

PART A - CIVIL & ROAD WORK	
INTERNAL & EXTERNAL CIVIL WORK	
I	
1	Excavation in foundation in ordinary soil (Loam, clay or sand) including lift upto 1.50 M. and lead upto 30 M. and including filling watering and ramming of excavated earth into the trenches or into the space between the building and the sides of foundation trenches or into the plinth and removal and disposal of surplus earth as directed by the Engineer-in-charge upto a distance of 30 M. from the foundation trenches. (Where machine can not reach/move). As in item 251 above but excavation in soil mixed with Moorum, shingle, kankar requiring the use of special tools and plant such as pickaxes, sabbals etc.
2	Add to items (251-253 for every additional 30 M. (100 ft.) lead or part of 30 M (100 ft.) or for every additional 1.50 M. (5 ft.) lift or part of 1.50 M. (5 ft.)
3	Supplying and stacking of good earth at site including royalty and carriage upto 5 k m lead complete (earth measured in stacks will be reduced by 20% for payment).
4	Sand filling in plinth including supply of necessary quantity of sand from a distance not exceeding 8 Kms. from the site of work and including watering, dressing etc. labour and T&P etc. required for the proper completion of the work. saplings of girth upto 30 cms. measured at a height of 1 M. above ground level and removal of rubbish upto a distance of 50 M. out side the periphery of area cleared.
5	Cement Concrete with 2 cm gauge approved stone ballast, coarse sand & cement in the proportion of 4:2:1 including supply of all materials, labour, Tools & plants etc. required for proper completion of the work
6	Cement concrete with 4cm gauge approved stone ballast, approved coarse sand and cement in the proportion of 8:4:1 including supply of all materials labour and tools and plants etc required for proper completion for the work
7	2 .5 cm thick Damp Proof Course with Cement and approved coarse sand and grit 1:1.5:3 with and including water proofing as ordered by the Engineer incharge in the proportion as specified by the manufacturer including supply of all materials, labour, Tools & plants etc. required for proper completion of the work and including proper curing & shutterings as necessary. As in item 360 above but 2.5 cm thick and of cement concrete consisting of 1 part cement, 1½ parts approved coarse sand and 3 parts approved 10 mm. graded stone grit and including water proofing material as ordered by the Engineer incharge in the proportion as specified by the manufacturer.
8	Providing and laying in position ready mixed or site batched design mix cement concrete for reinforced cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana / Ordinary Portland / Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of centering, shuttering, finishing and reinforcement as per direction of the engineer-in-charge; for the following grades of concrete. Note: Extra cement up to 10% of the minimum specified cement content in design mix shall be payable separately. In case the cement content in design mix is more than 110% of the specified minimum cement content, the contractor shall have discretion to either re-design the mix or bear the cost of extra cement.

a	All works upto plinth level Concrete of M25 grade with minimum cement content of 330 kg /cum
b	All works above plinth level up to floor V level Concrete of M25 grade with minimum cement content of 330 kg /cum
9	Centering and shuttering including strutting, propping etc. and removal of form for all heights :
d	Foundations, footings, bases of columns, etc. for mass concrete
e	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.
f	Suspended floors, roofs, landings, balconies and access platform
g	Lintels, beams, plinth beams, girders, bressumers and cantilevers.
h	Columns, Pillars, Piers, Abutments, Posts and Struts
l	Stairs, (excluding landings) except spiral-staircases
j	Small lintels not exceeding 1.5 m clear span, moulding as in cornices, window sills, string courses, bands, copings, bed plates, anchor blocks and the like
k	Weather shade, Chajjas, corbels etc., including edges
10	M.S. (tor steel or plain) in Plain work such as R.C.C. or R.B. work including bending for proper shape as necessary including bending for proper completion of the work and including supply of all steel & wastage , bend, hooks, and authorised overlapping shall be measured. (Labour rate only but including cost of binding wire)
11	First class Brick Work in 1:4 cement & course sand 2.25 F.M. mortar in foundation and plinth including supply of all materials, labour and T&P etc. required for proper completion of the work
12	First class one Brick wall Work in 1:4 cement & COURSE sand 2.25 F.M. mortar in Superstructure work above Plinth level including supply of all materials, labour and T&P etc. required for proper completion of the work
13	First class half Brick wall Work in 1:4 cement & COURSE sand 2.25 F.M. mortar in Superstructure work above Plinth level including supply of all materials, labour and T&P etc. required for proper completion of the work
14	Providing and fixing 18 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels. Granite of any colour and shade



15	Extra for fixing marble /granite stone, over and above corresponding basic item, in facia and drops of width upto 150 mm with epoxy resin based adhesive, including cleaning etc. complete.
16	Supply and fixing 30 mm. thick Commercial flush door shutters conforming of I.S. 2202 Part- 1(1983) including fixing of wooden cleats and stoppers and including fixing and adjustment of hinges, bolts, locks, handles and springs (excluding cost of fittings)
17	Providing and fixing 12mm thick frameless toughened glass door shutter of approved brand and manufacture, including providing and fixing top & bottom pivot & double acting hydraulic floor spring type fixing arrangement and making necessary holes etc. for fixing required door fittings, all complete as per direction of Engineer in charge (Door handle, lock and stopper etc. to be paid separately)
DOOR HARDWARE	
18	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 and screws etc. complete: 300X16 mm
19	Providing and 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: 300x10 mm
20	Providing and fixing aluminium handles 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: 125 mm
21	Providing and fixing aluminium hanging floor door stopper, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour and shade, with necessary screws etc. completeTwin rubber stopper
22	Providing and fixing Stainless steel body Pull Handle- H Type (316 Grade) model no.PHH3226S Back to back Satin finish over Glass/Wood Door with necessary SS screws of complete as per direction of Engineer in charge
23	Mild steel or iron work in purlins and rafters including drilling holes and fixing in position and including supply of all steel and bolts and nuts, wastage, labour and tools and plant etc. required for proper completion of work (No material shall be issued by depts.)
24	Providing and fixing 1mm thick M.S. sheet sliding shutters with frame and diagonal braces of 40x40x6mm (1½"x1½"x¼") angle iron 3.15mm (1/8") gusset plates at the junctions and corners, hooks at top 25mm (1") dia pulleys at bottom, 40x40x6mm (1½"x1½"x¼") angles and T iron guides at top and bottom respectively including locking arrangement with handles etc. Complete and applying one priming coat of approved lead paint (No material shall be issued by depts.)



25	Supplying and fixing rolling SHUTTERS of approved make made 80x125mm (3"x5") cold rolled M.S. lath inter locked throughout their entire length and joined together at the end by end locks and mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete but excluding the cost of top cover and springs.
26	Providing and fixing ball bearing for rolling shutters
27	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid door/window/clerestory windows & clerestory other Frames/Chowkhat comprising of virgin PVC polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 gms) fabricated with miter joints after applying PVC solvent cement and screwed with full body threaded star headed SS screws having minimum frame density of 750 kg/ cum, screw withdrawal strength of 2200 N (Face) & 1100 N (Edge), minimum compressive strength of 58 N/mm ² , modulus of elasticity 900 N/mm ² and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant and fixed in position with M.S hold fast/lugs/SS dash fasteners of required dia and length complete as per direction of Engineer-In- Charge. (M.S hold fast/lugs or SS dash fasteners shall be paid for separately). Note: For WPC solid door/window frames, minus 5mm tolerance in dimensions i.e depth and width of profile shall be acceptable. Variation in profile dimensions on plus side shall be acceptable but no extra payment on this account shall be made. Frame size 65 x 100 mm
28	Supply & fixing in position 900mm height SS 304 grade ramp/staircase railing with Top handrail 2 nos. of 38mm dia. & 1.5mm thick Hollow ss pipe bent and Connected at curvilinear Profile and connected to the Vertical of 40x40mm & 1.5mm Hollow main post as per the drawing. 3 nos. dia. 16mm & 1.5 mm thick midrail horizontal Member connected with the Vertical post and the vertical Should be fixed to the top of Concrete slab with plate make of Technorails
29	PROVIDING AND FIXING SS 304 GRADE MODULAR WELD FREE SS TOP MOUNTING GLASS BALUSTRADE RAILING SYSTEM WITH 13.52mm LAMINATED GLASS OF APPROVED MAKE AS PER ATTACHED DRAWING 40X10MM THICK FLAT BALUSTRADE MATTE FINISHED WITH 110X65mm & 8mm THICK BASE PLATE WITH HILTI/RAWL PLUG FASTENERS RAILING PIPE SHALL BE 50mm DIAMETER & 1.5MM THICK. HEIGHT OF BALUSTRADE SHOULD BE 975mm FROM FFL Make – Technorail / Dorma / D Line



30	Glass Railing System :- Supply of modular Transline Block system at Balcony area of suitable for laminated glass (6mm + 1.52 PVB + 6mm) supported with structural Aluminium U T6-6005/ 6063- T6 channel 120X69mm wide in profile in blocks sizes 150mm in intervals and 250 mm blocks at every glass junctions, with Aluminium cover plates with T6-6063 grade side fixed to RCC with M10X120mm sleeve Fasteners / mechanical anchors and adjusted to be plum and in-line with all fixing points with necessary EPDM (Grade IHRD MCR 70) bidding and Packings (PA 6 -Nylon) tested and certified as per company norms along with handrail of Dia.43mm aluminium (T6-6063) round handrail suitable for 13.52 mm glass thickness. Total railing height up to 1000 mm from the FFL. Standard finish- Anodised Champagne 20-25 Microns. Must be suitable for Load Criteria 1.5 -2 Kpa of wind load and 1 KN of live load. Make – Technoraill / Dorma / D Line
31	Design supply & installation of suspended Spider Glazing system designed to withstand the wind pressure as per IS 875 (Part-III). The Suspended System held with Spider Fittings of SS-316 Grade Steel of approved manufacturer with glass panel having 12 mm thick clear toughened glass held together with SS- 316 Grade Stainless steel Spider & bolt assembly with laminated glass fins 21 mm thick. The Glass fins and glass panel assembly shall be connected to Slab/ beams by means of SS- 316 Grade stainless steel brackets & Anchor bolts and at the bottom using SS channel of 50x25x2mm using fastener & anchor bolts, non staining weather sealants of approved make, Teflon/ nylon bushes and separators to prevent bi-metallic contacts, all complete to perform as per
32	12mm glass partition with installation and hardware 316
33	Providing and laying Polished Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge. Polished Granite stone slab colour of Black, Cherry/Ruby Red or equivalent
34	Supply and fixing of Kota stone in flooring 25 mm thick and joint filled with 1:2 cement and coarse sand with a pproved colouring materials to be given an even shade with 20 mm base coat (bedding) of 1:4 cement & coarse sand mortar and polished by hand or machine and finally finished with french manson polish or other approved polish including supply of all materials, labour, Tools & plants etc. required for proper completion of the work.
35	Supply and fixing 20 mm thick Kota stone tiles in riser of steps, skirting, dado & Pillars laid on 12mm (Avg) thick mortar in with 1:3 cement and approved coarse sand mortar & jointed with gray cement slurry mixed with pigment to match the shade of slab finished with rubbing and polished of approved quality complete, including supply of all materials, labour, tools and plants etc. required for proper completion of the work.
36	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joints with white cement and
37	Glazed Vitrified tiles Matt/Antiskid finish of size Size of Tile 600 x 600 mm
38	Providing and laying Vitrified tiles in different sizes (thickness to be specified by manufacturer), with water absorption less than 0.08 % and conforming to I.S. 15622, of approved make, in all colours & shade, in skirting, riser of steps, over 12 mm thick bed of cement mortar 1:3 (1cement: 3 coarse sand), jointing with grey cement slurry @ 3.3 kg/sqm including grouting the joint with white cement & matching pigments etc. completeSize of Tile 600x600 mm

39	Supply and fixing 6 mm. (¼") China white glazed tiles in flooring or in skirting or dado laid with 1:3 Cement and approved coarse sand mortar finished with white cement slurry, jointing and polishing complete, including supply of all materials, labour and Tools and Plants.
40	Providing and fixing mineral fibre false ceiling tiles at all heights of size 595X595mm of approved texture, design and pattern. The tiles should have Humidity Resistance (RH) of 99%, Light Reflectance > 85%, Thermal Conductivity k = 0.052 - 0.057 w/m K, Fire Performance as per (BS 476 pt - 6 & 7) in true horizontal level suspended on interlocking T Grid of hot dipped all round galvanized iron section of 0.33 mm thick (galvanized @120 gsm) comprising of main T runners of 15x32 mm of length 3000 mm, cross T of size 15x32mm of length 1200 mm and secondary intermediate cross T of size 15x32 mm of length 600 mm to form grid module of size 600x600 mm suspended from ceiling using galvanized mild steel item (galvanised@80gsm) 50 mm long 8mm outer
41	Providing and supplying aluminium extruded tubular and other aluminium sections as per the architectural drawings and approved shop drawings, the aluminium quality as per grade 6063 T5 or T6 as per BS 1474, including super durable powder coating of 60-80 microns conforming to AAMA 2604 of required colour and shade as approved by the Engineer-in-Charge. (The item includes cost of material such as cleats, sleeves, screws etc. necessary for fabrication of extruded aluminium frame work. Nothing extra shall be paid on this account). The weight of aluminium extruded section shall be taken for purpose of payment
42	Designing, fabricating, testing, installing and fixing in position Curtain Wall with Aluminium Composite Panel Cladding, with open grooves for linear as well as curvilinear portions of the building, for all heights and all levels etc. including: (a) Structural analysis & design and preparation of shop drawings for pressure equalisation or rain screen principle as required, proper drainage of water to make it watertight including checking of all the structural and functional design. (b) Providing, fabricating and supplying and fixing panels of aluminium composite panel cladding in pan shape in metallic colour of approved shades made out of 4mm thick aluminium composite panel material consisting of 3mm thick FR grade mineral core sandwiched between two Aluminium sheets
43	12 mm thick plaster with cement and COURSE sand of 2.25 fineness modules in 1:4 over brick work minimum thickness not to be less than 1cm. including supply of all materials, labour, tools & plants etc. required for proper completion of the work
44	Add for extra labour and materials for plaster over rough face of one brick wall. cm thick
45	6 mm cement plaster 1:3 (1 cement : 3 fine sand) finished with a floating coat of neat cement and thick coat of Lime wash on top of walls when dry for bearing of R.C.C. slabs and beams.
46	Providing wall putty on new surface with approved quality material of Berger/ J.K./Birla or similar make 2 coats.
47	Finishing walls with textured exterior paint of required shade : New work (Two or more coats applied @ 3.28 ltr/10 sqm) over and including priming coat of exterior primer applied @ 2.20kg/10 sqm
48	Painting or varnishing with valsper or other approved high grade enamel or superior synthetic clean varnish complete two coat over previously painted surface including supply of all materials, labour, Tools & plants etc. required for proper completion of the work. Paint to be used should confirm ISI no. 105/106/133-1950
49	Distempering (Two coat) with oil bound distemper of approved brand and manufacture and of required shade on undecorated wall surface to give an even shade over and including a priming coat with cement primer of approved brand and manufacture such as Berger, J&N, Shalimar, Asian Paint after thoroughly brushing the surface free from mortar dropping and other foreign matters and also sand papered smooth including supply of all materials, labour, Tools & plants etc. required for proper completion of the work

50	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
	ROAD WORK
51	Providing and laying 80mm thick factory made cement concrete interlocking paver block of M -40 grade made by block making machine with strong vibratory compaction, of approved size, design & shape, laid in required colour and pattern over and including 50mm thick compacted bed of coarse sand, filling the joints with line sand etc. all complete as per the direction of Engineer-in-charge.
	A(GREY)
	B(COLOUR)
52	Providing and placing in position 100 mm thick factory made machine & machine mixed Precast RCC Rectangular Covers on drains of footpath of various sizes, of M-25 grade cement concrete for RCC work, including cost of centering, shuttering, reinforcement of 8 mm dia TMT bars of Fe 500 grade @ maximum 100mm c/c on both ways , neat cement punning on finished surface, properly encased on all edges with 1.6 mm thick , 100 mm wide MS sheet duly painted over priming coat reinforcement to be welded at edges with MS sheet and providing 2 Nos. 12 mm dia bar for hooks etc i/c cost of cartage, all leads & lift, handling at site etc. all complete as per direction of Engineer-in-Charge
53	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS : 10910, on 12 mm dia steel bar conforming to IS: 1786, having minimum cross section as 23 mmx25 mm and over all minimum length 263 mm and width as 165 mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacture's permanent identification mark to be visible even afterfixing, including fixing in manholes with 30x20x15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design
	INTERNAL ELECTRICAL WORK
1	Wiring point for light with 1.5 sq. mm.FRLSH PVC insulated multistrand single core copper conductor cable in PVC conduit pipe on surface, complete with 14 SWG copper earth continuity wire,GP Box ,piano type switch and ceiling rose/angle/ batten holder on 3 mm. thick phenolic laminated backelite sheet etc. complete in all respect, as directed

2	Wiring points for two ways light with 1.5 sq. mm.FRLSH PVC insulated multistrand single core copper conductor cable in heavy PVC conduit pipe on surface, complete with 14 SWG copper earth continuity wire, GP Box , two ways 2 nos. piano type switches & ceiling rose/ angle/ batten holder on 3mm. thick phenolic laminated bakelite sheet etc., complete in all respect, as directed.
3	Same as in item 174(B) but for plug point with 5 Amp flush type switch and 3 pin socket and earth continuity wire of 1.5 sq.mm. FRLSH PVC insulated multi strand copper conductor cable.
4	Supply and fixing of power plug with 15A/250 volt flush type switch and 5 pin 15A/250V flush type universal socket in suitable M.S. box of 175mm x 100mm x 50mm size with phenolic laminated bakelite sheet cover 3mm thick fixed with brass machine screw and cup washer
5	S & F of wiring for circuit/submain wiring alongwith earth wire with the following sizes of FRLS is PVC insulated copper conductor, single core cable in surface/ recessed as required
	Add for Invertor Wiring in wiring Point for light/ Fan/ Plug with 1.5 mm Cu Wire
	2 x 2.5 sq. mm + 1x1.5 sq. mm earth wire
6	Supplying and installing following size of perforated pre-painted M.S. cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.
	100 mm width X 50 mm depth X 1.6 mm thickness
	150 mm width X 50 mm depth X 1.6 mm thickness
7	Supplying and installing following size of perforated pre-painted M.S. cable trays bends with perforation not more than 17.5%, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.
	100 mm width X 50 mm depth X 1.6 mm thickness
	150 mm width X 50 mm depth X 1.6 mm thickness
8	Supplying and installing following size of perforated pre-painted M.S. cable trays reducers with perforation not more than 17.5%, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.
	100 mm width X 50 mm depth X 1.6 mm thickness
	150 mm width X 50 mm depth X 1.6 mm thickness
9	Supplying and installing following size of perforated pre-painted M.S. cable trays Tee's with perforation not more than 17.5%, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.
	100 mm width X 50 mm depth X 1.6 mm thickness
	150 mm width X 50 mm depth X 1.6 mm thickness
10	Supplying and installing following size of perforated pre-painted M.S. cable trays cross members with perforation not more than 17.5%, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.
	100 mm width X 50 mm depth X 1.6 mm thickness



	150 mm width X 50 mm depth X 1.6 mm thickness
11	S&F surface/flush mounting 8ways SPN distribution board with additional metal door without MCB complete in all respect, as directed by Engineer in charge.
12	Supplying and fixing 5 A to 32 A rating, 240/415 V, 10 kA, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.
	S&F of 63 Amp. D.P. Isolator
13	Supplying and fixing Single Pole Blanking Plate in the existing MCB DB complete Etc. as required.
14	As in item no.1304 (B) but in 20 mm dia heavy duty (2mm thick) PVC conduit with 1 number 1.5 sq. mm. FRLSH PVC insulated 1100 V grade multistrand single core copper conductor as earth continuity wire.
15	As in item no.1303(B) but in 25mm dia heavy duty (2mm thick) PVC conduit with 2 number 1.5 sq. mm. FRLSH PVC insulated 1100 V grade multistrand single core copper conductor cable as earth wire drawn inside the conduit
16	Supply, fixing, connecting and testing of elephone/computer/TV modular sockets modular plate anodised MS box and blanking late in surface/recessed including connectionetc as required.
	RJ-11 telephone socket two line with shutter
	T.V. CO-axial cable socket outlets of one point
	RJ-45 face plate(computer line) with shutter DN-460
17	Providing, fixing connecting and testing of solder less telephone Tag block of following capacity ties as required in suitable size of m.s. hinged lockable cover box duly painted etc. as required of Krone type.
	10 pair Tele Tag Blk
18	Providing, fixing connecting and testing of solder less Television Junction Box of following capacity ties as required in suitable size of m.s. hinged lockable cover box duly painted etc. as required of Krone type.
	2 pair T.V Junction Box.
19	Supplying drawing, connecting and testing of 0.61mm dia annealed copper conductor PVC insulated PVC sheathed telephone Wire/cables in Existing PVC conduit or a racks as required.
	2 pair Telephone cable. (0.61sq mm)
20	Supplying and drawing co-axial TV cable RG-6 grade, 0.7 mm solid copper conductor PE insulated, shielded with fine tinned copper braid and protected with PVC sheath in the existing surface/ recessed steel/ PVC conduit as required.
21	Supplying and drawing of UTP 4 pair CAT 6 LAN Cable in the existing surface/ recessed steel/ PVC conduit as required.
22	Supplying and fixing metal box of following sizes (nominal size) on surface or in reces with suitable size of phenolic laminated sheet cover in front including painting etc as required.
	75 mm x 75 mm x 60 mm deep

23	Supply and burring of Safe Earthing Electrode T-39 (Hot-Dip Galvanized), Length 2000mm, outer pipe 76mm inner Dia 38mm terminal Dia 12 mm ,outer GI pipe of 16 SWG and inner GI pipe of 12 SWG with Hot Dip Galvanization up to 100 micron filled with crystalline conductive mixture (CCM) having anti corrosive & conductive property with 50 kgs activated soil (BFC) capable of reducing the soil resistivity with good mixture of retaining capacity along with 30cm square C.I. frame with hinged cover & masonry housing. (From electrode terminal to switch board, cost of 25 X 3 GI. Strip will be extra), Make: As approved in U.P. P.W.D., & C.P.R.I. Certified
24	Supply and fixing of one number 8 SWG G.I. wire in 15mm dia. G.I. pipe for earthing, laid in ground or in wall duly concealed including the cost of cement, sand, labour, T&P other material required for proper completion of the work as directed at site.
25	Supply, installation testing & commissioning of Earth continuity conductor or main earthing lead fixed to wall on batten or recess or chases or buried in ground or drawn in conduit/pipe or fixed to poles or any other indicated situation for loop earthing etc. as required (4 mm dia GI wire)
26	Supply and fixing of recess/ Surface/ Pendent mounting round 6 Watt 8 Watt LED Down Lighter having Powder coated die cast aluminium housing with heat sink, diffuser/ Reflector and driver set complete in all respect.
27	Supply and fixing of recess/ Surface/ Pendent mounting round 10 to 15 Watt LED Down Lighter having Powder coated die cast aluminium housing with heat sink, diffuser/ Reflector and driver set complete in all respect.
28	Supply and fixing of LED Tube Light batten fitting suitable for up to 1 X 22 watt LED tube light on surface complete in all respect.
29	S/I/T/C of 8 Passenger lift electric traction. With Machine Room having contract speed of 1.5 Meter per second serving different floors in the lift shaft of size 2000 mm (Width) x 2000 mm (Depth) and 1600 mm pit depth as per detailed specifications attached and as under complete with all the equipment and accessories.
	Speed = 1.0 Meter per second
	3 stops (ground floor to Third Floor)
	Rise = 9.50 mtr
	Stops = 3 Stops with all opening on the same side
	Controller - V3F (Variable Voltage Variable Frequency)
	Automatic Rescue Device (ARD) compete with dry maintenance free batteries as required.
	Operation - Microprocessor based Simplex control
	Power: 400/415 Volts, 3 Phase 4 wire 50 Hz AC system.
	Traction media = Flat coated steel belt
	Car Finish: Rear Mid Panel = Stainless Steel Honeycomb Rear Corner Panels = Stainless Steel Honeycomb Side Mid Panels = Stainless Steel Honeycomb Side Corner Panels = Stainless Steel Honeycomb Front Panels = Stainless Steel Honeycomb
	False ceiling finish = Stainless steel #4 (Hairline)
	Ventilation = Cross flow fan
	Hand Rails = Stainless steel mirror finish handrails on rear car panels

	Flooring = Vinyl tiles
	Car doors: Stainless steel #4 (Hairline)
	Landing doors: Stainless steel #4 (Hairline)
	Car entrance door opening arrangement: (Centre Opening Doors)
	Handrail on rear wall of car in SS hairline Finish
	Lift should be with following: Anti-nuisance Car Call Protection, Independent Service (for Duplex only), Overload Device, Nudging, Emergency Firemen's Service, Emergency Car Light Unit, Infrared Curtain Door Protection, Door Time Protection, Emergency Alarm Button, Extra Door Time of Lobby & Parking, Door Open/Close Button, Manual Rescue Operation, Belt Inspection Drive, Auto Fan Cut Off, Emergency Exit, Emergency Landing Device.
	Car position indicator = Monochrome LCD-Blue Background & White font Dot matrix (LED) Scrolling Display
	Hall fixtures Face Plate = Stainless steel #4 (Hairline)
	Hall button arrangement = LCD Monochrome type
	Supply and laying of aluminium conductor PVC insulated armoured served sheathed cables 1100 Volts grade at a depth of 750 mm below ground level over a cushion of 75 mm. thick sand all around and protected with burnt bricks on sides and on top. On surface the cable run shall be fixed on M.S. clamps etc. of suitable size or as directed by the Engineer-Incharge, complete in all respect. The armouring of the cable shall be properly connected with the earth conductor by clamps etc.
	3.5 core 185 sq. mm
	3.5 core 150 sq. mm
	3.5 core 120 sq. mm For Fire & Plumbing Pump Panel.
	3.5 core 70 sq. mm For External Lighting Panel
	3.5 core 50 sq. mm For Panel
	3.5 core 35 sq. mm For Panel, STP & ETP Panel.
	4 core 25 sq. mm
	Supply and fixing of brass nickel plated compression gland for PVC insulated & armoured served sheathed, underground cable including rubber ring etc. complete in all respect. The armouring of the cable shall be properly connected with the earth as per direction of Engineer-Incharge.
	185 sq. mm 3-1/2 core
	150 sq. mm 3-1/2 core
	120 sq. mm 3-1/2 core
	70 sq. mm 3-1/2 core
	50 sq. mm 3-1/2 core
	35 sq. mm 3-1/2 core
	25 sq. mm 3-1/2 core



	Supply and fixing of vertical air termination final rod comprising of 300mm long x 25mm dia. Copper rod with one pointed prong and 100mm dia x 3 mm thick base plate etc. complete in all respect.
	Fixing of lightning conductor finial (single prong) with base plate including holes etc. complete as required.
	Jointing copper / G.I. tape (with another copper/ G I tape, base of the finial or any other metallic object) by riveting / nut bolting/ sweating and soldering etc as required
	Supply and fixing of horizontal air termination (roof conductor) of 25mm x 3mm G.I. strip, G.I. clamps on surface complete in all respects as approved by Engineerin-charge.
	Providing and fixing G.I. tape 20 mm X 3 mm thick on parapet or surface of wall for lightning conductor complete as required.(For vertical run)
	Supply and fixing of testing joint of G.I. strip 32mm x 6mm and 150mm long with G.I. bolts and nut etc. complete in all respect.
	Providing and laying G.I. tape 32 mm X 6 mm from earth electrode directly in ground as required.
	Supply and burring of Safe Earthing Electrode T-19, (Hot Dip Galvanized), Length up to 3000mm, outer Dia 50mm inner Dia 25 mm, terminal Dia 12mm, outer GI pipe of 16 swg and inner GI pipe of 12 swg with Hot Dip Galvanization up to 100 micron filled with crystalline conductive mixture (CCM) having anti corrosive & conductive property with 50 kgs activated soil (BFC) capable of reducing the soil resistivity with good mixture of retaining capacity and one earthing lead of 25mm x 3mm G.I. strip, upto switch board (from apron to switch board, the cost of G.I. strip will be extra) along with 30 cm square C.I. frame with hinged cover & masonry housing. Make: As approved in U.P. P.W.D., & C.P.R.I. Certified.
	Supply and burring of Safe Earthing Electrode T-19 Cu Copper Coated, Length 3000mm, outer pipe 48.4mm x 3.2mm, inner pipe 26.9mm x 2.6, terminal Dia 12 mm, coating 80-100 micron filled with crystalline conductive mixture (CCM) having anti corrosive & conductive property with 50 kgs activated soil (BFC) capable of reducing the soil resistivity with good mixture of retaining capacity along with 30 cm square C.I. frame with hinged cover & masonry housing. (From electrode terminal to switch board, cost of 25 x 3 Copper Strip will be extra) Make: As approved in U.P. P.W.D., & C.P.R.I. Certified.
	Supply and fixing of vertical down conductor of 32mm x 6mm copper strip etc. on approved clamps on surface for lightning conductor complete in all respects (For two storeyed buildings).



	Providing and fixing earth bus of 50 mm X 5 mm copper strip on surface for connections etc. as required.
	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.
	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing along with existing surface/ recessed conduit/submain wiring/ cable as required.
	Design, fabrication, assembling, wiring, testing, supply, forwarding to site, unloading, shifting to location, inspection, installation, testing and commissioning of DG & Transformer Changeover Panel cum Main LT Panel, Main distribution panels/ sub-distribution panels and capacitor panel, fabricated out of 14 gauge CRCA sheet steel in cubicle formation, compartmentalized, from 3b construction, free standing floor mounted, dust and vermin proof with reinforcement of suitable size angle iron, channel, 'T' sections and/ or flats wherever necessary. 16 gauge CRCA sheet steel shall be used for final distribution panels. 3 mm thick cable gland plates shall be provided on top as well as at the bottom of the panels. Panels shall be treated with all anticorrosive process before powder coating as per specifications and final approved shade. 2 No. earthing terminals shall be provided for all distribution panels. Panels shall be suitable for 415V, 3 phase, 4 wire, 50 HZ supply system. Lifting hooks shall also be provided in case of large panels. Approval shall be taken for each panel in the form of shop drawings before fabrication.
	Galvanised hardwares with zinc passivation shall be used in fabrication of panels.
	Incoming Air Circuit Breaker from 250 kVA Transformer - 1
	500 amps 4 pole electrically operated manually draw out type Moulded circuit breaker with microprocessor release unit, for short circuit, over current and earth fault protection with adjustable setting as per specification and with following accessories :
	Digital load manager (conserve – EM 6400 with RS-485 or equivalent) of accuracy class-I with 2 No. 800/5 amps 15VA CTs.
	Phase indicating light shall be protected by 2 amps MCB's- 3 Set
	Three Phase Under voltage relay (27) - 1 Set
	Three Phase Over voltage relay (59) - 1 Set
	Breaker ON/ OFF/ TRIP indicating lights with control MCB's- 1 Set
	24 V DC Shunt trip coil. - 1 Set
	240 V AC under voltage release. - 1 Set
	Auto-manual / test selector / switch - 1 Set
	Breaker control switch - 1 Set
	Auxiliary contacts required for necessary interlocking of breakers.
	Three phase Voltage sensor relay shall be protected by 2 amps TP MCB's, 1 Set
	Transient voltage surge suppressor with suitable contactor shall be protected by 2 amps TP MCB's. - 1 Set
	Digital voltmeter with inbuilt selector switch- 1 set
	Bus Bar :
	630 A TPN electrolytic Al bus bar with heat shrinkable insulation sleeve
	Outgoings
	250 Amps 4 Pole MCCB - 4 No.
	200 Amps 4 Pole MCCB - 2 No.

150 Amps 4 Pole MCCB - 2 No.
100 Amps 4 Pole MCCB - 2 No.
63 Amps 4 Pole MCCB - 3 No.
150 Amps 4 Pole MCCB - 3No. Spare
100 Amps 4 Pole MCCB - 2 No. Spare
Bus Coupler
800 amps 4 pole MCCB, with ON/ OFF/ TRIP indicating lamps with microprocessor release unit, etc complete as per specs.
<i>Notes:-</i>
<i>All outgoing feeders shall have suitable range of followings:</i>
<i>All breakers shall be electrically interlocked as per schematic diagram.</i>
<i>All ACB's/ MCCB's shall be suitable for 35 KA breaking capacity.</i>
<i>PLC for load management and supervision.</i>
<i>Three phase indicating lamps shall be protected by 6 amps SP MCBs.</i>
<i>All outgoing feeders shall be provided with built-in short circuit & earth fault relay module.</i>
MAIN LT PANEL. As described above.
SHOP MAIN METER ELECTRICAL PANEL.(GR., 1ST. & 2ND. FL.)
Incoming
1 No. 200 Amps TPN MCCB With following accessories:
VAF digital electronic meter with inbuilt selector switch and 200/5 Amps suitable VA, CL 1 CTs . -1 Set
Phase indicating light shall be protected by 2 Amps SP MCB's -3 Set
Bus Bars
400 Amps TPN Aluminium bars with heat coloured shrinkable insulation sleeve - 1 Set
Outgoing
63 Amps FP MCB - 4 No.
40 Amps TP MCB - 2 No.
Spare
40 Amps 4P MCB - 3 No.
<i>Notes:-</i>
<i>All MCCB's shall be of 25 KA (Ics) breaking capacity.</i>
<i>All MCB's shall be of 10 KA breaking capacity.</i>
SHOP MAIN METER ELECTRICAL PANEL. (GR., 1ST. & 2ND. FL.) Described as above.
WATER SUPPLY PANEL
Incoming
1 No. 100 Amps TPN MCCB With 100A change Over switch with following accessories:
VAF digital electronic meter with inbuilt selector switch and 100/5 Amps suitable VA, CL 1 CTs . -1 Set.
Phase indicating light shall be protected by 2 Amps SP MCB's -3 Set
Bus Bars
250 Amps TPN Aluminium bars with heat coloured shrinkable insulation sleeve - 1 Set.
Outgoing
32 Amps TP MCB - 2 No.
25 Amps TP MCB - 6 No.
20 Amps TP MCB - 2 No.



20 Amps FP MCB - 1 No.
Spare
3 Amps 4P MCB - 3 No.
Notes:-
<i>All MCCB's shall be of 25 KA (Ics) breaking capacity.</i>
<i>All MCB's shall be of 10 KA breaking capacity.</i>
WATER SUPPLY PANEL described as above
FIRE FIGHTING PANEL.
Incoming
1 No. 150 Amps TPN MCCB With 100A change Over switch with following accessories:
VAF digital electronic meter with inbuilt selector switch and 150/5 Amps suitable VA, CL 1 CTs . -1 Set.
Phase indicating light shall be protected by 2 Amps SP MCB's -3 Set
Bus Bars
250 Amps TPN Aluminium bars with heat coloured shrinkable insulation sleeve - 1 Set.
Outgoing
63 Amps TP MCB - 4 No.
40 Amps TP MCB - 4 No.
20 Amps TP MCB - 2 No.
20 Amps FP MCB - 1 No.
Spare
3 Amps 4P MCB - 3 No.
Notes:-
<i>All MCCB's shall be of 25 KA (Ics) breaking capacity.</i>
<i>All MCB's shall be of 10 KA breaking capacity.</i>
WATER SUPPLY PANEL described as above
ELECTRICAL LIFT PANEL.
Incoming
1 No. 100Amps TPN MCCB With 100A change Over switch with following accessories:
VAF digital electronic meter with inbuilt selector switch and 100/5 Amps suitable VA, CL 1 CTs . -1 Set.
Phase indicating light shall be protected by 2 Amps SP MCB's -3 Set
Bus Bars
200 Amps TPN Aluminium bars with heat coloured shrinkable insulation sleeve - 1 Set.
Outgoing
63 Amps TP MCB - 3 No.
40 Amps TP MCB - 2 No.
20 Amps TP MCB - 2 No.
20 Amps FP MCB - 1 No.
Spare
3 Amps 4P MCB - 3 No.
Notes:-
<i>All MCCB's shall be of 25 KA (Ics) breaking capacity.</i>
<i>All MCB's shall be of 10 KA breaking capacity.</i>
WATER SUPPLY PANEL described as above
FEEDER PILLAR PANEL FOR EXTERNAL LIGHTING.

	Supply, installation, testing and commissioning of cubicle type totally enclosed free standing, dust free, damp and vermin proof and water proof outdoor (IP 55) Feeder pillar fabricated out of 2mm thick CRCA sheet duly powder coated and including supply & fixing the following items and interconnections, wiring with suitable size wires/ cables and including all civil works like excavation, PCC, brick work pedestal, plastering, refilling etc. and as per specifications as required.
	INCOMER
	1 No. 200 Amp four pole Moulded Case Circuit Breaker (Ics value 25 KA)
	BUSBARS
	300 Amp TPN busbars of high conductivity electrolytic quality aluminium alloy.
	INSTRUMENTS & ACCESSORIES
	1 No. 96x96 analogue type Voltmeter suitable range for 3 phase, 4 wire operation with LED display and selector switch with controlled by 3 sets of 2Amp MCB .
	1 No. 96x96 analogue type Ammeter of suitable range (0 to 63Amp), for 3 phase 4 wire operation with LED display and selector switch
	3 Nos of LED type phase indicating lamps (RYB) with controlled by 2Amp MCB .
	1 No. 6A, 2 pole Auto/OFF/Manual (2 way with OFF) selector switch.
	2 Nos. of push button actuator
	OUTGOING
	Outgoing 1 (6 PM - 6 AM)
	TPN DB 6 No. 10 amps SP MCB per phase as outgoing with 3 No. 40 amps DP RCCB of 30 mA leakage current plus 1 No. 40 amps TP Contactor, push button etc controlled through 0-24 hour timer, photo sensor and 1 No. 40 amps 4 pole MCB as incomer).
	Outgoing 2 (6 PM - 11.55 PM)
	TPN DB 6 No. 10 amps SP MCB per phase as outgoing with 3 No. 40 amps DP RCCB of 30 mA leakage current plus 1 No. 40 amps TP Contactor, push button etc controlled through 0-24 hour timer, photo sensor and 1 No. 40 amps 4 pole MCB as incomer).
	Fidder pillar as discribed above
	Design, fabrication, assembling, wiring, supply, installation, testing and commissioning of Automatic control panels with mixed die electric type capacitors, fabricated out of 14 gauge CRCA sheet steel in cubicle compartmentised, 3b modular construction, free standing, floor mounted, dust and vermin proof with reinforcement of suitable size, angle iron, channel, 'T' sections and/ or flats wherever necessary. Cable gland plates shall be provided on top the panels. Panels shall be treated with all anticorrosive process before powder coating as per specifications and final approved shade. 2 No. earthing terminals shall be provided for all distribution panels. Panels shall be suitable for 415V, 3 phase, 4 wire, 50 HZ supply system. Lifting hooks shall also be provided in case of large panels. Approval shall be taken for each panel in the form of shop drawings before fabrication. Galvanized hardwares with zinc passivation shall be used in fabrication of panels.
	50 KVAR CAPACITOR AUTOMATIC CONTROL PANEL
	Incoming



	150 amps TPN manually operated fully drawout type air circuit breaker as per specification and with following accessories:
	96 x 96 mm sq. 0-500 Volt digital voltmeter with selector switch
	Phase indicating light shall be protected by 2 Amps SP MCB's -3 Set
	Power factor compensating relay (including power factor meter) in 10 steps for automatic cut off or add on capacitor units to keep the power factor at 0.98 with variation of loads. All associated auxiliary contactors/ relays/ timer/ auto manual selector switches to be provided - 1 Set.
	Bus Bars :
	250 amps TPN Aluminium bus bars with coloured heat Shrinkable insulated sleeves. - 1 set
	Outgoings - I :
	40 amps TPN MCB - 1 Set
	Outgoing feeders consisting of following accessories.
	80 amps or capacitor duty 525 volts 50 Hz contactors - 1 Sets
	"ON" /"OFF" push buttons and indicating lamps - 1 Sets
	12.5 kVAr, 525 volts capacitor unit with detune filters as specified - 1 Sets
	Outgoings - II :
	63 amps TPN MCB - 1 Sets
	Outgoing feeders consisting of following accessories.
	80 amps or capacitor duty 525 volts 50Hz contactors - 1 Sets
	"ON" /"OFF" push buttons and indicating lamps -1 Sets
	25 kVAr, 525 volts capacitor unit with detune filters as specified. - 1 Sets
	Note:
	<i>All MCCB's shall be of 35 kA breaking capacity.</i>
	<i>Fast response time of 'ON' capacitors 40-60 miliseconds.</i>
	<i>Necessary control and firing card with proper wiring and lugs of the required rating to be provided.</i>
	<i>Heavy duty exhaust fans to be provided for cooling Thyristors</i>
	<i>LED indication for number of capacitor banks 'ON'.</i>
	<i>LED indication of Power Factor lagging or leading.</i>
	<i>The APFC system shall be provided with following :</i>
	<i>Protections :</i>
	<i>a. Over voltage.</i>
	<i>b. Voltage imbalance.</i>
	<i>c. Over temperature-system should be in standby mode & automatically restart after above condition restored.</i>
	<i>d. Earth leakage.</i>
	<i>e. 7% value reactors with iron core.</i>
	Capacitor automatic control panel as described above.
	<i>a. Over voltage.</i>
	<i>b. Voltage imbalance.</i>
	<i>c. Over temperature-system should be in standby mode & automatically restart after above condition restored.</i>
	<i>d. Earth leakage.</i>
	<i>e. 7% value reactors with iron core.</i>
	Capacitor automatic control panel as described above.
	Supply and fixing of recess/ Surface/ Pendent mounting round 10 to 15 Watt LED Down Lighter having Powder coated die cast aluminium housing with heat sink, diffuser/ Reflector and driver set complete in all respect.



	Supply and fixing of LED Street light Fitting having die cast aluminium body and diffuser with driver set suitable for 15 Watt. to 25 Watt. Confirming to IP 66 protection complete in all respect.
	Supply and fixing of LED Street light Fitting having die cast aluminium body and diffuser with driver set suitable for 45 Watt. to 50 Watt. Confirming to IP 66 protection complete in all respect.
	Supplying and laying of following size DWC HDPE pipe ISI marked along with all accessories like socket, bend, couplers etc. conforming to IS 14930, Part II complete with fitting and cutting, jointing etc.direct in ground (75 cm below ground level) including excavation and refilling the trench but excluding sand cushioning and protective covering etc., complete as required.
	63 mm dia (OD-63 mm & ID-51 mm nominal)
	90 mm dia (OD-90 mm & ID-76 mm nominal)
	120 mm dia (OD-120 mm & ID-103 mm nominal)
	Supply, installation, testing and commissioning of floor mounted, dust, damp and vermin proof, cubicle, H. T. Metering Panel made out of 2 mm thick CRCA sheet steel complete with electronic trivector meter, CT's of 10/5 amp, 0.5 class 15 VA Burden, and PT's of 11 KV / $\sqrt{3}$, 110 V / $\sqrt{3}$, 50 VA, conforming to relevant IS standard and complete as required. CT's, PT's and trivector meter shall be got tested and approved from local electricity supply authority.The GA drawing also shall be got approved from local electricity authorities before fabrication. The unit shall have provision for sealing and Acrylic window shall be provided to facilitate meter reading.
	Supply and erection of 2 pole structure for terminating 11 KV O.H supply from local electricity authority as per specifications double pole structure shall comprise of:
	MS tubular Swaged pole 11 Mtrs high (410 SP 57 as per IS:2713), in cement concrete foundation 1:3:6 (1 Cement : 3 coarse sand : 6 graded aggregate 40 mm nominal size) including excavation and refilling etc. as required. The rate shall be inclusive of painting with 2 coats of red oxide primer and 2 coats of aluminium paint. The portion of pole under the ground shall be provided with 2 coats of bituminous paint.
	Steel sections, channels angles, flats, clamps, GI nuts, bolts and required hardware etc. of different sizes for cross arms, bracings, supports etc for 2 pole mounting arrangement isolators L.A, trifurcating cable box, GOD etc.. etc. including anti climbing barbed wires (conforming to IS:278) having 4 points barbs spaced 75 ± 12 mm apart. All steel structure shall be given 2 coats of red oxide primer and 2 finishing coats of Aluminium paint as required as per dwgs & direction of Engineer-in-charge
	Supply, installation, testing and commissioning of 3 sets of 11 KV pin insulators, 11 KV class disc insulators (3 Nos. in series) to be used for stringing the strain type bus bar, bus bar support insulators complete with galvanised insulator fittings, ball & socket type complete with galvanised strain clamps and fixing hard-wares e.g. bolts, nuts, washers etc. complete as required as per dwgs including stringing of busbars using DOG ACSR conductor and extending connection (jumping) of 11 KV Air break isolators (DOLO fuse units).



	Supply, installation, testing and commissioning of single piece non-linear resistor type lightning arrester suitable for 3 wire, 11 KV O/H line, rated. Voltage of 12 KV (rms) with a nominal discharge current rating of 10 KA (station class) and complete with galvanised clamping arrangement G.I. bolts, nuts, washers etc. as required. (to be provided on all phases.)
	Supply, installation, testing and commissioning of 400 amps 11 KV single pole out door dropout fuse with resin bonded paper tube fuse based with extra hard PB contract, brown glazed porcelene insulator mounted on galvanised malleable base having 3 phase rupturing capacity of 350 MVA at 11 KV vertically mounted on channels of DP structure including making connections to air break switch as required at suitable height on structure and painting etc. As per specification (for 3 phase) with horizontal double break manually operated gang operating device (Air break switch) with pad locking arrangement (operating rod to be supported properly), complete with operating handle and locking arrangement and set of fuses
	Supply, installation, testing and commissioning of GI stay set complete with 20 mm dia 1.8 m long stay rod with 450 x 450 x 7.5 mm anchor plate with thimbles stay clamps, 7/4.00 mm dia GI stay wire, turn buckle (20 mm x 600 mm) strain insulator bow lightner in cement concrete 1:3:6 foundation including excavation of refilling etc.
	11 KV Double Pole Structure as described above.
	Supply, Receiving, Unloading, Shifting, Installation Testing & Commissioning of outdoor type Transformer ONAN type with copper winding having following continuous 250 KVA rating, 11 /0.415 KV 3 Phase 50 Hz, Vector group Dyn-11, Off load Tap Changer with tapings in steps of $\pm 2.5\%$, $\pm 5\%$, 7.5% with oil conservator, silica gel breather having connecting terminals on HV side suitable for connecting 3Cx 240 Sqmm HT cable, having cable termination box on secondary voltage side suitable for terminating 4 No 240mm ² XLPE Armoured cable. Transformer shall be confirming to Energy Efficiency Level 2 as per Latest IS 1180(Part 1 & 2), IS:2026, on Brick /CC/RCC platform with all fittings, accessories, filled with filtered transformer oil including testing and commissioning etc.. Including foundation of Transformer, etc. complete as per technical specifications.
	Supply, installation, testing and commissioning of 180 AH capacity 24 volts DC hermetically sealed maintenance free lead acid batteries duly charged including battery charger unit with provisions of Boost Charing, and Float charging. Suitable for 240 V, including DC DB single phase + 10% AC, 50 Hz supply as per specifications .
	Supply and fixing in position the approved "Shock Treatment Charts" written in English and Local Language. These charts shall be framed in teak wood frame and covered with glass.
	Supply and fixing of 2 metres high cage fabricated with 3mm thick expanded metal fixed on 50mm x 50mm x 6mm angle iron frame having vertical members spaced at 1 to 1.25 mts and horizontal members spaced at 1 mt. The vertical members shall be grouted in floor and horizontal members in the wall to a depth of 300mm with ends forked.
	Supply and fixing of fire extinguisher, ABC Type 4.00 kg. capacity (ISI Marked IS : 15683 & TAC approved) complete with initial charge and wall bracket, along with supply of all materials and labour for proper completion of work
	Supply and fixing of in-position the fire extinguishers dry chemical powder (ABC) 2 kg capacity.

	Providing and fixing H.T. danger notice plate of 250 mm X 200 mm, made of mild steel, at least 2 mm thick, and vitreous enameled white on both sides, and with inscription in single red colour on front side as required.
	Supply and fixing in position 1000 mm wide rubber matting of 11 kV grade as per electricity rules. Thickness of rubber mat shall be not less than 12 mm.
	Supply of fire buckets 5 nos. in each set duly filled with fine sand and fixed on an angle iron frame as per requirement of local authorities. Fire buckets shall be painted red from outside and white from inside with additional handle at the bottom.
	Supply and fixing position the approved single line diagram framed in 1000 x 800 mm size glass frame and installed in main switch room.
	Supply of First Aid box of approved make
	Supply of tool kit with 1 pair 11 kV rubber hand gloves of approved make.
	Supplying of following Size 3 core, / XLPE power cable of 11 kV grade direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required. (Make:- HAVELLS, KEI, POLYCAB, SKYLINE , RR CABLE)
	240 sq. mm
	300 sq. mm
	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 11 kV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required.
	Above 120 sq. mm and upto 400 sq. mm
	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 11 kV grade of following size in the existing masonry open duct as required.
	Above 120 sq. mm and upto 400 sq. mm
	supplying and making indoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 core, XLPE aluminium conductor cable of 11 kV grade as required.
	240 sq. mm
	300 sq. mm
	Providing, laying and fixing following dia RCC pipe NP2 class (light duty) in ground complete with RCC collars, jointing with cement mortar 1:2 (1 cement : 2 fine sand) including trenching (75 cm deep) and refilling etc. as required. (for road crossing)
	250 mm dia
	INTERNAL PLUMBING WORK
1	Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100 mm sand cast Iron P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required: 17.1.1 White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot rests
2	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, 40 mm 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 : 17.3.1 W.C. pan with ISI marked white solid plastic seat and lid



3	Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100 mm sand cast Iron P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required: 17.1.1 White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot rests
4	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, 40 mm 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 : 17.3.1 W.C. pan with ISI marked white solid plastic seat and lid
5	PVC PIPE HEAV SIZE 6KG PRESSURE
	(A) 160 MM
	(B) 110 MM
	(D) 63 MM
6	P/F 100 MM DIA NAHANI TRAPE
7	S/ F C P GRATING
8	P/F 110MM PVC TERMINAL GUARD
9	P/F C P BRASS LONG BODY BIB COCK DSR NO 18.51.1
10	P/F C P BRASS ANGLE VALVE DSR NO 18.53.1
11	P/F WATER TANK DSR 18.48
12	P/F GUN MATEL GATE VALVE 25 MM DIA DSR NO 18.17.1
13	P/F GUN MATEL GATE VALVE 40 MM DIA DSR NO 18.17.3
14	MAKING WATER CONNECTION EXISTING PVC WATER LINE INCLUDEING MS CLAMP FERRUAL,NUT BOLT AND WASHERS ETC COMPLETE
15	P/F 15 MM DIA BORE BALL VALVE DSR NO 18.18.1
16	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
a	18.8.1 15 mm nominal dia Pipes
b	18.8.3 25 mm nominal dia Pipes
c	18.9.5 40 mm nominal dia Pipes
17	CPVC UNION (MR)
18	NON RETURN VALVE
19	P/F OF PVC FITTINGS
	(A) 110X110 MM PVC TEE
	(B) 110X110X110 MM DOORS TEE
	(C) 110 MM ELBOW
	(D) 100 MM DOORS ELBOW
20	Providing and fixing C.P. brass bib cock of approved quality conforming to IS:8931 : 18.49.1 15 mm nominal bore



21	P/F OF 10 HP Submersable pump includeing starter of approved make complete with board 80 mm dia cloumn pipe flench assembly bends etc required for proper completion of the work as directed by eic
22	Providing and fixing 600x450 mm beveled edge mirror of superior glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete DSR NO 17.31/2021
23	Providing and fixing 600x120x5 mm glass shelf with edges round off, supported on anodised aluminium angle frame with C.P. brass brackets and guard rail complete fixed with 40 mm long screws, rawl plugs etc., complete.DSR NO 17.33
24	17.73.2 600 mm long towel rail with total length of 645 mm, width 78 mm and effective height of 88 mm, weighing not less than 190 gms.
	EXTERNAL PLUMBING WORK
	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings This includes jointing of pipes & fittings with one step CPVC solvent cement, trenching, refilling & testing of joints complete as per direction of Engineer in Charge.
	25 mm nominal outer dia Pipes
	32 mm nominal outer dia Pipes
	50 mm nominal outer dia Pipes
	100 mm nominal outer dia Pipes
	150 mm nominal outer dia Pipes
	Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete :
	25 mm nominal bore
	32 mm nominal bore
	50 mm nominal bore
	100 mm nominal bore
	150 mm nominal bore
	Providing and fixing uplasticised PVC connection pipe with brass unions
	25 mm nominal bore
	32 mm nominal bore
	50 mm nominal bore
	100 mm nominal bore
	150 mm nominal bore
	Supply and laying of following size PVC OF 6 Kg pipe ISI marked along with all accessories like socket, bend, couplers etc. conforming to , complecte with fitting and cutting , jointing etc. direct in ground (75 cm below level) including excavation and refilling the trench but excluding sand cushioning and protective covering etc, complete as required
	160 mm dia

	Constructing masonry Chamber 60x60x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) , i/c necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design :
	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5
	Constructing brick machinery circular type manhol 0.91 m inter internal diameter at bottom and 0.56 m di at top in cement motors 1:4 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, making necessary channel in cement concrete 1:2:4, finished with floating court of neat cement.
	Development of tube well in accordance with IS : 2800 (part I) and IS: 11189, to establish maximum rate of usable water yield without sand Content (beyond permissible limit), with required capacity air compressor, running the compressor for required time till well is fully developed, measuring yield of well by "V" notch method or any other approved method, measuring static level & draw down etc. by step draw down method, collecting water samples & getting tested in approved laboratory, i/c disinfection of tubewell, all complete, ncluding hire & labour charges of air compressor, tools & accessories etc., all as per requirement and direction of Engineer-in-charge.
	Supplying, assembling, lowering and fixing in vertical position in bore well, ERW (Electric Resistance Welded) FE 410 plain slotted (having slot of size 1.6/3.2 mm) mild steel threaded and socketed/ plain bevel ended pipe (type A) of required dia, conforming to IS: 8110, of Reputed and approved make, having wall thickness not less than 5.40 mm, including painted with outside surface with two coats of anticorrosive bitumestic paint of approved brand and manufacture, including hire & labour charges, fittings & accessories, all complete, for all depths, as per direction of Engineer -in-charge
	200 mm nominal size dia
	INTERNAL FIRE FIGHTING WORK
	Supplying, installation, testing and commissioning of electric driven pressurization pump (Jockey) suitable for automatic operation and consisting of following: complete in all respect as required.



	Horizontal split casing high pressure Single/Multistage, centrifugal pump of cast iron body and bronze impeller with stainless steel shaft, mechanical seal and flow of 10.8 m³/Hr at 70.0 m head conforming to IS: 1520.
	Suitable HP, SQ cage induction motor TEFC type suitable for operation on 415 volts, 3 phase 50 Hz. AC with IP 55 protection for enclosure, horizontal foot mounted type with class 'F' insulation, conforming to IS: 325.
	M. S. fabricated common base plate, coupling, coupling guard, foundation bolts etc. as required.
	Suitable reinforced cement concrete pump foundation as per manufacturer's design including foundation bolts, washers as required with anti vibration pad.
	450 lpm at 35 m Head
	Providing laying, testing and commissioning of class 'C' heavy duty MS pipe confirming to IS 3589/1239 including fittings like elbows, tees, flanges, reducer, jointing with nuts bolts, gasket and welding etc. and supports, as required and painting with tow or more coats of synthetic enamel paing of required shade complet as directed by Engineer-iin-charge.
	100mm dia (on terrace lvl.)
	Supplying, fixing, testing and commissioning of butterfly valve PN 1.6, with Bronze/Gunmetal seat duly ISI marked complete with Nuts, Bolts, washers, gaskets, confirming to IS 13095, of following sizes as required.
	100 mm dia
	Providing, installation, testing and commissioning of dual plate non-return valve of following sizes confirming to IS 5312 complete with rubber gasket, GI bolts, nuts, washers etc. as required.
	100 mm dia
	SUB HEAD -II: INTERNAL HYDRANT, PIPING & ACCESSORIES
	Supplying and fixing single headed internal hydrant valve with instantaneous Gunmetal/Stainless Steel coupling of 63 mm dia with cast iron wheel ISI marked conforming to IS 5290 (Type -A) with blank Gunmetal/Stainless Steel cap and chain as required :
	Single headed Gunmetal
	Supplying and fixing first-aid Hose Reel with MS construction spray painted in post office red, conforming to IS 884 complete with the following as required. 20 mm nominal internal dia water hose thermoplastic (Textile reinforced) type - 2 as per IS: 12585 20 mm nominal internal dia gun metal globe valve & nozzle. Drum and brackets for fixing the equipmets on wall. Connections from riser with 25 mm dia stop gun metal valve & M.S. Pipe and socket.
	30 m
	Supplying and fixing 63mm dia, 15 mtr long RRL hose pipe with 63mm dia male and female gun metal couplings duly binded with GI wire, rivets etc. confirming to IS 636 (type-A)as required.
	Gun Metal



	Supplying & fixing 63 mm dia gun metal short branch pipe with 20 mm nominal internal diameter size nozzle conforming to IS 903 suitable for instantaneous connection to interconnect hose pipe coupling as required
	Gun metal
	Supply & Fixing of Fire Man's Axe with heavy Insulated rubber tested up to 20 KV and confirming to IS ;926 as required.
	Providing & fixing 100mm dia bourden type, Stainless steel dial type pressure Gauge (0 - 16 Kg) range, 3 / 8" BSP bottom entry on Pump Delivery Line complete with Ball valve
	Providing and fixing M.S. fire hose door (Including door frame and all civil work and finishing) of size 900mm High x 600mm Wide x 900 mm Deep approx.Fabricated from 16 gauge M.S sheet.Provision for hole fasteners on both sides with double dore & frame with 2 nos locking arrangement with 2 nos tower bolts and Glazed with 4mm thick Float clear glass (glass panel to be fix in door panel - 700 mm from the bottom of the door and 100 mm from the top /sides of door panel) suitably marked on the outside with the letters "FIRE HOSE".all M.S. work to be stove in Enamled Fire Red Colour over appropriate primer (Front side P.O. Red Paint & inside white paint two coat).The width & height to depend upon the actual size of the fire shaft available.Contractor to make shop drawings and get it approved by Enginner -in-charge/Consultant before fabrication.(Cost shall be inclusive of providing break glass box containing key for the door)
	Providing & fixing of pressure switch in M.S Pipe including connection etc as required
	Providing laying, testing and commissioning of class 'C' heavy duty MS pipe confirming to IS 3589/1239 including fittings like elbows, tees, flanges, reducer, jointing with nuts bolts, gasket and welding etc. and supports, as required and painting with tow or more coats of synthetic enamel paing of required shade complet as directed by Engineer-iin-charge.
	100mm dia (vertical Pipe On Fhc.)
	80mm dia Drain (vertical Pipe On Fhc.)
	Providing and fixing inspection & testing assembly/drain assembly consist of following :-
	i) 25 mm dia Inspection Test Valve (Ball Valve) & Piping
	ii) Sight Glass
	iii) Union
	iv) 50 mm dia ball valve for drain with piping
	The arrangment shall be complete as per drawing and as per NBC provisions. The item will include all works from the sprikler header to the drain pipe.
	Providing and fixing of carbon-di-oxide type fire extinguishers consisting of welded M.S. cylindrical body, squeeze lever discharge valve fitted with pressure indicating guage internal discharge tube 30 cms long high pressure discharge hose, discharge nozzle, suspension bracket conforming to ID:15683 finished externally with red enamel paint and fixed to wall with brackets complete with internal charge.
	Capacity 4.5 Kg.



	Providing and fixing of ABC Powder type fire extinguishers consisting of welded M.S. cylindrical body, squeeze lever discharge valve fitted with pressure indicating guage internal discharge tube 30 cms long high pressure discharge hose, discharge nozzle, suspension bracket conforming to ID:15683 finished externally with red enamel paint and fixed to wall with brackets complete with internal charge.
	Capacity 4.0 Kg.
	SUB HEAD-IV : SPRINKLER SYSTEM & PIPING
	Providing laying, testing and commissioning of class 'C' heavy duty MS pipe confirming to IS 3589/1239 including fittings like elbows, tees, flanges, reducer, jointing with nuts bolts, gasket and welding etc. and supports, as required and painting with tow or more coats of synthetic enamel paiing of required shade complet as directed by Engineer-iin-charge.
	25 mm dia
	32 mm dia
	40 mm dia
	50 mm dia
	65 mm dia
	80 mm dia
	100 mm dia
	150 mm dia
	Providing, fixing, testing & commissioning of 15mm dia quartzoid bulb type sprinklers of rating 68 degree centigrade with required accessories :
	Pendent Sprinkler
	EXTERNAL FIRE FIGHTING WORK
	Supplying, Installation, Testing & Commissioning of Local Fire authority approved Electric Driven Main fire pump for Sprinkler / Hydrant applications suitable for automatic operation and consisting of following details given as A, B, C, D, E, F and G .
	Horizontal Single / Multi stage Centrifugal End suction, back pull type pump complete for delivery of below mentioned discharge , with necessary Butterfly valve on the suction side (all items to be matching with the suction side dia of the pump) and pressure gauge ,Butterfly valve and non return valve on the delivery side side (all items to be matching with the delivery side dia of the pump) and including bypass arrangement for Testing of pump
	Material of construction : Pump Casing - Cast Iron, Impellor - Bronze, Shaft - SS 410, Packing - Mechanical Seal
	Pump shall be capable of furnishing not less than 150 % of rated capacity at a head not less than 65 % of the rated head. The shut off head shall not exceed 120 % of rated head
	Squirrel cage induction motor suitable for 3 phase, 415 V, 50 HZ, Ac supply 2900 / 1450 RPM T.E.F.C confirming to IP:55 , of required HP suitable for the above pump ,along with flexible coupling , coupling guard complete in all respect .
	Common bed plate fabricated from mild steel channel for installation of pump and Motor
	Pump is to be inspected by third party like RITES / PDIL at manufacturer's premises and inspection report is to be submitted.
	Suitable cement concreat foundation duly plastered with anti vibration pads.
	2280 lpm at 70 m Head
	SITC of Local fire authority approved Diesel Engine driven Pump suitable for automatic operation as per discharge defined beolw consisting of the following details given as A, B, C, D, E and F .

	Horizontal Single / Multi stage Centrifugal End suction, back pull type pump complete for delivery of below mentioned discharge complete with necessary flexible pipe, Butterfly valve on the suction side (all items to be matching with the suction side dia of the pump) and pressure gauge ,Butterfly valve and non return valve on the delivery side side (all items to be matching with the delivery side dia of the pump) and including bypass arrangement for Testing of pump
	Material of construction : Pump Casing - Cast Iron, Impellor - Bronze, Shaft - SS 410, Packing - Mechanical Seal
	Pump shall be capable of furnishing not less than 150 % of rated capacity at a head not less than 65 % of the rated head. The shut off head shall not exceed 120 % of rated head
	Radiator cooled Diesel Engine developing suitable BHP for the below mentioned discharge at 1500 / 1800 RPM, flexible coupling and coupling guard with the Pump, common bed plate for mounting of the Engine and Pump,Antivibration damping arrangement by cushy foot, Diesel Engine starting Panel for starting of the engine automatically if the Normal electrical supply fails with a unit of battery bank of 12/24v,180 Ah, Lead Acid Battery with Boost / Trickle charger as required for operation of Diesel engine, Exhaust Pipe of suitable diameter minimum 10 M length, with muffler, day oil tank of 300 lts capacity with first charge and hand operated oil pumping set,
	Pump is to be inspected by third party like RITES / PDIL at manufacturer's premises and inspection report is to be submitted.
	Suitable cement concreat foundation duly plastered with anti vibration pads.
	2280 lpm at 70 m Head
	SITC of Local fire authority approved Horizontal single stage Jockey pump with CI Body, Bronze impellor, SS shaft, mechanical seal coupled with Squirrel cage induction motor for automatic operation suitable for three phase, 415 V, 50 Hz AC supply with synchronous speed of 2900 RPM ,T.E.F.C type confirming to IP:55 with flexible coupling and coupling guard with the pump ,Common bed plate fabricated from mild steel channel , Suitable cement concreat foundation duly plastered with anti vibration pads.
	180 lpm at 70 m Head
	Providing laying, testing and commissioning of class 'C' heavy duty MS pipe confirming to IS 3589/1239 including fittings like elbows, tees, flanges, reducer, jointing with nuts bolts, gasket and welding etc. and supports, as required and painting with tow or more coats of synthetic enamel paiing of required shade complet as directed by Engineer-iin-charge.
	200mm dia
	150mm dia
	Supplying, fixing, testing and commissioning of butterfly valve PN 1.6, with Bronze/Gunmetal seat duly ISI marked complete with Nuts, Bolts, washers, gaskets, confirming to IS 13095, of following sizes as required.
	200 mm dia
	150 mm dia
	Providing, installation, testing and commissioning of dual plate non-return valve of following sizes confirming to IS 5312 complete with rubber gasket, GI bolts, nuts, washers etc. as required.
	200 mm dia
	150 mm dia
	Providing & fixing 100mm dia bourden type, Stainless steel dial type pressure Gauge (0 - 16 Kg) range, 3 / 8 " BSP bottom entry on Pump Delivery Line complete with Ball valve
	Supplying and fixing air vessel made of 250 mm dia, 8mm thick MS sheet, 1200 mm. in height with air release valve on top and flanged connection to riser, drain arrangement with 25mm dia gun metal wheel valve, with required accessories, pressure gauge a and painting with synthetic enamel paoint of approved shade as required.
	Providing and fixing Pressure switch in the MS pipe Line including connection etc. as required.
	Providing and fixing Gear operated Gate Valve connection etc. as required.
	Providing, installation, testing and commissioning of stainless steel Y-strainer fabricated out of 1.6 mm thick stainless steel, Grade 304, sheet with 3 mm dia holes with stainless steel flange.
	150mm dia



	SITC of floor mounted dust and vermin proof compartmentalised cubical type main fire pump house panel made out of CRCA sheet , required hardware ,duly treated for derusting in 7 tank process with dephosphating and with powder coating on both side of panel in desired shade The panel having PU/ Neoprene rubber gasket of not less than 3mm thickness , separate detachable gland plate M.S. base channel ,hinged door with locking arrangement for equipment/switchgear . Thickness of sheet shall not be less than 1.6 mm up to 600 mm length / width of any compartment and be of 2.0 mm above 600 mm. Load bearing structure shall be of 2.0 mm thick sheet supported by base M.S. channel if required . Side walls and cable alley compartments having bolted type doors and having accessories (Group -I) as below:
	Incomer
	400A, 50kA 4 Pole MCCB, Ics=100% Icu rating Digital Voltmeter 0-500V with selector switch Ammeter (0-400 A) with selector switch & CTs etc. LED type RYB phase indicating lamps, ON, OFF, trip indicating lamps Set of Copper Bus Bar 500A
	Out going
	Main Fire Pump
	200 A, 50kA TPN MCCB, Ics=100% Icu, with fully automatic Star/Delta starter suitable for 75 hp pump with overload protection, current sensing type single phase preventor complete with all accessories and internal wiring required for automatic operation, selector switch for local/remote, auto/manual/OFF operation.- 2 Sets
	Jockey Pump
	100 A, 50kA TPN MCCB, Ics=100% Icu, with suitable HP fully automatic Star/Delta starter with overload protection, current sensing type single phase preventor complete with all accessories and internal wiring required for automatic operation, selector switch for local/remote, auto/manual/OFF operation. - 2 Set
	Diesel Engine Control
	Control for diesel engine comprising - Automatic/Manual selector switch & 3 attempt starting device, timers and relays as required, push buttons, start/stop in manual mode Indicating lamp for high/ Low Lub. Oil pressure, High Water Temp and Engine on indication Battery charger suitable for 12V/24 V DC with boost and trickle selector switch, 0-30 V DC volt meter, and 0- 20 A DC Ammeter All standard relays and accessories for automatic operation of diesel engine System Controller Designing, Supply, Installation, Testing and commissioning of system controller to control operation of main electric fire pump, diesel pump, Pressurization pump, Terrace pump in sequence as per specification consisting of relays, timers. Sensors, annunciation window for fault indication, complete as per specifications.
	SUB HEAD-II EXTERNAL HYDRANTS , PIPING & ACCESSORIES
	Supplying and fixing Single headed external yard hydrant valve with 1 No. 63 mm dia instantaneous FM Gunmetal/Stainless Steel coupling and cast iron wheel, ISI marked, conforming to IS 5290 (type A) with blank Gunmetal/Stainless Steel cap and chain as required :
	Providing and fixing hose cabinet of size 750x600x250mm made of 2 mm thick MS sheet with 3 mm thick float glass doors in front painted "FIRE" in red paint i/c necessary locking arrangement suitable to accommodate external hydrant with butterfly valve 2NoS. 63Øx15m HOSE , 1 no branch pipe mounted on wall or raised brick platform& duly painted with post office red externally and white internally with synthetic enamel paint complete in all respects for external hydrant, as directed by Engineer-in- charge
	Supplying and fixing of fire brigade connection of cast iron body with gun metal male instantaneous inlet couplings complete with cap and chain as reqd. for suitable dia MS pipe connection conforming to IS 904 as required
	2 way-100 mm dia M.S. Pipe
	4 way - 150 mm dia M.S. Pipe
	Providing laying, testing and commissioning of class 'C' heavy duty MS pipe conforming to IS 3589/1239 including fittings like elbows, tees, flanges, reducer, jointing with nuts bolts, gasket and welding etc. and supports, as required and painting with two or more coats of synthetic enamel painting of required shade complete as directed by Engineer-in-charge.
	150 mm dia
	Supplying & fixing 63 mm dia gun metal short branch pipe with 20 mm nominal internal diameter size nozzle conforming to IS 903 suitable for instantaneous connection to interconnect hose pipe coupling as required :(Gun metal)

	Supplying, fixing, testing and commissioning of butterfly valve PN 1.6, with Bronze/Gunmetal seat duly ISI marked complete with Nuts, Bolts, washers, gaskets, confirming to IS 13095, of following sizes as required.(2 way 4 way fire brigade)
	80 mm dia

A handwritten signature in black ink, featuring a stylized 'M' and 'S' followed by a long horizontal stroke.