1239 part-1, Valve assembly conforming to SS 316 grade or forged brass as per IS 6912 grade FLB, Inlet and outlet siphon tubes of SS 316 grade or of brass as per IS 407, Discharge nozzle of SS 316 grade of forged brass as per IS 6912, 500mm long discharge hose of EDPM rubber, powder coated wall mounting mild steel bracket,stainless steel safety Pin of SS 316 grade, Dry Chemical powder (potassium bi-carbonate & Minimum 90% of the total chemical), ISI marked CO2 Gas cartridge of 200 gms, dia of the body 175mm +/- 10mm & overall height less than 650mm.Extinguisher shall have anticorrosive treatment of phosphating by hot dipping process to thickness not less than 0.012mm both internally & externally. Epoxy polyester powder coating of minimum 50 micron to all metallic external parts with two bands of yellow colored fluorescent adhesive tape of minimum 20mm thickness of body. Finish of the paint to be PO red as per shade 538 of IS:5	EA	5	3,719.03	18%	21,942.28
30.7	Supply and fixing of name board indicating 220/33kV SS, XXXXXXX, XXXXXXXX, XXXXXXXX Of size 4x8 feet with MS 18gauge sheet MS 1.5"angles.1.5"pipes and concreting foundation including cost of painting letters(1no. In English & 1no. In local language) as per the direction of EIC	EA	1	26,486.45	18%	31,254.01
30.8	Supply and fixing of teak wood name boards with enamel painting letters of size 12"x4" for rooms in control room	EA	2	4,283.77	18%	10,109.70
30.9	Supply and fixing of Bay Indicator boards of thickness 18" with MS sheet and MS angles of size 10"x26" including cost of letters	EA	4	2,474.06	18%	11,677.56
30.10	Supply and installation of 3' x 2' Wooden key board suitable for holding 30 Nos Key chains	EA	1	1,458.48	18%	1,721.01
30.11	Supply and installation of a Single Line Diagram (SLD) display board of size 6 ft x 5 ft, made of plywood with Novapan finish or equivalent, provided with suitable border complete as directed by the Site Engineer, suitable for wall mounting, complete in all respects	EA	2	6,325.23	18%	14,927.54
30.12	Supply and laying of insulating rubber mats conforming to IS 15652, suitable for electrical insulation for 33kV and 11kV with anti-skid surface and ISI marking, of size 2 m x 1 m, thickness as specified, placed in front of electrical panels.	EA	35	3,760.53	18%	1,55,309.89
30.13	Supply of Discharge rods 10 ft long with suitable screw type clamp suitable for moose conductor & 15 Mtrs long 25 sqmm. Copper lead with heavy duty crocodile clamp.(Set Consists 3 Nos)	EA	1	11,962.42	18%	14,115.66
31.0	SITC of HIGH MAST					
31.1	Supply, installation, testing and commissioning of Hot dip galvanised High Mast lighting tower (20 m height) including all accessories 5 x 300 watt LED fixture with lamp, head frame, Aviation Obstruction lamps, Lightning Arrestor with down conductors, stainless steel rope, double drum winch, junction boxes, plugs and sockets, Feeder box, galvanised lantern carrier arrangement, Lighting fixtures, double compression steel glands and accessories, tinned copper cable lugs of suitable size and type, cables and cable accessories from light fittings upto feeder box etc. as per specification	EA	3	4,05,265.13	18%	14,34,638.54

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
32.0	Supply & laying of Heavy Duty type, High compression strength, IP 67 rated (DWC) Double wall corrugated HDPE Conduits as per IS:14930/ IS:16205. Laying includes with GI pull wires inside the conduits & necessary ends to be filled with sealants, of all complete and as per drawing & specification.					
32.1	i) 75 mm OD / 63 mm ID	M	1000	158.64	18%	1,87,195.20
32.3	ii) 50 mm OD / 38 mm ID	M	1000	120.82	18%	1,42,567.60
33.0	Earth work in surface excavation not exceeding 30 cm in depth but exceeding 1.5 m in width as well as 10 sqm on plan including taking out and disposal of excavated earth within site and lift upto 1.5 m, disposed soil to be levelled and neatly dressed as directed by Engineer-in-charge.	M2	3000	84.18	18%	2,97,997.20
34.0	Clearing grass and removal of the rubbish outside site premises and at an unobjectionable place.	M2	32150	5.82	18%	2,20,793.34
35.0	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30 cm in depth, 1.5m in width as well as 10 sqm on plan) including taking out and disposal of excavated earth within or outside site to unobjectionable place and lift upto 1.5m, as directed by Engineer-in-charge. Disposed earth to be levelled and neatly dressed.					
35.1	All kinds of Soil	M3	2600	165.38	18%	5,07,385.84
36.0	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including taking out the excavated soil & disposal of surplus excavated soil as directed, within or outside the site at an unobjectionable place.					
36.1	i) All kinds of Soil	M3	6305	229.46	18%	17,07,159.45
36.2	ii) Ordinary rock	M3	610	407.57	18%	2,93,368.89
36.3	iii) Hard Rock(Blasting Prohibited) chisel/pneumatic drilling	M3	150	982.71	18%	1,73,939.67
37.0	Extra for every additional lift of 1.5m or part thereof in excavation or banking excavated or stacked materials in all kinds of soil	M3	2040	82.22	18%	1,97,919.98
38.0	Extra for every additional lift of 1.5m or part thereof in excavation or banking excavated or stacked materials in ordinary or hard rock	M3	350	147.42	18%	60,884.46
39.0	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, within premises and lift upto 1.5m	M3	900	199.76	18%	2,12,145.12
40.0	Providing and laying in position cement concrete of specified grade excluding cost of centering & shuttering. All work up to plinth level:					
40.1	i) 1:3:6(1 Cement : 3 Coarse Sand : 6 Graded stone aggregate of 20mm)	M3	90	5,692.36	18%	6,04,528.63
40.2	ii) 1:4:8(1 Cement :4 Coarse Sand :8 Graded stone aggregate of 40mm)	M3	614	5,265.38	18%	38,14,873.12
41.0	Centering and shuttering including strutting, propping etc. and removal of form work for:					
41.1	Foundations,footings,bases of column	M2	409	259.06	18%	1,25,027.54

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
42.0	Providing and laying damp-proof course 40mm thick with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 12.5mm nominal size). Item includes providing & mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specifications. Providing & applying a coat of residual petroleum bitumen of grade VG-10 of approved quality using 1.7kg per square metre on damp proof course after cleaning the surface with brushes & finally with a piece of cloth lightly soaked in kerosene oil	M2	50	429.61	18%	25,346.99
43.0	Chequered precast cement concrete tiles 22 mm thick in footpath & courtyard jointed with neat cement slurry mixed with pigment to match the shade of tiles including rubbing and cleaning etc. complete on 20 mm thick bed of cement mortar 1:4 (1 cement: 4 coarse sand). Tiles of dark shade pigment using ordinary cement	M2	270	843.97	18%	2,68,888.84
44.0	Centering and shuttering including strutting, propping etc. and removal of form for :					
44.1	i) Foundations,footings,bases of columns, etc. for mass concrete	M2	1100	259.06	18%	3,36,259.88
44.2	ii) Walls (any thickness) including attached pilasters, buttress, plinth and string courses etc.	M2	1630	554.13	18%	10,65,813.64
44.3	iii) Suspended floors,roofs,landings,balconies, access platform and Shelves (Cast in situ)	M2	870	630.30	18%	6,47,065.98
44.4	iv) Lintels, beams plinth beams,girders bressumers and cantilevers	M2	264	502.06	18%	1,56,401.73
44.5	v) Columns, Pillars, Piers, Abutments, Posts and Struts.	M2	1370	667.27	18%	10,78,708.68
44.6	vi) Stairs, (excluding landings) except spiral-staircases	M2	25	566.00	18%	16,697.00

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
45.0	Supply of Steel reinforcement for R.C.C. including straightening, cutting, bending, placing in position and binding all complete at all levels					
45.1	Thermo Mechanically Treated Bars of Fe- 500D grade or more, conforming to IS1786	KG	145830	75.95	18%	1,30,69,430.43
46.0	Add for plaster drip course/groove in plastered surface or moulding to all type of RCC projections	M	70	53.57	18%	4,424.88
47.0	Providing and laying in position ready mixed/ machine batched & machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement. Including admixtures in recommended proportions as per IS 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Less cement used as per design mix (if any) will be recoverable separately. No extra payment against extra cement if used.					
47.1	i) M-25 grade reinforced cement concrete UP TO PLINTH LEVEL	M3	1951	7,273.17	18%	1,67,44,146.51
47.2	ii) M-25 grade reinforced cement concrete ABOVE PLINTH & UP TO FLOOR 5 LEVEL	M3	180	8,549.64	18%	18,15,943.54
48.0	Providing and laying dry stone hard rubble Soling (average 230 mm thickover an area) under floor, ramps, walls, foundations, trenches etc. &for similar situations at plinth level / below plinth level includinglaying in regularlines, levels, interstices filled with smallerstones/ chips of appropriate size and sand consolidated with copiouswatering as specified & finished to the required levels etc.All work complete as per directions of SiteEngineer / Engineer InCharge"	M2	600	654.33	18%	4,63,265.64
49.0	Providing and laying Brick work with common burnt clay F.P.S (non Modular) bricks of class designation 7.5 in foundation & plinth					
49.1	i) Brick work in Cement mortar 1:4 (1 cement: 4 coarse sand) IN FOUNDATION AND PLINTH	M3	94.00	5,798.90	18%	6,43,213.99
49.2	ii) Brick work in Cement mortar 1:4 (1 cement: 4 coarse sand) in superstructure in all shapes & sizes in superstructure ABOVE PLINTH & UP TO FLOOR V LEVEL	M3	165.00	7,102.14	18%	13,82,786.66
49.3	iii) Half brick masonry with common burnt clay F.P.S.(non modular) brick of class designation 7.5 in Cement mortar 1:4 (1 cement:4 coarse sand) in superstructure providing and placing in position 2 Nos. 6mm dia. M.S. bars at every third course of half brick masonry ABOVE PLINTH level & UP TO FLOOR V LEVEL	M2	40.00	920.54	18%	43,449.49

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
50.0	Providing and fixing 18mm thick gang saw cut mirror polished premoulded and prepolished, machine cut for kitchen platforms, vanity counters, sills, facias, Pump Island & similar locations of required size, approved shade, colour and texture laid over 20mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding & polishing to edge to give high gloss finish etc. complete at all levels.					
50.1	i) Granite of any colour and shade having Area of slab upto 0.50 sqm	M2	32.00	3,835.48	18%	1,44,827.72
50.2	ii) Granite of any colour and shade having Area of slab over 0.50 sqm	M2	12.00	3,644.77	18%	51,609.94
51.0	52 mm thick cement concrete flooring with concrete hardener topping under layer 40 mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) and top layer 12 mm thick cement hardener consisting of mix 1:2 (1 cement hardener mix : 2 graded stone aggregate 6 mm nominal size) by volume, hardening compound is mixed @2 litre per 50kg of cement or as per manufacturers specifications. This includes cost of cement slurry, 2 mm thick PVC strip at desired spacing, cost of nosing in steps etc. complete.	M2	100.00	716.19	18%	84,510.42
52.0	18mm thick Cement plaster skirting with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement.	M2	4.00	473.97	18%	2,237.14
53.0	25mm Thick Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete. with base of cement mortar 1 : 4 (1 cement : 4 coarse sand)	M2	40.00	1,393.14	18%	65,756.21
54.0	Kota stone slabs 20 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement 3 coarse sand) jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	M2	20.00	1,646.16	18%	38,849.38
55.0	Providing & fixing 1st quality ceramic glazed wall tiles conforming to IS : 15622 (minimum thickness of 5 mm) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge in skirting, risers of steps and dados over 12 mm thick bed of cement Mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm including pointing in white cement mixed with pigment of matching shade.	M2	120.00	937.01	18%	1,32,680.62
56.0	Providing & laying Ceramic Glazed floor tiles 300x300 mm or more (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 15622 of approved make in colours White, Ivory, Grey, Fume Red Brown, laid on 20mm thick cement mortar 1:4 (1 Cement : 4 Coarse sand) jointing with grey cement slurry @ 3.3kg/sqm including pointing the joints with white cement and matching pigments etc. complete.	M2	35.00	842.97	18%	34,814.66
57.0	Providing & laying vitrified floor tile in different sizes (thickness as per manufacturer) with water absorption's less than 0.08% and conforming to IS : 15622 of approved make in all colours and shades, laid on 20mm thick cement mortar as specified with coarse sand jointing with grey cement slurry @ 3.3kg/sqm including grouting the joints with white cement and matching pigments etc. complete for flooring/skirting as specified					
57.1	i) Flooring with size of Tiles 60x60Cm or higher in cement mortar 1:4	M2	360.00	1,364.68	18%	5,79,716.06
57.2	ii) Skirting with size of Tiles 60x60Cm or higher in Cement mortar 1:3	M2	10.00	1,405.88	18%	16,589.38

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
58.0	"ACID / ALKALI TILES-Providing and fixing with 10 mm thick acid and/oralkali resistant tiles of approved make and colour using acid and/oralkali resisting mortar bedding, and joints filled with acid and / or alkali resisting cement as per IS : 4457, complete as per the directionof Site Engineer / Engineer In Charge.All work complete as per directions of Site Engineer / Engineer InCharge"					
58.1	a. FOOR TILE - Flooring Tiles with size up to 60 x 60 CM in 10 mm thick cement mortar 1:4	M2	37.00	1,231.39	18%	53,762.49
58.2	b. DADO/SKIRTING - Skirting/ Dado Tiles with size up to 60 x 60 CM in 12mm thick cement mortar 1:4	M2	55.00	1,331.19	18%	86,394.23
59.0	Providing wood work in frames of doors , windows, clerestory windows & other frames, wrought framed and fixed in position with hold fast lugs or with dash fasteners of required dia & length.					
59.1	Second class teak wood	M3	0.50	1,18,395.37	18%	69,853.27
60.0	Providing & fixing ISI mark flush door shutters conforming to IS:2202 (Part I) decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 3 ply veneering with vertical grains/cross bands & face veneers on both faces of shutters					
60.1	30 mm thick including ISI marked Stainless Steel butt hinges with necessary screws	M2	15.00	2,506.77	18%	44,369.83
60.3	Extra for providing lipping with 2nd class teak wood battens 25mm minimum depth on all edges of flush door shutters (over all area of door shutters to be measured)	M2	15.00	365.06	18%	6,461.56
61.0	Providing and fixing aluminium sliding door bolts ISI marked anodised (anodic coating not less than grade AC 10 as per IS:1868) transparent or dyed to required colour or shade with nuts & screws etc. complete:			-		
61.1	300x16 mm	EA	7.00	233.86	18%	1,931.68
62.0	Providing & fixing aluminium tower bolts ISI marked anodised (anodic coating not less than grade AC 10 as per IS:1868) transparent or dyed to required colour or shade with necessary screws etc. complete :			-		
62.1	250x10 mm	EA	25.00	94.17	18%	2,778.02
63.0	Providing & fixing aluminium handles ISI marked anodised (anodic coating not less than grade AC10 as per IS:1868) transparent or dyed to required colour or shade with necessary screws etc. complete :			-		
63.1	125 mm	EA	20.00	54.25	18%	1,280.30
64.0	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS:1285, fixed with rawl plugs and screws or with fixing clips, or with expansion hold fasteners including necessary filling up of gaps at junctions,at top, bottom & sides with with required EPDM rubber/neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing/panelling, C.P. brass/stainless steel screws including fixing all complete as per drawing & the directions of Engineer-in-charge. (Cost of glazing or panels to be paid for separately)			-		

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
64.1	i) Fixed Glazing with Powder coated aluminium (minimum thickness of powder coating 50 micron) sections	KG	120.00	414.99	18%	58,762.58
64.2	ii) For shutters of doors, windows & ventilators with Powder coated aluminium sections including providing fixing hinges/ pivots & making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately)	KG	800.00	496.88	18%	4,69,054.72
65.0	Providing and fixing 12mm thick prelaminated particle board flat pressed three layer or graded wood particle board conforming to IS: 12823 Grade I Type II, in panelling fixed in aluminium doors, windows shutters and partition frames with C.P. brass/stainless steel screws etc. complete as per directions of Engineer in charge			-		
65.1	Pre-laminated particle board with decorative lamination on both sides	M2	10.00	952.11	18%	11,234.90
66.0	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge. (Cost of aluminium snap beading shall be paid in basic item):			-		
66.1	i) With float glass panes of 5.0 mm thickness (weight not less than 12.5kg/sqm)	M2	80.00	1,179.01	18%	1,11,298.54
66.2	ii) With float glass panes of 8.0 mm thickness (weight not less than 20kg/sqm)	M2	20.00	1,329.93	18%	31,386.35

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
67.0	Providing and fixing double action hydraulic floor spring of approved brand and manufacture IS : 6315 having brand logo embossed on the body/plate with double spring mechanism and door weight upto 125 kg, for doors, including cost of cutting floors, embedding in floors as required and making good the same matching to the existing floor finishing and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineer-in-charge.			-		
67.1	With stainless steel cover plate minimum 1.25 mm thickness	EA	15.00	2,194.05	18%	38,834.69
67.2	Filling the gap in between aluminium frame & adjacent RCC/ Brick/ Stone work by providing weather silicon sealant over backer rod of approved quality as per direction of Engineer in Charge complete Upto 5mm depth and 5mm width	M	400.00	72.25	18%	34,102.00
68.0	Providing and fixing aluminium round shape handle of outer dia 100mm with SS screws etc. complete as per direction of Engineer-in- charge			-		
68.1	Powder coated minimum thickness 50 micron aluminium	EA	10.00	76.03	18%	897.15
69.0	Providing and fixing Klippon Galvalume steel profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge) of Cold rolled steel confirming to IS:513-2008 of base metal thickness 0.50 mm, having Yield Stress of Min. 275 MPa. Steel surface shall have hot dip metallic coating of Al-Zinc alloy comprising 55% Alluminium, 43.5% Zinc and 1.5% Silicon as per the ASTM-A792M, with total mass of coating on both sides shall be 150 gms/sqm. The steel shall have organic coating with Silicon Modified Polyester (SMP) /Super Durable Polyester (SDP) paint on continuous coil coating line. The thickness of coating on top side shall be 20-25 Microns (i.e. 15-18 microns SMP /SDP paint over 5-7 microns epoxy primer) and back side 8-10 Microns SMP/SDP paint over epoxy primer. Total Coated Thickness (TCT) shall be 0.58 MM. Sheet shall have protective guard film of thickness of 25 microns minimum to avoid scratches while transportation and should be supplied in single length up to 6m or as desired by Engineer-in-charge.			-		
69.1	i) Profile Sheet for roofing	M2	450.00	962.84	18%	5,11,268.04
69.2	ii) Plain Sheet for Ridges (500 - 600mm).	M	25.00	378.60	18%	11,168.70
69.3	iii) Plain sheet for Flashings/ Aprons (Upto 600 mm)	M	25.00	335.22	18%	9,888.99
69.4	iv) Plain Sheet for Gutter (600 mm over all girth)	M	25.00	947.42	18%	27,948.89

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
70.0	Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies,terraces etc consisting of following operations: a) Applying a slurry coat of neat cement using 2.75 kg/sqm of cement admixed with water proofing compound conforming to IS. 2645 and approved by Engineer-in-charge over the RCC slab including adjoining walls upto 300 mm height including cleaning the surface before treatment. b) Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115 mm size with 50% of cement mortar 1:5 (1 cement : 5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge over 20 mm thick layer of cement mortar of mix 1:5 (1 cement :5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge to required slope and treating similarly the adjoining walls upto 300 mm height including rounding of junctions of walls and slabs c) After two days of proper curing applying a second coat of cement slurry using 2.75 kg/ sqm of cement admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge. d) Finishing the surface with 20 mm thick jointless cement mortar of mix 1:4 (1 cement :4 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge including laying glass fibre cloth of approved quality in top layer of plaster & finally finishing surface with trowel with neat cement slurry and making pattern of 300x300 mm square 3 mm deep. e) The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test. All above operations to be done in order & as directed and specified by the Engineer-in-Charge : with average thickness of 120 mm and minimum thickness at khurra as 65 mm.	M2	600.00	1,271.87	18%	9,00,483.96
71.0	Providing and fixing of toughened glass with suitable arrangement, all complete as per drawing, specification and direction of Engineer-in-Charge			-		
71.1	12 mm thick	M2	12.00	3,167.90	18%	44,857.46
72.0	Providing and fixing H type double tone SS Pull handle of GODREJ (7268) or equivalent make with all tools, tackles etc. all complete, as per specification and direction of Engineer-in-charge.	EA	3.00	2,056.56	18%	7,280.22
73.0	Supplying and fixing rolling shutters of approved make, made of required size M.S. laths interlocked together through their entire length,jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete including the cost of providing and fixing necessary 27.5cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS 4454 Part-I & M.S. top cover of required thickness for rolling shutters:- 80x1.25mm MS laths with1.25 mm thick top cover	M2	18.00	2,677.51	18%	56,870.31
74.0	Providing and fixing ball bearing for rolling shutters.	EA	2.00	381.83	18%	901.12

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
75.0	Extra for providing mechanical device chain and crank operation for operating rolling shutters.			-		
75.1	Exceeding 10.00 sqm and upto 16.80 sqm in the area	M2	18.00	1,006.35	18%	21,374.87
76.0	Structural steel work riveted, bolted or welded in single section fixed with or without connecting plate including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer and painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade with two or more coats over an under coat of suitable shade with ordinary paint of approved brand and manufacture all complete.	KG	16500.00	83.90	18%	16,33,533.00
77.0	Structural steel work riveted,bolted or welded in built up sections, trusses & framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primere and painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade with two or more coats over an under coat of suitable shade with ordinary paint of approved brand and manufacture all complete.	KG	11000.00	101.17	18%	13,13,186.60
78.0	Structural steel work in built up sections/ framed work in gratings, frames, guard bar, ladder, railings, brackets, gates and similar works including cutting,hoisting,fixing in position & applying a priming coat of approved steel primer and painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade with two or more coats over an under coat of suitable shade with ordinary paint of approved brand and manufacture all complete.	KG	25000.00	124.79	18%	36,81,305.00
79.0	Supplying & Fixing of following items for electrical safety in switch rooms/DG rooms etc					
79.1	6 mm thick chequered plate on cable trench inside swtich room, DG room, earthing pit including cutting, painting, lifting hooks, etc	M2	95.00	3,414.14	18%	3,82,725.09
80.0	Making khurras 45x45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) over the P.V.C. sheet 1mx1mx400micron, finished with 12mm cement plaster 1:3 (1 cement : 3 coarse sand) and a coat of neat cement rounding the edge sand making and finishing the outlet complete.	EA	8.00	221.95	18%	2,095.21
80.1	Providing and fixing Heat Resistant Terrace Tiles (300 mm x 300 mm x 20 mm) with SRI(solar refractive index) > 78,solar reflection >0.70 & initial emittance >0.75 on waterproof and sloped surface of terrace, laid on 20 mm thick cement sand mortar in the ratio of 1:4 (1 cement : 4 coarse sand) and grouting the joints with mix of white cement & marble powder in ratio of 1:1, including rubbing and polishing of the surface upto 3 cuts complete,including providing skirting upto 150mm height along the parapet walls in the same manner.	M2	610.00	1,249.68	18%	8,99,519.66

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
81.0	Providing & Fixing 15mm thick densified tegular edged eco friendly light weight calcium silicate false ceiling tiles of approved texture spintone/cosmos / Hexa or equivalent) of size 595 x 595 mm in true horizontal level suspended on inter locking metal grid of hot dipped galvanised steel sections (galvanising @ 120 grams per sqm including both side) consisting of main 'T' runner suitably spaced at joints to get required length and of size 24x38mm made from 0.33mm thick (minimum) sheet, spaced 1200mm centre to centre, and cross "T" of size 24x28mm made out of 0.33mm (Minimum) sheet, 1200mm long spaced between main'T' at 600mm centre to centre to form a grid of 1200x600mm and secondary cross 'T' of length 600mm and size 24 x28mm made of 0.33mm thick (Minimum) sheet to be inter locked at middle of the 1200x 600mm panel to from grid of size 600x600mm resting on periphery walls / partitions on Perimeter wall angle pre- coated steel of size(24x24X3000mm made of 0.40mm thick (minimum) sheet with the help of rawl plugs at 450mm centre to centre with 25mm long dry wall screws @ 230mm interval and laying 15mm thick densified edges calcium silicate ceiling tiles of approved texture (Spintone/Cosmos/hexa) in the grid including,cutting/ making opening for services like diffusers, grills,light fittings, fixtures, smoke detectors etc., wherever required, Main 'T' runners to be suspended from ceiling using G.I. slotted cleats of size 25x35x1.6mm ceiling with 12.5 mm dia and 50mm long dash fasteners, 4mm G.I. adjustable rods with galvanised steel level clips of size 85x30x0.8 mm spaced at 1200mm centre to centre along main'T', bottom exposed with 24mm of all T-sections shall be pre-painted with polyester baked paint for all heights,as per specifications,drawings & as directed by engineer-in-charge. Note :- Only calcium silicate false ceiling area will be measured from wall to wall. No deduction shall be made for exposed frames /opening (cut outs) having area less than 0.30 sqm.The calcium silicate tile shall have NRC value of 0.50(Minimum), light reflection > 85%, non - combustible as per B.S. 476 part IV, 100% humidity resistance & also having thermal conductivity<0.043 w/mK	M2	100.00	1,495.10	18%	1,76,421.80
82.0	Providing and laying cement plaster on surfaces with Coarse sand including curing etc.			-		
82.1	i) 12mm Cement plaster of mix 1:4 (1 cement: 4 coarse sand)	M2	1650.00	251.14	18%	4,88,969.58
82.2	ii) 15mm cement plaster of mix 1:4 (1 cement: 4 coarse sand) on rough side of half or single brick wall	M2	560.00	290.07	18%	1,91,678.26
83.0	Providing and laying 6mm thick cement plaster on surfaces with fine sand including curing etc.			-		
83.1	6mm thick plaster of mix 1:3 (1 cement: 3 fine sand)	M2	600.00	206.77	18%	1,46,393.16
84.0	Providing and fixing 150 mm wide Chicken Wire mesh between junctions of column/beam and walls, fixed with U nails 150 mm centre to centre before plastering the junction.	M2	120.00	61.29	18%	8,678.66
85.0	Providing and applying plaster of Paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete	M2	1650.00	178.89	18%	3,48,298.83
86.0	Finishing walls with Acrylic Smooth exterior paint of required shade (2 or more coat applied @ 1.67 ltr/10 sqm over & including priming coat of exterior Primer applied @ 2.20kg/10 sqm)	M2	560.00	149.79	18%	98,981.23
87.0	Finishing walls with Deluxe Multi surface paint system for interiors & exteriors using Primer as per manufacturers specifications with two or more coats applied on wall @ 1.25 ltr/10 sqm. over and including one coat of Special primer applied @ 0.75 ltr / 10sqm	M2	1650.00	129.33	18%	2,51,805.51

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
88.0	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement in position to the required line, level and curvature jointed with cement mortar 1:3 (1 cement:3 coarse sand) including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm) including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment) (Precast C.C. kerb stone shall be approved by Engineer-in-charge.	M3	6.00	7,617.72	18%	53,933.46
89.0	Providing & laying design mix cement concrete of M-30 grade , in roads/ driveways, using cement content as per design mix, using coarse sand and graded stone aggregate of 40 mm nominal size in appropriate proportions as/approved & specified design criteria, providing dowel bars with sleeve/ tie bars wherever reqd, laying at site, spreading & compacting, mechanically by using needle & surface vibrators, vacuum dewatering, leveling to required slope /camber finishing with required texture, including steel form work with sturdy MS.channel sections, curing, making provision for contraction/expansion, construction and longitudinal joints (10 mm wide x 50 mm deep) by groove cutting machine, providing and filling joints with approved joint filler and sealants, complete all as/direction of Engineer- in-Charge (Item of Joint fillers, sealants, Dowel bar with sleeve / tie bars to be paid separately). Note:- Cement content considered in M-30 is @ 350 kg/cum. Less cement used as per design mix (if any) will be recoverable separately. No extra payment against extra cement if used shall be payable.			-		
89.1	Cement concrete prepared with batch mixing machine	M3	600.00	7,959.85	18%	56,35,573.80
90.0	Construction of granular sub-base by providing close graded material conforming to specifications, mixing in a mechanical mixer plant at Optimum Moisture Content, carriage of mixed material by tippers to work site, for all lead and lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface & compacting with vibratory power roller to achieve the desired density, complete as per specification & direction of Engineer-in-charge.					
90.1	With material conforming to grade-I (size 75 mm to .075 mm) having CBR value - 30, Thickness as desired	M3	600.00	2,289.73	18%	16,21,128.84
91.0	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS:13592 Type A including jointing with seal ring conforming to IS : 5382 leaving 10 mm gap for thermal expansion, Single socketed pipes.			-		
91.1	i) 75 mm diameter	M	120.00	182.89	18%	25,897.22
91.2	ii) 110 mm diameter	M	120.00	277.43	18%	39,284.09
92.0	Providing & fixing on wall face unplasticised - PVC moulded fittings/ accessories for unplasticised Rigid PVC rain water pipes conforming to IS:13592 Type A including jointing with seal ring conforming to IS: 5382 leaving 10 mm gap for thermal expansion.			-		
92.1	i) 75mm Coupler	EA	8.00	70.79	18%	668.26
92.2	ii) 110mm Coupler	EA	22.00	107.14	18%	2,781.35
92.3	iii) 87.5° Bend of 75 mm	EA	4.00	81.76	18%	385.91
92.4	iv) 87.5° Bend of 110 mm	EA	16.00	118.10	18%	2,229.73

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
93.0	Providing and fixing white vitreous china pedestal type water closet (European type) with seat and lid, 10 litre low level white vitreous china flushing cistern & C.P.flush bend with fittings & C.I.brackets, 40mm flush bend, overflow arrangement with specials of standard make and mosquito proof coupling of approved municipal design complete including painting of fittings and brackets, cutting and making good the walls and floors wherever required :			-		
93.1	W.C. pan with ISI marked white solid plastic seat and lid	EA	4.00	6,079.70	18%	28,696.18
94.0	Providing and fixing white vitreous china flat back or wall corner type lipped front urinal basin of 430x260x350mm and 340x410x 265 mm sizes respectively with automatic flushing cistern with standard flush pipe and C.P. brass spreaders with brass unions and G.I clamps complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required :			-		
94.1	Range of three urinal basins with 10litre white P.V.C. automatic flushing cistern	EA	1.00	9,645.03	18%	11,381.14
94.2	Providing and fixing first quality (heavy duty) type glazed vitreous china P or S trap Wall hung coloured water closet, seat cover, CP nuts, bolts and other necessary fittings all complete and as per specification and direction of Engineer-in-charge.	EA	1.00	13,724.45	18%	16,194.85
95.0	Providing and fixing wash basin with C.I. brackets, 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever required :			-		
95.1	White Vitreous China Wash basin size 550x400 mm with a pair of 15 mm C.P. brass pillar taps	EA	5.00	2,589.13	18%	15,275.87
96.0	Providing and fixing Chrome Finish SS Health faucet with 8mm dia, 1 meter long SS braided rubber hose pipe and wall hook with N.R.V, Jaguar make cat. No. ALD-577 or equivalent all complete, as per specification and direction of Engineer-in-charge.	EA	5.00	1,147.39	18%	6,769.60
97.0	Providing and fixing of SS single Soap tray with all fittings and all complete, as per specification and direction of Engineer-in-charge.	EA	5.00	330.62	18%	1,950.66
98.0	Providing and fixing of Automatic Soap/ Sanitizer Dispenser with all fittings and all complete, as per specification and direction of Engineer-in-charge.	EA	4.00	1,447.87	18%	6,833.95
99.0	Providing and fixing 450 mm long CP Brass towel rail complete with brackets fixed to wooden/PVC cleats with SS screws with concealed fittings arrangement of Make: Cera F5007104 or equivalent all complete and as per direction of Engineer-in-charge.	EA	4.00	1,361.33	18%	6,425.48
100.0	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS 13983 with C.I. brackets and stainless steel plug 40 mm including painting of fittings and brackets, cutting and making good the walls wherever required, Kitchen Sink with Drain board			-		
100.1	i) Sink with drain board 510x1040mm bowl depth 250mm	EA	1.00	4,689.09	18%	5,533.13
100.2	Providing and fixing G.I. inlet connection for flush pipe connecting with W.C. pan.	EA	4.00	105.59	18%	498.38
101.0	Providing & fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete			-		
101.1	i) With Flexible pipe of 32 mm dia	EA	6.00	91.95	18%	651.01
101.2	ii) With Flexible pipe of 40 mm dia	EA	1.00	91.95	18%	108.50

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
101.3	Providing and fixing 100 mm sand cast Iron grating for gully trap.	EA	8.00	40.56	18%	382.89
102.0	Providing & fixing mirror of superior glass (of approved quality) & of required shape and size with plastic moulded frame of approved make and shade with 6 mm thick hard board backing :			-		
102.1	Rectangular shape 1500x450 mm	EA	4.00	1,624.78	18%	7,668.96
103.0	Providing and fixing M.S. stays and clamps for pipes of diameter :			-		
103.1	100 mm	EA	32.00	115.05	18%	4,344.29
104.0	Boring/drilling bore well of required dia for casing/ strainer pipe by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer-in-charge,			-		
104.1	i) 350mm dia in all types of soil up to 90m depth below ground	M	90.00	509.57	18%	54,116.33
104.2	ii) 350mm dia in all types of soil 90m to 150m depth	M	60.00	603.93	18%	42,758.24
104.3	iii) 350mm dia in all types of soil above 150m	M	100.00	1,117.44	18%	1,31,857.92
105.0	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticised PVC medium well casing (CM) pipe of required dia, conforming to IS:12818, including required hire & labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer-in-charge.			-		
105.1	200 mm nominal size dia	M	60.00	969.53	18%	68,642.72
106.0	Supply and packing Gravel in tubewell construction in accordance with IS: 4097, including providing gravel fine/ medium/ coarse, in required grading & sizes as per actual requirement, all complete as per direction of Engineer-in-charge.	M3	12.00	1,362.09	18%	19,287.19
107.0	Providing and fixing suitable size threaded mild steel cap or spot welded plate to the top of bore well housing/ casing pipe, removable as per requirement, all complete for borewell of:			-		
107.1	200 mm dia	EA	1.00	255.51	18%	301.50
108.0	Providing and fixing M.S. clamp of required dia to the top of casing / housing pipe of tubewell as per IS: 2800 (part I), including necessary bolts & nuts of required size complete			-		
108.1	200 mm dia clamp	EA	1.00	1,538.03	18%	1,814.88
109.0	Providing and fixing Bail plug/ Bottom plug of required dia to the bottom of pipe assembly of tubewell as per IS:2800 (part I).			-		
109.1	200 mm dia	EA	1.00	279.88	18%	330.26
110.0	Supply and fixing High Density Polymer Water pipe as per IS 4984, PE-63 grade, 10Kg/sqcm rating for borewell including all fittings etc			-		
110.1	32mm dia HDPE pipe for borewell upto a depth of 65m	M	65.00	93.58	18%	7,177.59
111.0	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall			-		

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
111.1	i) 15 mm nominal outer dia Pipes	M	20.00	219.68	18%	5,184.45
111.2	ii) 25 mm nominal outer dia Pipes	M	60.00	335.76	18%	23,771.81
111.3	iii) 32 mm nominal outer dia Pipes	M	75.00	437.03	18%	38,677.16
112.0	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge. Concealed work including cutting chases and making good the walls etc.			-		
112.1	i) 15 mm nominal outer dia Pipes	M	180.00	372.56	18%	79,131.74
112.2	ii) 25 mm nominal outer dia Pipes	M	40.00	511.07	18%	24,122.50
113.0	Providing and fixing brass bib cock of approved quality :			-		
113.1	15 mm nominal bore	EA	8.00	275.15	18%	2,597.42
114.0	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :			-		
114.1	i) 25 mm nominal bore	EA	4.00	452.13	18%	2,134.05
114.2	ii) 32 mm nominal bore.	EA	4.00	528.62	18%	2,495.09

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
115.0	Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete :			-		
115.1	15 mm nominal bore	EA	2.00	308.04	18%	726.97
116.0	Providing and fixing unplasticised PVC connection pipe with brass unions :			-		
116.1	45 cm length, 15mm nominal bore	EA	12.00	75.48	18%	1,068.80
117.0	Providing and placing on terrace (at all floor levels) polyethylene water storage tank IS : 12701 marked with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank	L	2000.00	8.00	18%	18,880.00
118.0	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 gms. - 15 mm nominal bore	EA	6.00	502.33	18%	3,556.50
119.0	Providing and fixing C.P. brass angle valve for basin mixer & geyser points of approved quality conforming to IS:8931 - 15mm nominal bore	EA	12.00	483.83	18%	6,851.03
120.0	Providing and fixing square-mouth S.W. gully trap class SP-1 complete with C.I. grating brick masonry chamber with water tight C.I.cover with frame of 300 x300 mm size(inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design :			-		
120.1	150x100 mm size P type with Sewer bricks conforming to IS : 4885	EA	3.00	2,111.25	18%	7,473.83
121.0	Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete : Light Duty			-		
121.1	300 mm dia. R.C.C. pipe	M	60.00	785.45	18%	55,609.86
122.0	Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand) R.C.C. top slab with 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand : 8 graded stone aggregate 40mm nominal size) inside plastering 12mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement complete as per standard design :			-		
122.1	i) Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg) : with Common burnt clay bricks of class designation 7.5	EA	2.00	9,917.63	18%	23,405.61
122.2	ii) Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg) : with Sewer bricks conforming to IS : 4885	EA	2.00	9,927.26	18%	23,428.33
123.0	Extra for depth for manholes Size 90x80 cm, With common burnt clay bricks of class designation 7.5	M	1.00	6,823.62	18%	8,051.87
124.0	Extra for depth for manholes Size 90x80 cm, With Sewer bricks conforming to IS : 4885	M	1.00	6,851.64	18%	8,084.94
125.0	Making soak pit 2.5 m diameter 3.0 metre deep with 45 x 45 cm dry brick honey comb shaft with bricks and SW drain pipe 100 mm diameter, 1.8 m long complete as per standard design with common burnt clay F.P.S. (non modular) bricks of class designation 7.5	EA	1.00	22,989.83	18%	27,128.00

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
126.0	Providing and fixing G.I. chain link fabric fencing of required width in mesh size 50x50mm including strengthening with 2mm dia GI wire or nuts, bolts and washers as required complete as per the direction of Engineer-in-charge using hot dipped galvanised wire of 4mm dia (The rate for civil works for excavation, brick masonry, PCC shall be paid separately)	M2	800.00	725.01	18%	6,84,409.44
127.0	Supply, Installation, Testing and Commissioning of cylindrical ferrocement tanks as septic tank, all complete of following capacity excluding excavation & civil works, as per drawing, specification and direction of Engineer-in-charge.			-		
127.1	Capacity above 6 KL- 12 KL	L	9000.00	13.63	18%	1,44,750.60
128.0	SUPPLY AND LAYING OF FLAT CABLES			-		
128.1	3core, 4 sq.mm copper Flat Cable for submersible pump	M	150.00	176.47	18%	31,235.19
129.0	PROVIDING INTERNAL WIRING			-		
129.1	Wiring for light point/fan point/exhaust fan point/call bell point with 1.5 sq.mm FR PVC insulated copper conductor single core cable in surface / recessed medium class PVC conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm. FR PVC insulated copper conductor single core cable etc as required.	EA	150.00	741.83	18%	1,31,303.91
130.0	Supplying, drawing sub-main/power wiring with PVC insulated Copper 1100 V grade FRLS type through heavy duty rigid PVC conduit either on wall or in concealed. The job include terminations at both ends through proper jointing materials all complete for the following Make of Insulated wires shall be as per approved make			-		
130.1	i) 2 x 1.5 sq mm + 1 x 1.5 sq mm earth wire	M	200.00	138.33	18%	32,645.88
130.2	ii) 2 x 2.5 sq mm + 1 x 2.5 sq mm earth wire	M	160.00	158.22	18%	29,871.94
130.3	iii) 2 x 4 sq mm + 1 x 4 sq mm earth wire	M	200.00	189.48	18%	44,717.28
131.0	SWITCHES, FUSES, MCBS, ELCBS ETC Supply and fixing of Modular switch frame with inner and outer face plates and accessories as per following details of approved including flush metal boxes/surface mounting boxes, plates, etc. all complete as per manufacturer's specification and direction of Engineer In-charge.			-		
131.1	i) 1or 2 module frame	EA	15.00	230.22	18%	4,074.89
131.2	ii) 6 module frame	EA	20.00	315.49	18%	7,445.56
131.3	iii) 8 module frame	EA	12.00	362.86	18%	5,138.10
131.4	iv) 12 module frame	EA	16.00	411.19	18%	7,763.27
131.5	v) 6A Modular Switch	EA	160.00	263.95	18%	49,833.76
131.6	vi) 15 A Modular switch	EA	15.00	306.12	18%	5,418.32
131.7	vii) 6A, 3 Pin Modular Socket	EA	35.00	301.90	18%	12,468.47
131.8	viii) 15 A 6 Pin Modular socket	EA	15.00	345.28	18%	6,111.46
131.9	ix 2 Pin Telephone Modular Socket	EA	20.00	294.68	18%	6,954.45
131.10	x) Fan Regulator of stepped modular type	EA	22.00	544.36	18%	14,131.59
131.11	xi) Modular type TV/cable sockets.	EA	2.00	339.53	18%	801.29

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
132.0	Supply & fixing 20A, 240V metal clad industrial type socket outlet with 2 poles and earth, metal enclosed plug top along with 20A (10kA) SPMCB (D- Curve) in steel enclosure on surface/ recess with chained metallic cover for the socket and complete with interconnection testing etc as required.	EA	8.00	1,167.21	18%	11,018.46
133.0	Providing & fixing circular/ Hexagonal cast iron or M.S. sheet box for ceiling fan clamp of internal dia 140mm, 73mm height, top lid of 1.5mm thick MS sheet with its top surface hacked for proper bonding, top lid shall be screwed into the cast iron/ M.S. sheet box by means of 3.3mm dia. round headed screws, one lock at the corners. Clamp shall be made of 12mm dia M.S. bar bent to shape as per standard drawing.	EA	22.00	156.65	18%	4,066.63
134.0	Supplying and fixing of MCB + ELCB (RCBO) with necessary inter connections on existing DB, Panel board.	EA		-		
134.1	40 A 2 pole 100-300mA sensitivity	EA	8.00	2,008.44	18%	18,959.67
135.0	Supply and installation of MCB distribution board having Double door complete with tinned cu bus bar, neutral bus bar, earth bar, din bar, interconnection, earthing etc. without incoming isolator and MCBs			-		
135.1	i) 2+8 way SPN	EA	1.00	1,667.46	18%	1,967.60
135.2	ii) 6 way (4+18) TPN	EA	1.00	3,498.81	18%	4,128.60
135.3	iii) 8 way (4+24) TPN	EA	2.00	4,359.05	18%	10,287.36
136.0	MINIATURE CIRCUIT BREAKERS (MCB) Supplying & fixing of Miniature Circuit Breakers as per approved make of 10KA Breaking capacity of following ratings			-		
136.1	i) 6A to 32A SPN MCB	EA	40.00	515.39	18%	24,326.41
136.2	ii) 6A to 32A DP MCB	EA	25.00	526.77	18%	15,539.72
136.3	iii) 6A to 32A TPN MCB	EA	8.00	1,034.58	18%	9,766.44
136.4	iv) 40A FP MCB	EA	2.00	788.26	18%	1,860.29
136.5	v) 63A FP MCB	EA	2.00	794.88	18%	1,875.92
137.0	Supply and fixing 4-pole MCCB of breaking capacity 16 KA in existing panel board.			-		
137.1	i) 63 Amp	EA	2.00	4,108.33	18%	9,695.66
137.2	ii) 100Amp	EA	2.00	4,108.33	18%	9,695.66

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
138.0	OCTAGONAL POLES Supply & Fixing of Octagonal Poles of following type (Civil job shall be paid separately) :					
138.1	i) S/E of 7 Meter high galvanised Octagonal pole with top 70mm (A/F), bottom 130mm (A/F) made up of 3 mm thick plate having a base plate of size 220 x 220 x 12 with single arm 1500mm long bracket arm made up of 48 O.D. pipe with EN 8 grade galvanised foundation bolts and anchor plate on suitable concrete foundation as per standard drawings enclosed herein(Civil & Electrical works shall be paid separately) having fixing arrangement for mounting 2 Nos. of 250W Metal halide luminaries (on opposite sides)	EA	35.00	10,898.53	18%	4,50,109.29
138.2	ii) Supply and fixing of 100 W LED (Light Emitting Diode) light fixture with fittings and accessories for Yard lighting purpose having IP66 protection class with Pressure Die Cast LM6/ADC12/LM24 housing and with toughened glass or UV stabilized polycarbonate cover type of approved make or equivalent as per direction of Engineer-in-charge. The LED driver shall have an in-built high voltage cutoff ≥ 290 V with power factor of complete fitting greater than 0.90. CCT (Correlated Colour temperature) shall be in the range of 5665 K \pm 355 K as per ANSI standard C78.377, CRI (Colour rendering index) should include all colour range from R1 to R15 and > 70 for outdoor luminaire. LED efficacy shall be greater than 140 lumens/watt @ 350mA drive current. The minimum system lumen efficacy of the luminaire shall be 100 Lumens per Watt. The Surge Protection Device (SPD) should be series type with fail safe, surge protection for minimum 3kV shall be provided. Supply of complete fitting with all accessories as per specification attached and as per direction of engineer in charge. Each lot of fittings shall accompany test certificates LM79/ IS:16106 and reference/ batch nos of LEDs and fittings for verification at site. The supply of LED lighting shall be covered by a warranty of minimum 60 months from the date of supply of the lighting and the LED light fitting shall be complete in all respects including LED, LED Driver, Electronic circuitry, Luminaire etc.	EA	35.00	7,163.38	18%	2,95,847.59
139.0	Supply & fixing recessed mounted Discrete LED (Light Emitting Diode) Light fittings of 80 Watt, having IP65 protection class with Pressure Die Cast Aluminium housing & with Polycarbonate diffuser of approved make or equivalent as per direction of Engineer in charge. The LED shall be operating under voltage range of 140-270V with power factor more than 0.9. CCT(Correlated Colour temperature) shall be 5700 Kelvin (5665 K \pm 355 K), CRI (Colour rendering index) not less than 65. LED efficacy should be minimum 120 lumens/watt. The driver shall be of constant volt & constant current type with internal surge protection. Each lot of Fittings shall have serial numbers and accompany LM79 / IS 16106 test reports and reference/batch nos of LEDs and fittings for verification at site. The LED light fitting shall be complete in all respects including LED, LED Driver, Electronic circuitry, Luminaire etc. and the fitting shall have suitable arrangement for fixing it in the Canopy. The supply of LED lighting shall be covered by a warranty of at least 72 months from the date of supply of the lighting.	EA	10.00	7,404.33	18%	87,371.09

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
140.0	SUBMERSIBLE PUMP Supply,erection,testing & Commissioning of foll.submersible water pump with starter panel board, non return valve, gate valve etc. complete.			-		
140.1	33 LPM 177m head	EA	1.00	36,861.07	18%	43,496.06
141.0	Providing and fixing of 63 Amp ELCB 3 phase (30mA Sensitivity), all complete and as per direction of Engineer-in-charge.	EA	1.00	1,277.14	18%	1,507.03
142.0	CEILING FANS Supply & fixing of ceiling fan for inside of the sales building of following type:			-		
142.1	1200 mm sweep	EA	22.00	2,092.44	18%	54,319.74
143.0	EXHAUST FANS Supply and fixing of exhaust fan including electrical wiring all shall be with per specification and direction of site In charge. The fans shall be with louvers / shutters. (The job does not include making suitable cut out in the wall for fixing the fan)			-		
143.1	i) 9" dia light duty, make Khaitan or equivalent	EA	4.00	1,585.88	18%	7,485.35
143.2	ii) 12" heavy duty, make GEC or equivalent	EA	4.00	1,865.73	18%	8,806.25
144.0	Supply and Fixing of Discrete LED (Light Emitting Diode) Tube lights of 18 Watt, having IP65 protection class with Pressure Die Cast Aluminium housing & with Polycarbonate diffuser of approved make or equivalent as per direction of Engineer in charge. The LED shall be operating under voltage range of 140-270V with power factor more than 0.9. CCT(Correlated Colour temperature) shall be 5700 Kelvin (5665 K +/- 355 K), CRI (Colour rendering index) not less than 65. LED efficacy should be minimum 100 lumens/watt. The driver shall be of constant volt & constant current type with internal surge protection. Each lot of Fittings shall have serial numbers and accompany LM79 / IS 16106 test reports and reference/batch nos of LEDs and fittings for verification at site. The supply of LED lighting shall be covered by a warranty of at least 72 months from the date of supply of the lighting and the LED light fitting shall be complete in all respects including LED, LED Driver, Electronic circuitory, Luminarie etc.	EA	35.00	542.61	18%	22,409.79
145.0	Supply and Fixing of Discrete LED (Light Emitting Diode) Tube lights of 8 Watt, having IP20 protection class with Pressure Die Cast Aluminium housing & with Polycarbonate diffuser of approved make or equivalent as per direction of Engineer in charge. The LED shall be operating under voltage range of 140-270V with power factor more than 0.9. CCT(Correlated Colour temperature) shall be 5700 Kelvin (5665 K +/- 355 K), CRI (Colour rendering index) not less than 65. LED efficacy should be minimum 100 lumens/watt. The driver shall be of constant volt & constant current type with internal surge protection. Each lot of Fittings shall have serial numbers & accompany LM79 / IS 16106 test reports & reference/batch nos of LEDs & fittings for verification at site. The supply of LED lighting shall be covered by a warranty of at least 72 months from the date of supply of the lighting and the LED light fitting shall be complete in all respects including LED, LED Driver, Electronic circuitory, Luminarie etc.	EA	5.00	423.82	18%	2,500.54

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
146.0	Supply and Fixing of Indoor Recess mounted Discrete LED (Light Emitting Diode) Light fittings, 600mm x 600mm suitable for False Ceiling, having IP 20 protection class with Pressure Die cast Aluminium housing and with Polycarbonate diffuser of approved make or equivalent as per direction of Engineer in charge. High Efficiency Translucence(HET) diffuser.Colour Rendering Index CRI>80, Ambient temp- 0 to 45 Deg Celsius, Driver efficiency >85%, THD < 10%, Powerfactor > 0.95, Surge protection-2 KV, Multistage Isolated Constant Current- Constant Voltage operated driver with range 140-270V AC and Safety Extra Low Voltage Safe level < 60V DC as per IEC standard.Luminaire lumen ≥ 3640 lm. The driver shall be of constant volt and constant current type with internal surge protection. Each lot of Fittings shall have serial numbers and accompany LM79/ IS 16106 test reports and reference/batch nos of LEDs and fittings for verification at site. The LED light fitting shall be complete in all respects including LED, Driver, Electronic circuitory, Luminarie etc. and the fitting shall have suitable arrangement for fixing it in the False Ceiling. The supply of LED lighting shall be covered by a warranty of at least 72 months from the date of supply of the lighting and the LED light fitting shall be complete in all respects including LED, LED Driver, Electronic circuitory, Luminarie etc			-		
146.1	31 watt	EA	18.00	1,468.99	18%	31,201.35
147.0	Supply and Fixing of Indoor Surface mounted Discrete LED (Light Emitting Diode) Light fittings of 31 Watt, 600mm X 600mm suitable for False Ceiling ,having IP 20 protection class with Pressure Die cast Aluminium housing and with Polycarbonate diffuser of approved make or equivalent as per direction of Engineer in charge. High Efficiency Translucence(HET) diffuser. Colour Rendering Index CRI>80, CCT (Correlated Colour temperature) shall be 5700 Kelvin (5665 K +/- 355 K), Ambient temp- 0 to 45 deg celsius, Driver efficiency >85%, THD < 10%, Powerfactor>0.95, Surge protection-2 kV, Multistage isolated Constant Current-Constant Voltage operated driver with range 140-270V AC and Safety Extra Low Voltage Safe level < 60V DC as per IEC standard.Luminaire lumen ≥ 3640 lm. The driver shall be of constant volt and constant current type with internal surgeprotection. Each lot of Fittings shall have serial numbers and accompany LM79 / IS 16106 test reports and reference /batch nos of LEDs and fittings for verification at site. The LED light fitting shall be complete in all respects including LED, LED Driver, Electronic circuitory, Luminarie etc. and the fitting shall have suitable arrangement for fixing it in the False Ceiling. The supply of LED lighting shall be covered by a warranty of at least 72 months from the date of supply of the lighting and the LED light fitting shall be complete in all respects including LED, LED Driver, Electronic circuitory, Luminarie etc			-		
147.1	31 watt	EA	10.00	1,579.39	18%	18,636.80

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
148.0	Supplying , Installation, Testing and Commissioning of Air Cooled Hi Wall split type Air conditioners complete with Indoor unit(IDU), Out door unit (ODU), surface / concealed copper Refrigerant piping with insulation (closed cell elastomeric nitrile rubber tubular pipe section) upto 3 Mtr (IDU to ODU), copper power cable upto 3.5 Mtr (IDU to ODU) i/c drain pipe R-32/R-410/ R-407 Green Refrigerant, wireless Remote control, suitable for working between 180- 260V with low & high voltage cutoff and 50 hz ,1 phase AC supply capable of performing cooling, dehumidification, air circulation of following capacity with Scroll / rotary compressor. The system shall be able to deliver 100% of the rated capacity upto 42 OC. Min 5 year Original Equipment Manufacturer (OEM warranty both compressor and Printed Circuit Board (PCB). Must comply : Electrical cable IS 694 or IS 9968 temperature sensing control IS /International Electrotechnical Commission (IEC) 60730, hermetic compressor IS 10617, heat exchanger IS 11329, capacitor IS 2993 and motor IS 12615. Complete as per CPWD specification and IS : 1391 Part II 2023. The system shall be able to operate up to 50 OC (out door ambient temperature).					
148.1	1.5 TR with 5 Star BEE Rating	EA	4.00	36,897.46	18%	1,74,156.00
148.2	2.0 TR with 5 Star BEE Rating	EA	4.00	48,640.68	18%	2,29,584.00
149.0	Fabrication, supply, placing & fixing of M-25 RCC cover for finished cable trench in Switchyard area - 350mm wide, 75mm thick with lifting arrangement, width as per trench.	M2	400.00	1,300.59	18%	6,13,878.48
150.0	Providing and spreading machine crushed stone aggregate / gravel of 20 mm / 40 mm size over prepared surface in switchyard area including leveling, dressing, spreading in layers to required thickness, watering and compacting complete as per technical specifications and direction of Engineer-in-Charge.	M3	795.00	1,206.44	18%	11,31,761.36
151.0	"DOOR FRAME FIRE RESISTANT-Providing and fixing fire resistant doorframe of section 143 x 57 mm having built in rebate made out of 16 SWGG.I. sheet(zinc coating not less than 120 gm/sqm) duly filled withvermuculite based concrete mix, suitable for mounting 60 minutes firerated door shutters. The frame is fitted with intumuscent fire sealstrip of size 10x4 mm (minimum) around the frame and fixing with dashfastener of approved size and make, including applying a coat ofapproved brand fire resistant primer etc.complete as per direction ofSite Engineer/Engineer-in-charge (Dash fastener to be paid for separately).All work complete as per directions of Site Engineer / Engineer InCharge."	M	30.00	1,188.73	18%	42,081.04
152.0	"DOOR SHUTTERS - GLAZED FIRE RESISTANT:Providing and fixing 50 mm thickglazed fire resistant door shutters of 60 minutes fire rating conformingto IS:3614 (Part-II), tested and certified as per laboratory approved byEngineer-in-charge, with suitable mounting on door frame, consisting ofvertical styles, lock\ rail, top rail 100 mmwide, bottom rail 200 mm wide, made out of 16 SWG G.I.sheet (zinc coating not less than 120 gm/m2) duly filled FR insulation material andfixing with necessary stainless steel ball bearing hinges of approvedmake, including applying a coat of approved fire resistant primer etc.all complete as per direction of Site Engineer/Engineer-in-charge(panneling to be paid for separately). All work complete as per directions of Site Engineer / Engineer InCharge."	M2	12.00	5,238.64	18%	74,179.14

SN	PARTICULARS	UNIT	QTY.	Unit rate in ₹	GST in %	Amount including GST in ₹
153.0	"GLAZE:Providing and fixing glazing in fire resistant door shutters, fixed panels, ventilators and partitions etc. with with clear fireresistant glass panes 6mm thick of approved brand, having minimum 60minutes fire resistance, G.I. beading of appropriate size made out of 20mm G.I. sheet (zinc coating not less than 120gm/sqm), fire resistant sealant, including applying a coat off fire resistant primer on G.I. beading etc., complete in all respect as per direction of Site Engineer/Engineer-in-charge All work complete as per directions of Site Engineer / Engineer InCharge."	M2	8.00	29,248.33	18%	2,76,104.24
	SUBTOTAL (B) INCLUDING GST					38,76,45,374.44
C	SECTION 3: COMPREHENSIVE OPERATION AND MAINTENANCE (O&M) FOR 5 YEARS					
1.0	Comprehensive Operation and Maintenance of the 220/33 kV Pooling Substation, Transmission lines and associated Power Evacuation System for a period of 5 (Five) years from the date of successful commissioning, including deployment of required manpower, routine and preventive maintenance, breakdown maintenance, supply of consumables, spares, tools and tackles, housekeeping, reporting, and compliance with applicable grid/CEA regulations, complete as per technical specifications and scope of work					
1.1	Operation and Maintenance for FIRST YEAR	LS	1.0	1,20,77,600.00	18%	1,42,51,568.00
1.2	Operation and Maintenance for SECOND YEAR	LS	1.0	1,27,20,128.32	18%	1,50,09,751.42
1.3	Operation and Maintenance for THIRD YEAR	LS	1.0	1,33,96,839.15	18%	1,58,08,270.19
1.4	Operation and Maintenance for FOURTH YEAR	LS	1.0	1,41,09,550.99	18%	1,66,49,270.17
1.5	Operation and Maintenance for FIFTH YEAR	LS	1.0	1,48,60,179.10	18%	1,75,35,011.34
	SUBTOTAL (C) INCLUDING GST					7,92,53,871.12
	TOTAL (A+B+C) INCLUDING GST					47,89,34,739.90