Bill of Quantities

Contract Package No. and Title: CLC/RLC-5; Construction of Government Polytechnic for Women at Rehan District Kangra (HP); (SH:- Construction of Building Portion including Water Supply, Sanitary Installation, Electrical Installation and Site Development, Boundary Walls & Rain Water Harvesting System).

| **Sl. No.** | **Description of work** | **No.or Qty.** | **Unit** | **Rate** | | **Amount** |
| --- | --- | --- | --- | --- | --- | --- |
| **In Figure** | **In Words** |
|  | Cutting in earth work in all kind of classification of soil such as pick work, pick jumper work, blasting work , hard blasting or any other mixed classification of soil including dressing of sides and bed and disposing of all excavated earth in all leads and lifts,disposed earth to be leveled and neatly dressed including carriage of materials within all leads and lifts and other incidentals charges. | 2422.20 | Cubic meter |  |  |  |
|  | Earth work in excavation for all type of road structure such as retaining walls, breast walls, culverts , drains and parapets etcetra in all type of classification of soil comprising of ordinary soil, ordinary rock, hard rock chiseling /wedging out rocks ( Where blasting is prohibited) as per drawings and M.O.R.D. technical specification clause 305.1 and disposal of materials upto any lead and upto any lift including dressing of sides and bottom and back filling in trenches with excavated suitable approved material to the original surface in layers not exceeding 150mm ( one hundred fifty millimeters ) compacted thickness including shoring and strutting and pumping and bailing out water (surface and sub soil water ) upto any depth and any quantam of water including cleaning of slush which may arrise out during dewatering as per entire satisfaction and as per the direction of Engineer-in-Charge including carriage of materials within all leads and lifts. | 1225.00 | Cubic meter |  |  |  |
|  | Excavation in foundation, trenches etcetera in earth work in all kind of classification of soil such as pick work, jumper work, and pick jumper work. jumper blasting work , soft and hard blasting and doing work in saturated soil conditions unto any depth and lift including chiseling or wedging out rock where blasting work is prohibited or any other mixed variety of soil including shoring, strutting dewatering and pumping or bailing out water ( surface and sub soil water ) upto any depth or any quantum of water including slush which may arise during dewatering, removal of slush and stacking the serviceable and unserviceable material clear from the edges of excavation as directed by the Engineer-in-charge and then returning the stacked soil in 15 cm ( fifteen centimeters ) layers when required into plinths and sides of foundation etcetera consolidating each deposited layer by ramming and watering and then disposing of all surplus unserviceable excavated earth as directed within all leads and lifts disposed materials to be neatly dressed levelled as directed by the Engineer-in Charge including carriage of materials within all leads and lifts and other incidental charges | 5357.4 | Cubic meter |  |  |  |
|  | Excavation in drains and channels etcetera in all kinds of classification of soil such as pick work, jumper work, pick jumper work, blasting work , soft and hard blasting or any other mixed classification of soil including chiseling or wedging out rock where blasting work is prohibited or any other mixed variety of soil including shoring, strutting dewatering and pumping or bailing out water ( surface and sub soil water ) upto any depth or any quantum of water including cleaning of slush which may arise out during dewatering including dressing of sides and bed and disposing of all excavated earth in all leads and lifts and then returning the stacked soil in 15cm (fifteen centimeters )layers when required into plinths and sides of foundation etcetera consolidating each deposited layer by ramming and watering and then disposing of all surplus unserviceable excavated earth upto any leads and lifts and disposed materials to be neatly dressed levelled as directed by the Engineer-in Charge including carriage of materials within all leads and lifts and other incidental charges | 504.39 | Cubic meter |  |  |  |
|  | Excavation in earth work in all kinds of classification of soil as per direction of Engineer-in- charge and banking in layers including breaking clods,ramming and dressing ground for the purpose of making embankment or filling up ground depressions as per HPPWD specifications.The excavated materials to be used in banking shall be free of logs, stumps, roots, rubbish or any other in gradient likely to deteriorate or effect the stability of embankment and it shall be laid/ deposited in layers not exceeding 20cm (Twenty centimeters) loose thickness and shall be thoroughly compacted to the direction as per specifications including carriage of materials within all leads and lifts and other incidental charges. | 2513.28 | Cubic meter |  |  |  |
|  | Excavation in earth work in all kinds of classification of soil as per direction of Engineer-in- charge and filling foundation and plinth in layers including breaking clods,ramming,watering and consolidating as per HPPWD specifications.The excavated materials to be used in foundation and plinth shall be free of logs, stumps, roots, rubbish or any other in gradient likely to deteriorate or effect the stability of foundation and loose thickness shall be thoroughly compacted to the direction as per specifications including carriage of materials within all leads and lifts and other incidental charges. | 148.65 | Cubic meter |  |  |  |
|  | Filling in plinth with sand under floor including watering, ramming ,consolidating and dressing complete as directed by the Engineer-in Charge including carriage of materials within all leads and lifts and other incidental charges | 895.23 | Cubic meter |  |  |  |
|  | Back filling with granular materials behind abutment, wing wall and return wall , retaining walls complete as per drawings and MORD. technical specification Clause 1204.3.8 and as per entire satisfaction/ direction of Engineer – in- Charge including carriage of materials within all leads and lifts and other incidental . The rate including octroi, royality, Malkana, toll tax, sale tax or other taxes imposed by the Government | 713.42 | Cubic meter |  |  |  |
|  | Providing form work with steel plates 3.15mm(three point one five millimeters) thick welded with angle iron in frame 30x30x5mm(thirty into thirty into five millimeters),so as to give a fair finish including centering ,shuttering, strutting and propping etcetera with wooden battens and ballies, height of propping and centering in all heights below supporting floor to ceiling upto any height and removal of the same for in situ reinforced concrete and plain concrete work in foundation, footing, basis of column etc. and mass concrete including carriage of materials within all leads and lifts | 3010.56 | Square meter |  |  |  |
|  | Providing form work with steel plates 3.15mm(three point one five millimeters)thick welded with angle iron in frame 30x30x5mm(thirty into thirty into five millimeters),so as to give a fair finish including centering ,shuttering, strutting and propping etcetera with wooden battens and ballies, height of propping and centering in all heights below supporting floor to ceiling and removal of the same for in situ reinforced concrete and plain concrete work in flat surfaces such as soffits of suspended floors, roofs, landings , shelves and the like floor etc. upto any in all thickness including carriage of materials within all leads and lifts. | 12095.72 | Square meter |  |  |  |
|  | Providing form work with steel plates 3.15mm(three point one five millimeters)thick welded with angle iron in frame 30x30x5mm(thirty into thirty into five millimeters),so as to give a fair finish including centering ,shuttering, strutting and propping etcetera with wooden battens and ballies, height of propping and centering in all heights below supporting floor to ceiling upto any height and removal of the same for in situ reinforced concrete and plain concrete work in Columns, pillars post and struts (square rectangular or polygonal in plan in any heights / thickness/depths etcetera upto all foor level including carriage of materials within all leads and lifts | 6632.58 | square meter |  |  |  |
|  | Providing form work with steel plates 3.15mm(three point one five millimeters) thick welded with angle iron in frames 30x30x5mm(thirty into thirty into five millimeters),so as to give a fair finish including centering ,shuttering, strutting and propping etcetera with wooden battens and ballies, height of propping and centering in all heights below supporting floor to ceiling upto any height and removal of the same for in situ reinforced concrete and plain concrete work in Beams, cantilevers, girders and lintels, sides of soffits of beams, beams haunchings, girders, cantilevers, bressumers and lintels upto any depth /heights upto all floor level including carriage of materials within all leads and lifts. | 10553.9 | square meter |  |  |  |
|  | Providing form work with steel plates 3.15mm (three point one five millimeters) thick welded with angle iron in frame 30x30x5mm(thirty into thirty into five millimeters),so as to give a fair finish including centering ,shuttering, strutting and propping etcetera with wooden battens and ballies, height of propping and centering in all heights below supporting floor to ceiling upto any height and removal of the same for in situ reinforced concrete and plain concrete work in stair cases with sloping or stepped soffits excluding landing upto all floor level including carriage of materials within all leads and lifts. | 314.82 | square meter |  |  |  |
|  | Providing form work with steel plates 3.15mm(three point one five millimeters) thick welded with angle iron in frame 30x30x5mm(thirty into thirty into five millimeters),so as to give a fair finish including centering ,shuttering, strutting and propping etcetera with wooden battens and ballies, height of propping and centering in all heights below supporting floor to ceiling upto any height and removal of the same for in situ reinforced concrete and plain concrete work in edges of slabs and breaks in floors and walls upto any width etcetera upto all floor level including carriage of materials within all leads and lifts | 2590.44 | Running meter |  |  |  |
|  | Providing form work with steel plates 3.15mm(three point one five millimeters) thick welded with angle iron in frame 30x30x5mm(thirty into thirty into five millimeters),so as to give a fair finish including centering ,shuttering, strutting and propping etcetera with wooden battens and ballies, height of propping and centering in all heights below supporting floor to ceiling upto any height and removal of the same for in situ reinforced concrete and plain concrete work in vertical surfaces such as walls (any thickness) partitions and the like including attached pillasters, buttresses, plinth and string courses and the like etcetera upto all floor level including carriage of materials within all leads and lifts. | 177.5 | square meter |  |  |  |
|  | Providing and laying cement concrete 1:5:10 ( one cement; five sand; ten graded stone aggregate 40mm nominal size ) with 15% (fifteen percent ) plum and curing complete including cost of form work in plain / cement concrete in Retaining walls, breast walls, the size of plum shall usually be 150mm to 300mm (one hundred fifty millimeters to three hundred millimeters ) as per drawings and HP.PWD. technical specifications and as per entire satisfaction and as per the direction of Engineer-in-Charge including carriage of materials within all leads and lifts and other incidential. The rates including octroi, royality, malkana, toll tax , sale tax or any other taxes imposed by the Government. | 170.07 | cubic meter |  |  |  |
|  | Providing and laying cement concrete 1:4:8 (one cement; four sand : eight graded /crushed stone aggregate 40mm(forty millimeters) nominal size ) mixed and vibrated mechanically and curing complete excluding the cost of form work in foundation and plinth in all depths including carriage of materials within all leads and lifts and other incidental charges. | 1276.04 | cubic meter |  |  |  |
|  | Providing and laying mechanically mixed and vibrated cement concrete for plain / reinforced concrete in open foundation for all type of structure complete of plain cement concrete grade M-10 ( M-ten ) nominal mix 1:3:6 ( one cement: three sand: six graded /crushed stone aggregate 40mm) ( forty millimeters ) nominal size in or under water and curing complete including pumping, or bailing out water , dewatering, removal of slush, as required at site which may arise at the time of laying under water complete for all heights / depths including cost of form work as per drawings and M.O.R.D. technical specifications clause 802, 803, 1202 and 1203 as per directions of Engineer-in- charge and including carriage of material within all leads and lifts and other incidental . The rate including of octroi, royalty, Malkana, toll tax, sale tax or other taxes imposed by the Government | 175.00 | cubic meter |  |  |  |
|  | Providing and laying mechanically mixed and vibrated cement concrete for plain / reinforced concete in sub structure for all type of structure complete of plain cement concrete grade M-15 (M-fifteen ) nominal mix 1:2½:5 ( one cement; two and half sand : five graded creushed stone aggregate 20mm ( twenty millimeters ) including cost of form work as per drawings and M.O.R.D. technical specifications clause 802, 804, 805, 806 , 807 1202 and 1204 as per directions of Engineer-in- charge and including carriage of material within all leads and lifts and other incidential . The rate including of octroi, royality, Malkana, toll tax, sale tax or other taxes imposed by the Government | 360.00 | cubic meter |  |  |  |
|  | Providing and laying mechanically mixed and vibrated cement concrete for plain / reinforced concrete for all type of structure complete of plain cement concrete grade M-25 nominal mix ( 1:1½:3 (one cement; one and half sand : three graded /crushed stone aggregate 20mm ( twenty millimeters ) nominal size, and curing complete including cost of form work excluding cost of reinforcement in super structures as per drawing and technical specifications clause 800 and 1205.4, and 1205.5 as per directions of Engineer-in- charge and including carriage of material within all leads and lifts and other incidental . The rate including of octroi, royalty, Malkana, toll tax, sale tax or other taxes imposed by the Government | 218.75 | cubic meter |  |  |  |
|  | Providing and laying damp proof course 100mm ( one hundred millimeters ) thick with cement concrete 1:2: 4 (one cement; two sand four graded /crushed stone aggregate 12.5mm (twenty point five millimeter) nominal size and including the form work and curing complete in all floors including carriage of materials within all leads and lifts and other incidental charges as per approved drawings , design, and as directed by Engineer in charge. | 503.2 | square meter |  |  |  |
|  | Applying a coat of hot bitumen (mexphalt 80/100 ( eighty/ one hundred ) or equivalent) using 1.70 Kg(one point seven zero) Kilogramme. per square meter on damp proof course after cleaning the surface with a piece of cloth lightly socked in kerosene oil complete including carriage of material with in all leads and lifts and other incidential as per approved drawings , design, and as directed by Engineer in charge. | 878.61 | square meter |  |  |  |
|  | Providing and laying cement concrete grade M-25(M-Twenty five) design mix to obtain the minimum compressive strength of 20 N/mm² (twenty newton per square milimeters)with cement contents not less than 400 kg ( four hundred kilogramme) per cubic meter mixed and vibrated and mechanically mixed and curing complete excluding cost of form work and reinforcement for reinforced concrete work in foundation, footings, bases of columns and the like in all depths/ thickness etcetra up to all floor level including carriage of materials within all leads and lifts other incidental charges as per approved drawings , design, and as directed by Engineer in charge. | 1886.92 | cubic meter |  |  |  |
|  | Providing and laying cement concrete grade M-25(M-Twenty five) design mix to obtain the minimum compressive strength of 20 N/mm² (twenty newton per square milimeters) with cement contents not less than 400 kg ( four hundred kilogramme) per cubic vibrated and mechanically mixed and curing complete excluding cost of form work and reinforcement for reinforced concrete work in columns, pillars, posts and struts in all depths/ thickness up to all floor level including carriage of material within all leads and lifts other incidental charges as per approved drawings , design, and as directed by Engineer in charge. | 3152.96 | cubic meter |  |  |  |
|  | Providing and laying cement concrete grade M-25(M-Twenty five) design mix to obtain the minimum compressive strength of 20 N/mm² (twenty newton per square milimeters) with cement contents not less than 400 kg ( four hundred kilogramme) per cubic vibrated and mechanically mixed and curing complete excluding cost of form work and reinforcement for reinforced concrete work in columns, pillars, posts and struts in all depths/ thickness up to all floor level including carriage of material within all leads and lifts other incidental charges as per approved drawings , design, and as directed by Engineer in charge. | 673.46 | cubic meter |  |  |  |
|  | Providing and laying cement concrete grade M-25(M-Twenty five) design mix to obtain the minimum compressive strength of 20 N/mm² (twenty newton per square milimeters) with cement contents not less than 400 kg ( four hundred kilogramme) per cubic vibrated and mechanically mixed and curing complete excluding cost of form work and reinforcement for reinforced concrete work in stair cases ( except spiral stair cases) excluding landing but including preparing of top surfaces and finishing of nosing upto all floor level including carriage of materials within all leads and lifts other incidental charges as per approved drawings , design, and as directed by Engineer in charge. | 48.6 | cubic meter |  |  |  |
|  | Providing and laying cement concrete grade M-25(M-Twenty five)design mix to obtain the minimum compressive strength of 20 N/mm² (twenty newton per square milimeters) with cement contents not less than 400 kg ( four hundred kilogramme) per cubic vibrated and mechanically mixed including to give smooth and even surfaces including centering shuttering etcetera but excluding cost of reinforcement in walls including attached buttresses, pilasters and their caps and basis and string course etcetera as per approved drawing and design and curing complete excluding cost of reinforcement upto all floors including carriage of materials within all leads and lifts and other incidental | 21.28 | cubic meter |  |  |  |
|  | Providing and laying cement concrete grade M-25(M-Twenty five) design mix to obtain the minimum compressive strength of 20 N/mm² (twenty newton per square milimeters) with cement contents not less than 400 kg ( four hundred kilogramme) per cubic vibrated and mechanically mixed and curing complete in reinforced concrete chajjas not exceeding 10cm ( ten centimeter ) and or any thickness upto all floor level including finishing the exposed surface with cement mortar 1:3 ( one cement: three sand ) to give a smooth and even surface including centering / form work but excluding reinforcement including carriage of materials within all leads and lifts and other incidental as per approved drawings , design, and as directed by Engineer in charge . | 77.86 | cubic meter |  |  |  |
|  | Providing and laying cement concrete grade M-25(M-Twenty five)design mix to obtain the minimum compressive strength of 20 N/mm² (twenty newton per square milimeters) with cement contents not less than 400 kg ( four hundred kilogramme) per cubic vibrated and mechanically mixed including to give smooth and even surfaces including centering shuttering etcetera but excluding cost of reinforcement in moulding , cornics, s etcetera not exceeding 15cm ( fifteen centimeter ) in girth where required as per approved drawing and design and curing complete excluding cost of reinforcement upto all floors including carriage of materials within all leads and lifts and other incidental | 12.4 | cubic meter |  |  |  |
|  | Providing and laying cement concrete grade M-25(M-Twenty five)design mix to obtain the minimum compressive strength of 20 N/mm² (twenty newton per square milimeters) with cement contents not less than 400 kg (four hundred twenty kilogramme) per cubic vibrated and mechanically mixed including to give smooth and even surfaces including centering shuttering etcetera but excluding cost of reinforcement in moulding , plain window sills etcetera not exceeding 15cm ( fifteen centimeter ) in girth where required as per approved drawing and design and curing complete excluding cost of reinforcement upto all floors including carriage of materials within all leads and lifts and other incidental | 26.87 | cubic meter |  |  |  |
|  | Providing and laying mild/ tor steel reinforcement for reinforced cement concrete work including bending, binding and placing in position complete in all heights including cost of binding wire for all floors including carriage of materials within all leads and lifts and other incidentials. | 1064613.18 | Kilogram |  |  |  |
|  | Supplying ,fitting and placing HYSD bar reinforcement in all type of structures complete as per drawing and technical specification clause 1002, 1010 and 1202 as per directions of Engineer-in- charge and including carriage of material within all leads and lifts and other incidential . The rate including of octroi, royality, Malkana, toll tax, sale tax or other taxes imposed by the Government | 26.25 | Metric tonne |  |  |  |
|  | Brick masonry using second class common burnt clay building bricks in foundation and plinth in cement mortar 1:6 ( one cement: six sand ) and curing complete as per drawings and directions of Engineering charge including carriage of material within all leads and lifts and other incidental. | 1181.98 | cubic meter |  |  |  |
|  | Brick masonry using second class common burnt clay building bricks in super structure above plinth level in all heights / floor level in cement mortar 1;6( one cement; six sand)and curing complete including carriage of materials within all leads and lifts and other incidental charges and as per direction of Engineer in charge . | 2792.77 | cubic meter |  |  |  |
|  | Second class half brick masonry in common burnt clay building bricks in super- structure above plinth level upto floor any level in cement mortar 1:4 (One Cement : four sand ) and curing complete including carriage of materials within all leads and lifts and other incidental charges and as per direction of Engineer in charge. | 2652.32 | square meter |  |  |  |
|  | Brick edging ( Brick laid on edge) to plinth protection with bricks including grounting with cement mortar 1:4 ( one cement: four sand ) with bricks size 22.9 x 11.2 x 7 cm ( twenty two point nine into eleven point two into seven centimeter ) and curing complete including carriage of materials within all leads and lifts and other incidental charges and as per direction of Engineer in charge. | 364.68 | Square  meter |  |  |  |
|  | Square rubble masonry coursed with hard stone of approved quality in foundation and plinth in mass including racking out joints in cement mortar 1:4(one cement: four sand) and curing complete including carriage of materials within all leads and lifts and other incidental as per approved drawings , design, and as per direction of Engineer in charge . | 1460.84 | cubic meter |  |  |  |
|  | Providing smooth finishing to exposed surface of reinforced cement concrete or cement concrete work with cement mortar 1:3 (one cement three sand)complete in all floor/heights and curing complete including carriage of materials within all leads and lifts | 398.76 | Square meter |  |  |  |
|  | Providing and fixing 35mm ( thirty five millimeters ) thick factory made flush door shutters commercial both side including non-decorated phenol bonded termite resistant and water proof core of block board construction with frame of first class hard wood and well matched first class Indian teak ply veneering with vertical grains of cross bands and face veneers on one face and commercial ply veneering with vertical grains of cross bands on other face of shutters including black enamelled Mild steel butt hinges and or as directed by the Engineer-in-Charge, including carriage of materials within all leads, lifts and other incidental charges. | 1422.41 | square meter |  |  |  |
|  | Providing and fixing 40mm(forty millimeters) thick second class deodar wood wire gauge shutters using galvanized Mild steel wire gauge of I.S. gauge designation 85-G ( eighty five-G )with wire of dia 0.56mm (zero point five six millimeters)for doors, windows, and clerestory windows including first class deodar wood ornamental beading 20mm x 12.5mm ( twenty millimeter into twelve point five millimeters ) bright finished / black enamelled iron butt hinges with necessary screws including carriage of material with in all leads and lifts and other incidental charges and as directed by the Engineer in charge. | 325.66 | square meter |  |  |  |
|  | Supplying and fixing rolling shutters having width below 3.5 metres. of approved make made of 80 mm X 1.25mm M.S laths interlocked together through their entire length and joined 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 pull operation complete but excluding the cost of th | 30.06 | square meter |  |  |  |
|  | Providing and fixing top cover for rolling shutters. Shutters having width blow 3.5 metre. omplete including carriage of materials within all leads and lifts and other incidental charges and as per direction of Engineer in charge. | 7 | Number |  |  |  |
|  | Providing and fixing ball bearing for rolling shutters complete including carriage of materials within all leads and lifts and other incidental charges and as per direction of Engineer in charge. | 25.80 | Number |  |  |  |
|  | Providing and fixing 27.5 long wire spring grade No.2 for rolling shutters complete including carriage of materials within all leads and lifts and other incidental charges and as per direction of Engineer in charge. | 7 | Number |  |  |  |
|  | Providing and fixing Gear box including necessary screws complete in all respect ,including carriage of materials in all leads and lifts and other incidental. | 25.2 | Number |  |  |  |
|  | Providing and fixing Mild Steel plain grills of required pattern in angle iron frame of windows etc. with M.S.flats and square or round bars with round headed bolts and nuts or by screws including welding with frame complete in all respect including carriage of materials in all leads and lifts and as directed by the Engineer in charge. | 22885.36 | kilogram |  |  |  |
|  | Providing and fixing 50mm (Fifty milimetres) size bright finished brass cup board or ward rob knobs etcetera complete in all respect, including carriage of materials in all leads and lifts and other incidental. | 277 | Number |  |  |  |
|  | Providing and fixing 65x35mm (Sixty five into thirty five milimetres) size bright finished aluminum cup board or ward rob lock with six leavers including necessary screws complete in all respect ,including carriage of materials in all leads and lifts and other incidental. | 217 | Number |  |  |  |
|  | Providing and fixing chromium plated brass sliding door bolts with nuts and screws etc. including carriage of materials in all leads and lifts and other incidental. 300x16mm.(Three hundred into sixteen milimetres ) | 181 | Number |  |  |  |
|  | Providing and fixing chromium plated brass sliding door bolts with nuts and screws etc. including carriage of materials in all leads and lifts and other incidental. 250x16mm.(Two hundred fifty into sixteen milimetres ) | 332 | Number |  |  |  |
|  | Providing and fixing anodized aluminum tower bolts, (Barrel type)anodized transparent or dyed to required colour and shade with bolts and nuts/screws etc. complete including carriage of materials with in all leads and lifts and other incidental. 250 x 10mm (two hundred fifty into ten millimeter). | 1372 | Number |  |  |  |
|  | Providing and fixing anodized aluminum tower bolts, (Barrel type)anodized transparent or dyed to required colour and shade with bolts and nuts/screws etc. complete including carriage of materials with in all leads and lifts and other incidental. 150 x 10mm (one hundred fifty into ten millimeter). | 4374 | Number |  |  |  |
|  | Providing and fixing aluminum handles anodized transparent or dyed to required colour and shade with necessary screws etc. complete as per HPPWD specifications or as directed by the Engineer-in-Charge, including carriage of materials within all leads, lifts and other incidentals. 125mm ( one hundred twenty five millimeters ) | 1492 | Number |  |  |  |
|  | Providing and fixing aluminum handles anodized transparent or dyed to required colour and shade with necessary screws etc. complete as per HPPWD specifications or as directed by the Engineer-in-Charge, including carriage of materials within all leads, lifts and other incidentals. 100mm ( one hundred millimeters ) | 3660 | Number |  |  |  |
|  | Providing and fixing 12mm (twelve millimeters) thick and 150mm (one hundred fifty millimeters ) wide first class deodar wood pelmet with 25mm (twenty five millimeter ) dia meter wooden curtain rod and brackets including fixing with 25x3mm (twenty five into three millimeter ) mild steel flat 10 cm ( ten centimeters ) long and plugs etcetera complete with necessary screws including carriage of materials within all leads and lifts and other incidental and as directed by the Engineer in-charge. | 374.93 | Running meter |  |  |  |
|  | Providing and fixing brass curtain rail with rollers stop ends and brackets in pelmets instead of wooden curtain rod 25 mm ( twenty five millimeters) dia and brackets of first class deodar wood (actual length) of rails of be measured. including carriage of materials within all leads and lifts and other incidental and as directed by the Engineer in-charge. | 48.87 | Running meter |  |  |  |
|  | Providing and fixing aluminium door stopper with rubber cushion etc. to suit shutter of any thickness complete with necessary screws including carriage of materials within all leads and lifts and other incidental and as directed by the Engineer in-charge. | 673 | Number |  |  |  |
|  | Providing and fixing Hydraulic door closer ISI marked complete with necessary screws including carriage of materials within all leads and lifts and other incidental and as directed by the Engineer in-charge. | 241 | Number |  |  |  |
|  | Providing and laying 40 mm (forty millimeter ) thick mirror polished 55x55 cm ( fifty five into fifty five centimeter ) Kota stone slab flooring with 20 mm (twenty millimeter ) (average) thick base of cement mortor 1:4 (1 cement :4 sand) laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete upto all floor level or as per directions of Engineer in charge including carriage of materials within all leads and lifts and other incidental and as directed by the Engineer in-charge. | 8178.78 | Square meter |  |  |  |
|  | Kota stone slab 25mm ( twenty five millimeter) thick in risers of steps ,skirting dado and pillar laid on 12mm ( twelve millimeter) (average)thick cement mortar 1:3 (1cement :3 sand ) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs including rubbing and polishing complete upto all floor level including carriage of material within all leads and lifts and other incidental and as directed by the Engineer in-charge. | 609.99 | Square meter |  |  |  |
|  | Providing and laying granite stone in flooring 20mm (average)thickness base of cement mortar 1:3(one cement: three sand) laid over and jointed with grey cement slurry mixed with pigment to match the shade of granite stone including rubbing and polishing complete upto all floor level including carriage of material within all leads and lifts and other incidental and as directed by the Engineer in-charge. | 85.07 | Square meter |  |  |  |
|  | Providing and laying 40mm (forty millimeters) thick Cement concrete flooring 1:2:4 (one cement; two sand; four graded broken/ crushed stone aggregate 20mm (twenty millimeters) nominal size ) laid in one layer finished with a floating coat of neat cement upto all floor level and curing complete including carriage of materials with in all leads and lift other incidental charges and as per approved drawings/ design and as directed by the Engineer in charge. | 1346.42 | Square meter |  |  |  |
|  | Providing and laying 50 mm (Fifty millimeters) thick cement concrete flooring with metallic concrete hardner topping under layer of 35 mm thick cement concrete 1:2:4 (1cement:2 sand:4 graded stone aggregate 20 mm nominal size) and top layer of 15 mm thick metallic concrete hardner consisting of mix 1:2 (1 cement hardner mix : 2 stone aggregate 6 mm nominal size) by volume with which metallic hardening compound of approved quality is mixed in the ratio 4:1 (4 parts of cement: 1 part of metallic floor handening compound of approved quality by weight) including finishing complete. upto all floor level and curing complete including carriage of materials with in all leads and lift other incidental charges | 706.92 | Square meter |  |  |  |
|  | Providing and laying spartic ceramic tiles (non slippery ) of Kajaria./ nitco or its equivalent, size 300 x 300 mm ( three hundred into three hundred millimeters ) x 5.5mm ( five point five millimeters ) thick in treads of steps laid on a bed of 12mm ( twelve millimeters ) thick cement mortar 1:3 ( one cement : three sand ) finished with flush pointing in white cement complete including carriage of material within all leads and lifts and other incidental charges and as per approved drawings/ design and as directed by the Engineer in charge. | 669.96 | Square meter |  |  |  |
|  | White glazed tiles 6mm (six millimeters) thick 20x 30 cm ( twenty into thirty three centimeters ) of Kajaria/ Rak or its equivalent in skirting, risers of steps and dado for all heights on 12mm (twelve millimeter) thick cement mortar 1:3 ( one cement; three sand) and jointed with white cement slurry complete upto all floor level including carriage of materials within all leads and lifts and other incidental charges and as per approved drawings/ design and as directed by the Engineer in charge. | 2091.49 | Square meter |  |  |  |
|  | Providing and laying heavy duty vitrified tiles of size 600x600mmx10mm) ( six hundred into six hundred into ten millimeter ) of Kajaria / Rak or its equivalent tiles in grey / coloured of required approved shade in flooring, treads of steps and landing laid on a bed of 12mm ( twelve millimeters ) thick cement mortar 1:3 ( one cement: three sand) laid over and jointed with neat cement slurry finished with flush pointing in white cement mixed with pigment in white cement shade to match the shade of tiles complete including carriage of materials within all leads, lifts and other incidental charges and as per approved drawings/ design and as directed by the Engineer in charge. The rates includes royalty charges, octroi, sale tax ,malkana, and all other taxes as imposed y the Government. | 1062.57 | Square meter |  |  |  |
|  | Providing and laying vitrified matt finished of Kajaria / Rak or its equivalent tiles ( 600x600x8mm ) ( six hundred into six hundred into eight millimeters ) in grey /coloured or of required approved shade in skirting, risers of steps and dados laid on 12mm ( twelve millimeters ) thick cement mortar 1:3 ( one cement: three sand) laid over and jointed with neat cement slurry finished with flush pointing in white cement mixed with pigment in white cement shade to match the shade of tiles complete including carriage of materials within all leads, lifts and other incidental charges and as per approved drawings/ design and as directed by the Engineer in charge. The rates includes royalty charges, octroi, sale tax ,malkana, and all other taxes as imposed y the Government. | 45.81 | Square meter |  |  |  |
|  | Providing and laying 300 x 300 x25 mm( three hundred into three hundred millimeters into twenty five millimeter) thick vibro hydraulic compressed and polished precast terrazzo tiles of ISI marked IS No. 1237 of NTC or its equivalent in 70% (seventy percent) white and 30% (thirty percent) grey cement The ratio of chips shall be 55% (fifty five percent) white chips, 15% (fifteen percent ) of each Mahroon, yellow and dark green , having chips size 0.B.2B laid in floor, treads of steps and landings on a bed of 25mm (twenty five millimeter) average thickness of cement mortar 1 : 6 (one cement : six sand) jointed with neat cement slurry mixed with pigment to match the shade of tiles (wherever required) including rubbing and polishing completed with tiles of Silver Grey shade upto all floor level as per HPPWD specification or as directed by the Engineer-in-Charge including carriage of materials within all leads and lifts and other incidental. The rate inclusive of Malkhana, Royality Octroi, toll tax or any taxes imposed by the Government | 1127.67 | Square meter |  |  |  |
|  | Providing and laying 300 x 300 x25 mm( three hundred into three hundred millimeters into twenty five millimeter) thick vibro hydraulic compressed and polished precast terrazzo tiles of ISI marked IS No. 1237 of NTC or its equivalent in 70% (seventy percent) white and 30% (thirty percent) grey cement The ratio of chips shall be 55% (fifty five percent) white chips, 15% ( fifteen percent ) of each Mahroon, yellow and dark green , having chips size 0.B.2B laid in skirting, risers of steps not exceeding 30 cm ( thirty centimeter ) in height on 10mm (ten millimeter) average thickness of cement plaster 1 : 3 (one cement : three sand) jointed with neat cement slurry mixed with pigment to match the shade of tiles (wherever required) including rubbing and polishing completed with tiles of Silver Grey shade upto all floor level as per HPPWD specification or as directed by the Engineer-in-Charge including carriage of materials within all leads and lifts and other incidental. The rate inclusive of Malkhana, Royality Octroi, toll tax or any taxes imposed by the Government | 157.12 | Square meter |  |  |  |
|  | Providing and laying Extra for making moulded nosing in terrazzo including returned moulded ends and angles to mouldings complete and as directed by the Engineer- in-charge including carriage of materials within all leads, lifts of materials and other incidental charges and as per approved drawings/ design and as directed by the Engineer in charge. | 92 | Square meter |  |  |  |
|  | Providing and fixing 150mm (One hundred fifty milimtres) diameteres on wall face P.V.C. (D-plast) rain water pipes 2.2mm thick supreme or its equivalent conforming to IS NO. 13592-92 type-A of working pressure not less than 4.50 kgs(Four decimal five zero kilograms) per square centi- metre including filling the joints with approved adhesive complete and as directed by the Engineer- in-charge including carriage of materials within all leads, lifts of materials and other incidental charges and as per approved drawings/ design and as directed by the Engineer in charge. | 682.9 | running meter |  |  |  |
|  | Providing and fixing 75mm ( seventy five milimtres) diameteres on wall face P.V.C. (D-plast) rain water pipes 2.2mm thick supreme or its equivalent conforming to IS NO. 13592-92 type-A of working pressure not less than 4.50 kgs(Four decimal five zero kilograms) per square centimetre including filling the joints with approved adhesive complete and as directed by the Engineer- in-charge including carriage of materials within all leads, lifts of materials and other incidental charges and as per approved drawings/ design and as directed by the Engineer in charge. | 8 | Running meter |  |  |  |
|  | Providing and fixing 100mm (One hundred milimtres) diameters on wall face P.V.C. (D-plast) rain water pipes 2.2mm thick supreme or its equivalent conforming to IS NO. 13592-92 type-A of working pressure not less than 4.50 kgs(Four decimal five zero kilograms) per square centi- metre including filling the joints with approved adhesive complete and as directed by the Engineer- in-charge including carriage of materials within all leads, lifts of materials and other incidental charges and as per approved drawings/ design and as directed by the Engineer in charge. | 206.6 | Running meter |  |  |  |
|  | Providing and fixing on wall faces P.V.C. (D-plast) acessories for rain water pipes 2.2mm ( two point two millimeter ) thick supreme or its equivalent including filling the joints with approved adhesive complete and including carriage of materials within all leads, lifts and other incidentals as per approved drawing, design and as directed by the Engineer- in-charge 150mm (onr hundred fifty millimeters)diameter PVC Plain bend. | 100 | Number |  |  |  |
|  | Providing and fixing on wall faces P.V.C. (D-plast) accessories for rain water pipes 2.2mm thick supreme or its equivalent including filling the joints with approved adhesive complete and including carriage of materials within all leads, lifts and other incidentals as per approved drawing, design and as directed by the Engineer- in-charge 75mm (seventy five millimeters)diameter PVC Plain shoe. | 104 | Numbers |  |  |  |
|  | Providing and fixing 110mm (One hundred ten milimtres) diameters P.V.C. (D-plast) pipe 2.2mm thick suspreme or its equivalent for sockpit of working pressure not less than 4.50 kgs(Four decimal five zero kilograms) per square centi- metre including filling the joints with approved adhesive complete and as directed by the Engineer- in-charge including carriage of materials within all leads, lifts of materials and other incidental charges and as per approved drawings/ design and as directed by the Engineer in charge. | 17 | Running meter |  |  |  |
|  | Providing and fixing 75mm (seventy five millimeters) dia meter P.V.C (poliynial chloride ) holder bats clamps of approved design to P .V.C. pipes embedded in and including cement concrete block 100 mm x 100 mm x 100mm ( one hundred millimeters into one hundred millimeters into one hundred millimeters ) of 1:2:4 ( one cement : two sand: four graded stone aggregate 20mm ( twenty millimeters ) nominal size ) mix including cost of cutting holes and making good the wall etcetera complete including carriage of materials within all leads and lifts and other incidental | 598 | Number |  |  |  |
|  | Painting top of roofs with bitumen of approved Quality at 17 kg for 10 sqm. Impregnated with a coat of sand at 0.06cum per 10 sqm. Including cleaning the slab surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil Complete. With residual type petroleum bitumen of penetration 80/100 including carriage of materials within all leads and lifts and other incidental | 5377.51 | square meter |  |  |  |
|  | Providing and laying heat resistant terrace tiles over a 12 mm ( twelve millimeters ) layer of cement mortar 1 : 3 ( one Cement : three sand ) and finished neat and cement concrete 100 mm ( one hundred millimeters ) thick plain cement concrete 1:4:8 (one cement/ four sand/ eight graded stone aggregate 40mm nominal size ) over bitumen painted roof complete in all respect including carriage of materials within all leads and lifts and other incidental | 5377.51 | square meter |  |  |  |
|  | Making khurras 45x45cm ( forty five into forty five centimeters ) with average minimum thickness of 5 cm(five centimeter) cement concrete 1:2:4 (one cement :two sand: four stone aggregate of 20 mm ( twenty millimeters) nominal size) finished with 12 mm ( twelve millimeters ) cement plaster 1:3 ( one cement : three sand ) and coat of neat cement rounding the outlet complete including carriage of materials within all leads and lifts and other incidental | 4 | Numbers |  |  |  |
|  | Providing and fixing factory made double rebate steel shutters of windows side, top hung and fixed windows, (one side glazed and other wire gauged) standard rolled steel sections/steel Z-section and T-sections, T-hinges joints, metred and welded with manufactured relevant ISI standard specifications with 16x3.15mm ( sixteen into three point fifteen millimeters ) lugs 10 cm ( ten centimeter ) embedded in cement concrete block 15 x 10 x 10 cm ( fifteen into ten into ten centimeter ) of size in cement concrete 1:3:6 (one cement: three sand: six graded stone aggregate 20mm ( twenty millimeters ) nominal size three hundred six including handles with closing device and making provision of other windows fixtures, where required, including providing and fixing of 4mm (four millimeters) thick glass pans of Modi Guard with glazing clips and special metal sash putty of approved make for glazed shutters and metal beading with screws etcetera and including fixing of wire gauge using galvanized MS wire gauge of IS gauge designation 85-G (eighty five-G) with wire of 0.56mm (zero point five six millimeters) and for fixing wire mesh with MS flat 20x3mm (twenty into three millimeters) for beading and screws complete including frame with ISLC 75mmx40mm ( seventy five millimeter into forty millimeter ) applying a priming coat of approved steel primer after pretreatment of the surface as per HPPWD specifications or as directed by the Engineer-in-Charge, including applying a primer coat of red lead paint after pretreatment of the surface and carriage of materials within all leads, lifts and other incidentals. The rate inclusive Octroi, Toll Tax Sales tax or any other taxes imposed by the Government and as per direction of Engineer in-charge. | 656.03 | square meter |  |  |  |
|  | Providing and fixing angle iron cupboard frames manufactured from Mild steel Angle iron section 25X25X5mm ( twenty five into twenty five into five millimeter ) thickness including hinges jamb,lock jamb,beed and if required angle thrashold of mild steel angle 25X25 mm ( twenty five into twenty five millimeter ) welded or rigidly fixed by mechanical means,lugs with split end tails to each jamb including steel butt hinges 2.5 mm (two point five millimeter ) thick with provision for locking arrangement and shock absorber as specified and applying a coat of approved steel primer after preteatment of the surface as directed by Engineer-in-Charge including carriage of materials within all leads, lifts and other incidentals and as directed by Engineer in-charge. | 1398.84 | Running meter |  |  |  |
|  | Providing and fixing Mild steel channel 75x40 mm ( seventy five into forty millimeter ) for window frame manufactured from M.S. channel section 75 x40 x 4mm ( seventy five into forty into four millimeter) in combination and Mild steel flat 75 x 4mm (seventy five into four millimeter) as per design and drawings including hinges, jamb, lock Jamb, beeds if required thrashold of mild steel angle 50 x 25 mm (fifty into twenty five millimeter) or base of 1.25mm (one point twenty five millimeter) pressed steel welded or rigidly fixed by mechanical means lugs with split end tails to each jambs including steel butt hinges 2.5 mm (two point five millimeter) thick with provision for locking arrangement and shock observers as specified and applying a coat of approved steel primer after pretreatment of the surface or as directed by the Engineer-in-Charge, including applying a priming coat of red lead paint after pretreatment of the surface and carriage of materials within all leads, lifts and other incidentals and as directed by Engineer in-charge. | 751.92 | Running meter |  |  |  |
|  | Providing and fixing angle iron door frame single rebate manufacture for Mild steel angle iron 35x35x4 mm ( thirty five into thirty five into four millimeters and Mild steel flat 50x4 mm (fifty into four millimeter ) in combination as per drawing design including hings jambs lock jambs mild steel angle 50x25 mm ( fifty into twenty five millimeters ) welded or rigidly fixed by mechanical means lugs with split and tails to each jambs including steel butt hings 2.5 mm ( two point five millimeters ) thick with provision of locking arrangement and shock absorvers as specified and applying a coat of approved steel primer including carriage of materials within all leads, lifts and other incidentals and as directed by Engineer in-charge. | 2602 | Running meter |  |  |  |
|  | Providing and fixing Aluminium frame for doors, windows and ventilators consisting of Aluminium style No-2443. 127x38.10x1.35 mm(One hundred twenty seven into Thirty eight decimal one zero into One decimal Three five milimetres) of Jindal aluminium extrusions powder coated teak wood shade or equivalent and shutters for door consisting of aluminium style No-4524. 83.50x44.45x3mm(Eighty three decimal five zero into Forty four decimal four five into Three milimetres) of Jindal aluminum extrusion anodized in suede coated shade or its equivalent for top and side style meeting style double hung doors of aluminum style 4526. 85x44.50x1.80mm (Eighty five into Forty four decimal five zero into One decimal eight zero millimeters) of Jindal aluminum extrusions or equivalent lock and bottom rail of aluminum style 4538. 150x44.4x2.20 (One hundred fifty into Forty four decimal four zero into Two decimal two zero millimeters) of Jindal aluminum including infill panels of 12mm(Twelve millimeters) thick phenol bounded preliminated (Both sides) particle board. Panel ISI marked IS NO. 12823 including tower bolts handles, hinges hydraulic door closer, sliding door bolts stoppers with necessary screws of appropriate size including carriage of materials within all leads, lifts and other incidentials. | 2069.3 | kilogram |  |  |  |
|  | Providing and fixing shutters for doors, windows and ventilators consisting of Aluminium style NO-4531 47.62x44.45x3mm (Forty seven decimal six two into Forty four decimal four five into Three milimetres) for style of Jindal Aluminium extrusion anodized in suede coated shade or its equivalent including in fill panel of M.S. wire gauge of is gauge designation 85-G (eighty five-G) with wire of dia 0.56mm (zero point five six millimetres) Aluminium channel No-3055 for rebate of aluminium Jindal Aluminium extrusion including tower bolts, handles, hinges, hooks and eyes with necessary screws of appropriate size as per specification or as per approved drawing, design and as directed by the Engineer- Incharge including carriage of materials within all leads and lifts and other incidentials. | 2453.04 | kilogram |  |  |  |
|  | Providing and fixing Glazing with glass panes of 4mm thickness (weight not less than 10.00 kg/sqm. as per approved drawing, design and as directed by the Engineer- Incharge including carriage of materials within all leads and lifts and other incidentials. | 775.27 | square meter |  |  |  |
|  | Providing and fixing Glazing with glass panes of 6 mm ( six millimeters ) thickness (weight not less than 13.75 kg/ sqm. as per approved drawing, design and as directed by the Engineer- Incharge including carriage of materials within all leads and lifts and other incidentials. | 32.19 | square meter |  |  |  |
|  | Providing and fixing aluminium anodised powder coated grill 8 mm thick to existing window/ventilatior with 80mmx80mm panels with 25x8mm thick aluminium flat in windows and ventilators including fixing with aluminium screws or bolts and nuts complete in alluminium channels base frames (Aluminium channels base frames to be measured and paid for separately) and as per approved drawing, design and as directed by the Engineer- Incharge including carriage of materials within all leads and lifts and other incidentials. | 843.75 | square meter |  |  |  |
|  | Providing and fixing fly proof galvanised M.S. wire gauge of IS gauge designation 85 g( eighty five-G ) with wire of dia 0.56 mm zero point five six millimeter ) to windows and clerestory windows including carriage of material within all leads and lifts. | 409.15 | square meter |  |  |  |
|  | Applying priming coat over new steel and other metal surfaces after and including preparing the surfaces by thoroughly cleaning oil, grease, dirt and other foreign matter and scoured with wire brushes from steel wool scraper and sand papering complete with ready mixed priming paint brushing red led oxide /zinic oxide chrome / wood primer pink including carriage of materials with in all leads and lifts and other incidental and as per approved drawings, design and as directed by the Engineer in charge. | 2647.72 | square meter |  |  |  |
|  | Painting two or more coats (excluding priming coat) on new steel and other metal surfaces with enamel paint brushing to give an even shade including cleaning the surfaces of all dirt dust and other foreign matter with enamel paint other than white including carriage of materials within all leads and lifts and other incidentals and as per approved drawings, design and as directed by the Engineer in charge. | 4491.77 | square meter |  |  |  |
|  | Applying priming coat over new wood and wood based surfaces after and including preparing the surfaces by thoroughly cleaning oil, grease dirt and other foreign matter sand papering and knotting with ready mixed paint brushing wood primer pink including carriage of materials within all leads and lifts and other incidentals and as per approved drawings, design and as directed by the Engineer in charge. | 6216.51 | square meter |  |  |  |
|  | Painting two or more coats (excluding priming coat) on new wood and wood based surfaces with enamel paint to give an even shade including cleaning the surfaces of all dirt, dust and other foreign matters sand papering and stopping with enamel paint other then white including carriage of materials within all leads, lifts of materials and other incidental and as per approved drawings, design and as directed by the Engineer in charge. | 6235.33 | square meter |  |  |  |
|  | 15mm ( fifteen millimeters ) thick Cement plaster skirting or dado upto any height with cement mortar 1:3(one cement; three sand ) finished with a floating coat of neat cement including rounding of junction with floors and curing complete upto all floor level including carriage of materials within all leads and lifts. | 53.31 | square meter |  |  |  |
|  | 6mm (six millimeter)thick cement plaster in ceiling with cement mortar 1:3(one cement; three sand) upto all floor level and curing complete including carriage of materials with in all leads and lifts and other incidental as per approved drawings, design and as directed by the Engineer in charge. | 11399.99 | square meter |  |  |  |
|  | 10mm (ten millimeters) thick cement plaster with cement mortar 1:5(one cement; five sand) in single coat on fair side of brick/concrete/stone walls for interior plastering in all heights floor level including arises, internal rounded angles chamfers and/ or rounded angles not exceeding 80mm ( eighty millimeters ) in girth and finished even and smooth including carriage of materials with in all leads and lifts and other incidental charges and as per approved drawings, design and as directed by the Engineer in charge | 979.2 | square meter |  |  |  |
|  | 15mm (fifteen millimeters) thick cement plaster with cement mortar 1:6(one cement; six sand) in single coat on fair side of brick/concrete/stone walls for interior plastering in all heights / floor level including arises, internal rounded angles, chamfers and/ or rounded angles not exceeding 80mm ( eighty millimeters ) in girth and finished even and smooth including carriage of materials with in all leads and lifts and other incidental charges and as per approved drawings, design and as directed by the Engineer in charge. | 13212.6 | square meter |  |  |  |
|  | 15mm (fifteen millimeters) thick cement plaster with cement mortar 1:6(one cement; six sand) in single coat on rough side of brick/concrete/stone walls for interior plastering in all heights / floor level including arises, internal rounded angles, chamfers and/ or rounded angles not exceeding 80mm ( eighty millimeters ) in girth and finished even and smooth including carriage of materials with in all leads and lifts and other incidental charges and as per approved drawings, design and as directed by the Engineer in charge. | 14565.37 | square meter |  |  |  |
|  | 15mm (fifteen millimeters) thick cement plaster with cement mortar 1:5(one cement; five sand) in single coat on rough side of brick/concrete/stone walls for interior plastering in all heights floor level including arises, internal rounded angles chamfers and/ or rounded angles not exceeding 80mm ( eighty millimeters ) in girth and finished even and smooth including carriage of materials with in all leads and lifts and other incidental charges and as per approved drawings, design and as directed by the Engineer in charge | 1149.2 | square meter |  |  |  |
|  | 15mm (fifteen millimeters) thick cement plaster with cement mortar 1:5(one cement; five sand) in single coat on fair side of brick/concrete/stone walls for interior plastering in all heights floor level including arises, internal rounded angles chamfers and/ or rounded angles not exceeding 80mm ( eighty millimeters ) in girth and finished even and smooth including carriage of materials with in all leads and lifts and other incidental charges and as per approved drawings, design and as directed by the Engineer in charge | 9135.16 | square meter |  |  |  |
|  | 15mm (fifteen millimeters) thick cement plaster with cement mortar 1:4(one cement; four sand) in single coat on fair side of brick/concrete/stone walls for interior plastering in all heights floor level including arises, internal rounded angles chamfers and/ or rounded angles not exceeding 80mm ( eighty millimeters ) in girth and finished even and smooth including carriage of materials with in all leads and lifts and other incidental charges and as per approved drawings, design and as directed by the Engineer in charge | 82.25 | square meter |  |  |  |
|  | 20mm ( twenty millimeters ) thick cement plaster with in two back coat 15mm ( fifteen millimeters ) and finishing coat 5mm ( ive millimeters ) thick on rough side of brick/concrete/stone walls for interior plastering all heights including arises, internal rounded angles chamfers and/ or rounded angles in all girth and finished even and smooth in cement mortar 1:4( one cement; four sand) including carriage of materials within all leads and lifts. and other incidental charges and as per approved drawings, design and as directed by the Engineer in charge | 236.46 | square meter |  |  |  |
|  | Applying JK Birla white wall care putty over plastered surfaces after thoroughly brushing the surface free from mortar drops, dust, loose material and other foreign matter sand papered smooth to give final finish to the surfaces complete including carriage of materials with in all leads and lifts and as per approved drawings, design and as directed by the Engineer in charge. | 44518.43 | square meter |  |  |  |
|  | Finishing wall with weather proof exterior grade emulsion of approved design (Apexultima) of Asian paints/Nerolac paints or its equarlied brand and manufacture of approved shade on undecorated concrete / stone / plastered wall surfaces with two coats to give an even shade and final finish after thoroughly cleaning / brushing the surfaces free from all dirt , dust mortar dropping and other foreign matter and sand papered smooth including applying of putty as required for making the surfaces complete including carriage of materials with in all leads and lifts and as per approved drawings, design and as directed by the Engineer in charge. | 11171.4 | square meter |  |  |  |
|  | Distempering ( two coats) with dry distemper of approved brand and manufacture and of required shade on undecorated wall surfaces to give an even shade over and including a priming coat with distemper primer of approved brand and manufacture after thoroughly brushing the surface free from mortar dropping and other foreign mater and also including preparing the surfaces even and sand papered smooth including carriage of materials with in all leads and lifts | 10483.88 | square meter |  |  |  |
|  | Distempering (two coats)with oil bound washable distemper of Asian /Nerolac approved brand and manufacture and of required shade on undecorated wall surfaces to give an even shade over and including priming coat of distemper primer of approved brand and manufacture after thoroughly brushing the surface free from mortar droppings and other foreign matter including preparing the surface even and sand papered smooth priming coat with distemper primer including carriage of materials within all leads, lifts, and other incidentals and as per approved drawings, design and as directed by the Engineer in charge. | 5204.12 | square meter |  |  |  |
|  | Wall painting ( two coat ) with premium enamel paint of asian/ Nerolac paint approved brand and manufacture of approved shade for interior grade on undecorated concrete / stone / plastered wall surfaces to give an even shade including thoroughly brushing the surfaces free from mortar dropping and other foreign matter and sand papered smooth including applying of putty as required for making the surfaces complete including carriage of materials with in all leads and lifts and as per approved drawings, design and as directed by the Engineer in charge. | 19909.55 | square meter |  |  |  |
|  | White washing with lime on undecorated wall surfaces ( two coats ) to give an even shade including thoroughly brooming the surface to remove all dirt, dust mortar drops and other foreign matter including carriage of materials with in all leads and lifts and other incidental charges. | 1085.22 | square meter |  |  |  |
|  | Providing plinth protection 50mm ( fifty millimeters) thick in cement concrete 1:3:6 ( one cement :three sand: six graded stone aggregate 20mm (twenty millimeters ) nominal size ) and curing complete including finishing the top surface of concrete smooth and carriage of materials within all leads and lifts and as per approved drawings, design and as directed by the Engineer in charge. | 652.54 | square meter |  |  |  |
|  | Providing under layer for plinth protection of 75mm (seventy five millimeters ) thick ( unconsolidated ) bed of dry brick/stone broken/ crushed aggregate 40mm ( forty millimeters ) nominal size well rammed and consolidated and grouted with fine sand including preparation of ground including carriage of materials within all leads and lifts and other incidental charges and as per approved drawings, design and as directed by the Engineer in charge | 653.01 | square meter |  |  |  |
|  | Constructing course rubble hammer dressed ‘U’ shape open surfaces drain with side wall 15x23cms (Fifteen into Twenty three centimeters) in cement mortar 1:6 (One cement :Six sand) and inside plastering with cement plaster 1:3(One cement :Three sand) including earth work and laying 10cm (Ten centimeters) cement concreter in 1:5:10 (One cement: Five sand: Ten graded) crushed stone aggregate 40mm(Forty millimeters) nominal size and 7.5cm (Seven decimal Five centimetres)cement concrete 1:2:4 (One cement: Two sand: Four graded) crushed stone aggregate 20mm(Twenty millimeters) nominal size and finished with a floating cost of neat cement complete as per standard design and directed by the Engineer-Incharge. including carriage of materials in all leads and lifts and other incidental charges . | 1045.43 | running meter |  |  |  |
|  | Providing and laying cement water proofing treatment with Dr. FIXIT-FAST FLEX or equivalent with two componant polymer modified comentitious coating consisting of comentitious powder and a polimer liquid in two coats for Ist coat :- clean and satutae surface and then applying a coat of Dr. FIXIT and the same process shall bne extended upto 300 mm vertically the second coat shall be applied in opposit direction after four to six hours of applicaton of firsty coat than sprinkle sand on top surface of applied Dr. FIXIT then apply cement mortar 1 : 4 ( 1 cement : 4 sand) and admixed with 200 ml of pidiproof LW @ 200 ml per 50 kg bag complete as per architect drawing. including carriage of materials in all lead and lifts and other incidental charges. | 168.76 | square meter |  |  |  |
|  | Providing and fixing 19 mm thick water proof termite resistant commercial board ( Box type ) including shelves and shutters. Backside of cupboard shall be of 8 mm thick ply. All cut portion of the shelves and the shutters of cupboard from all side to be finished with hard wood edging including meget catcher and PTMT handle 125 mm size and polishing the internal surface with Malamine polish including 1 mm thick sunmica on outer surface of the cupboard shutters including providing mortice lock as per Architectural drawing complete in all respect. | 1093.48 | square meter |  |  |  |
|  | Providing and filling bricks bats/ stone aggregate 40mm ( forty millimeters ) in soakage pit complete including carriage of materials with in all leads and lifts. | 761.44 | cubic meter |  |  |  |
|  | Providing and fixing in position 12 mm thick impregnated fibre board in expension joints complete including carriage of materials with in all leads and lifts. | 20.86 | running meter |  |  |  |
|  | Precast cement concrete chequered tiles 20 mm thick with laid in floors, treads of steps and landings on a bed of 25 mm average thickness of cement mortar 1:6 (1 cement :6 sand) jointed with neat cement slurry mixed with pigment to match the shade of tiles (wherever required) including carriage of materials with in all leads and lifts. | 16.08 | square meter |  |  |  |
|  | Providing and laying clay tiles on window projections on cement morter 1:4(one cement: four sand) complete as per drawing and specifications including carriage of materials with in all leads and lifts. | 783.64 | square meter |  |  |  |
|  | Providing and fixing Mild steel hollow pipe of 50 mm ( fifty millimeter) dia Mild steel pipe hand rail slip resistant with round ends at two levels at 75 cm ( seventy five centimeters ) and 90 cm (ninety centimeter) height it should extended 30 cm (thirty centimeter ) beyond the top and bottom of the ramp complete as per architectural design welded with 25 mm ( twenty five millimeter ) dia Mild Steel pipe baluster to 50 mm ( fifty millimeter ) dia Mild Steel pipe embedded in cement concrete to parapet sat 60 cm ( sixty centimeter centre to centre interval with Polyvinyl chloride hand rail baluster dully welded/jointing with electric gas welding with top Mild steel flat complete as per architectural design and applying priming coat of red lead paint complete including carriage of materials within all leads, lifts and other incidentals and as directed by the Engineer in-charge. | 524.08 | Running meter |  |  |  |
|  | Providing and fixing 85 cm (eighty five centimeters)high railing with mild steel rectangular tube hand rail 40x40mm (forty into forty millimeter)( ISG-16) gauge etcetera) supported on 40 mm(Forty millimeters) square hollow mild steel tubes balusters( ISG-16-guage at 60 cm)(sixty centimeter)centre to centre duly welded with 2(two)Nos mild steel flat 50x5mm (fifty into five millimeters) and mild steel lugs lower end embedded in waste of reinforced cement concrete steps including applying a priming coat with steel primer and painting two or more coats with steel enamel paint other than white complete as directed by Engineer-in-charge including and carriage of materials in all leads and lifts.. | 201.41 | Running meter |  |  |  |
|  | Providing and laying upto floor two level cement concrete 1:2:4 ( one cement : two Sand : four graded stone aggregate 20mm ( twenty millimeters) nominal size) and curing complete including form work in : String courses coping bed plates, anchor blocks plain window sills and the like complete as directed by Engineer-in-charge including and carriage of materials in all leads and lifts.. | 23.87 | Cubic meter |  |  |  |
|  | 12 mm ( twelve millimeters ) thick green chalk board ( Non- Magnetic ) with superior quality framing specially anodized aluminium profile 20x15 mm ( twenty into fifteen millimeters ) with corners of black plastic shall be provided the board surface shall be non porus ceramic particle on the top green surface for smooth writing with chalk over 11 mm ( eleven millimetes ) thick particle board which shall have backing material of galvanised sheet 0.28 mm ( zero point twenty eight millimeter ) thick approximate the board shall be fixed on the wall with specially designed "J" clump and square clumps with the help of Nylon sleeves and screws as per site requirement complete as directed by Engineer-in-charge including and carriage of materials in all leads and lifts.. | 19 | square meter |  |  |  |
|  | Providing and fixing grab bars with chromium plated steel pipe 40mm ( forty millimeters) dia at 78 cm ( seventy eight centimeter ) height with mild steel plate 4mm (four millimeters ) thick as per detail and position of seat wash basin with nuts ,bolts and clamps etc. including cutting holes and making good the walls complete in all respect and carriage of materials within all leads and lifts and other incidental | 9 | Running meter |  |  |  |
|  | Providing and fixing 40mm (forty millimeter )wide and 4mm ( four millimeters ) thick glass strips in joints of all types of floors complete including carriage of materials within all leads and lifts. | 1294.88 | Per running meter |  |  |  |
|  | Spreading sludge damp manure or/ and good earth in required thickness ( cost of sludge , damp manure or /and good earth to be paid for seperetaly ) complete as directed by Engineer-in-charge including and carriage of materials in all leads and lifts. | 278.37 | cubic meter |  |  |  |
|  | Mixing earth and sludge or manure in proportion specified or directed complete as directed by Engineer-in-charge including and carriage of materials in all leads and lifts. | 260.92 | cubic meter |  |  |  |
|  | Grassing with 'Doob" grass including watering and maintenance of the lawn for for 30 days or more till the grass from a thick lawn free from weeds and fit for moving including supplying good earth if needed ( the cost for Doob grass earth shall be paid for seprately ) In row 15 cm apart in either direction complete as directed by Engineer-in-charge including and carriage of materials in all leads and lifts.. | 927.90 | Square meter |  |  |  |
|  | Applying cement slurry on Reinforcement cement concrete slab or cement concrete work using 2.75 kg. ( two point seven five kilogramme ) of cement per square metre of floor area before laying cement concrete flooring including roughening, cleaning of the concrete surfaces complete as directed by Engineer-in-charge including and carriage of materials in all leads and lifts.. | 64.88 | square meter |  |  |  |
|  | Supplying cast iron cover without frame for manholes For frame of 560mm ( five hundred sixty millimeters ) internal diameter C.I. cover (heavy duty) the weight of cover to be not less than 140kg. | 15 | Number |  |  |  |
|  | Supplying cast iron cover without frame for manholes For frame of 500mm ( five hundred millimeters )internal diameter C.I. cover (medium duty) the weight of cover to be not less than 58kg | 10 | Number |  |  |  |
|  | Preparation of sub grade by dressing to camber (Earth work for the cutting involved for sub-grade to be paid for separately depending upon the classification of soil completed as per HP.PWD specifications. | 2573.00 | square meter |  |  |  |
|  | Consolidation of sub grade with road roller including making good the undulation etc. with earth or quarry soil etc. and rerolling the sub-grade completed as per HP.PWD specifications | 2573.00 | square meter |  |  |  |
|  | Providing, laying, spreading and compacting of stone aggregate of specific sizes to water bound Macadam specification including spreading in uniform thickness using template hand packing, rolling with three wheel 80-100 ( eighty / hundred ) K.N. static Road roller in stages to proper grade and camber, applying and brooming, with application of stone screening type-A of size 11.2mm ( eleven decimal two ) millimeters at the rate of 0.27 cum ( zero point two seven cubic metres) per ten square metres, and binding materials at the rate of 0.08 cum ( zero point zero eight cubic meter ) to fill up the intersitices of coarse aggregate, watering and compacting to the required density grading –I, 90mm to 45mm ( ninety millimeters to forty five millimeters ) size, 100mm ( hundred millimeters ) compacted thickness as per technical specifications clause No. 405 including hauling of material in all leads, lifts as per the entire satisfaction and direction of Engineer – in- Charge including carriage of materials within all leads and lifts and other incidental . The rate including octroi, royality, Malkana, toll tax, sale tax or other taxes imposed by the Government | 257.30 | Per cubic meter |  |  |  |
|  | Providing and laying heavy duty precast cement conrete inter locking paver blocks vibro compacted upto M-50 (M-Fifty) grade i/c border or kurb block grey or coloured over sub-base of concrete with 25mm thick average thickness of cement mortar 1:4 (1 cement : 4 sand) laid over and jointed with neat cement slurry mixed with pigment to match the shade of blocks i/c curing rubbing & polishing complete (Sub base concrete floor to be paid for separately) 60mm thick inter locking blocks as per the direction and entire satisfaction of Engineer-in- charge including carriage of materials within all leads and lifts and other incidentals The rates including octroi, royality, malkana, toll tax, sale tax or any other taxes imposed by the Government. | 2573 | square meter |  |  |  |
|  | Providing and laying 100mm ( hundred millimeters ) dia A.C. pipe weep holes in brick masonry/stone masonry, plain/reinforced concrete abutment, wing wall, return wall and retaining wall/breast walls extending through the full width of the structures with slope of 1(V):20(H) towards drawing face complete as per drawing and M.O.R.D. technical specification Clauses 614, 709, 1204.3.7 as per directions of Engineer-in- charge and including carriage of material within all leads and lifts and other incidential . The rate including of octroi, royality, Malkana, toll tax, sale tax or other taxes imposed by the Government | 332 | Number |  |  |  |
|  | Transportation of Rig along-with allied accessories etcetera .complete including erection and leveling at site through all kind of roads, approaches field etc.in all leads and lifts upto site of work complete in all respect. | 1 | Number |  |  |  |
|  | Earth work in foundation for digging Tube-Well in all kinds of soils including dewatering, shoring, strutting from ground level upto 5.00 Metres including disposing excavated soil in all leads and lifts complete in all respect. | 5 | Per meter |  |  |  |
|  | Drilling of bore as per specifications laid down in IS-2800-1991(Part-I) with upto date amendments ,if any; with Percussion Rig or combination drilling Rig starting with 650-600mm.dia M.S. Pipe reduced to 450-400mm.dia M.S.pipe confirming to IS-4270-2001 with upto date ammendments, if any in all kinds of soils ,boulders, rocks, collapsible strata, saturated soil, artesian conditions including the cost of all consumables, stores, water, fuel, lubricants and other accessories etc.complete in all respect. | 25 | meter |  |  |  |
|  | Drilling and lowering of M.S. casing pipes 600-550mm.dia confirming to IS-4270-2001 with uptodate amendments, if any of suitable sizes as mentioned above from 30 Metres to 60 Metres below ground level. | 30 | meter |  |  |  |
|  | Drilling and lowering of M.S. casing pipes 550-500mm. Dia confirming to IS-4270-2001 with uptodate amendments, if any of suitable sizes as mentioned above from 60 Metres to 90 Metres below ground level. | 30 | meter |  |  |  |
|  | Drilling and lowering of M.S .casing pipes 500-450mm.dia confirming to IS-4270-2001 with upto date amendments if any of suitable sizes as mentioned above from 90 to 100 Metres below ground level. | 60 | meter |  |  |  |
|  | Collection, preservations and display of suitable size sample box with top lid and locking arrangement till handing over of the Tube-Well to the Department complete in all respect. | 1 | Number |  |  |  |
|  | Supply and lowering of IS-Marked "Electric Resistance Welded Mild Steel Blind Pipe 300mm.nominal size housing, 8mm. thick having outside diametre 323.9mm.screwed and socket confirming to IS-4270-2001 with uptodate amendments, if any, about 4.00 Metres to 7.00 Metres in length, welded without any circumferential joints into bore hole in vertical position including cost of all scaffolding derricks, poles clamps embedded in foundation etc. including cost of all cuttings, threading and welding of pipes etc. | 60 | meter |  |  |  |
|  | Lowering at site electric resistance welded(ERW) Stainless Steel Cage type-'V' wire wound screens of size 300mm. 8.00m.thick,outer dia 322.00 load tensil 392.40 KN end Ring 8mm.with slot opening 1.00mm.as per IS-8110-2000 with uptodate ammendments, if any and material specifications as per AISI" American Steel Inst" Type Grade SS- 304 in suitable lengths as per conditions including the cost of SS socket 8mm.thickness of length 140mm (Supply by the Department) confirming to AISI grade 304, suitable to accommodate screen and ring including jointing screen with blind pipe complete in all respect including cost of all scaffolding derricks, poles, clamps embedding in foundation etc. including cost of all cuttings threading and welding of pipes etc. within all leads and lifts complete in all respect as per the directions of the Engineer-in-Charge. Screen will be of continuous trapezoidal wire spirally wound arround fabricated cage. The Wrapping wire having "V" shape (Wedge) profile wire with flat surface on the outside and producing expending slots on the inside of various dimensions, resistance welded to a cylindrical body made of number of longitudinal special high tensile support rods to provide smooth unrestricted bore which are interm welded into cylindrical ring couplings on both side of screens. | 15 | meter |  |  |  |
|  | Providing and fixing M .S .Taper /Reducer as per lengths approved by the Engineer-in-Charge. The material of M.S. taper/reducer shall be equivalent to prevent pipe material and shall conform to Chemical composition as per Clause-5.2 and Mechanical properties as per Clause-6.1 and Table-1 of IS:4270-2001 with uptodate amendments, if any, complete in all respect. | 1 | Number |  |  |  |
|  | Supply and lowering of IS-Marked Electric Resistance Welded Mild Blind Steel pipe 200mm.dia nominal size housing, 6.4mm.thick having outside diametre 219.1mm.screwed and socketted confirming to IS-4270-2001 with upto date amendments, if any, about 4.00 Metres to 7.00 Metres in length, welded without any circumferential joints into bore hole in vertical position including cost of all scaffolding derricks, poles, clamps embedded in foundation etc. including cost of all cuttings, threading and welding of pipes etc. | 60 | meter |  |  |  |
|  | Lowering at site electric resistance welded(ERW) Stainless Steel Cage type-'V' wire wound screens of size 200mm. 6.30m.thick,outer dia 217.50 load tensil 186.39 KN end Ring 7.00mm.with slot opening 1.00mm.as per IS-8110-2000 with uptodate ammendments, if any and material specifications as per AISI" American Steel Inst" Type Grade SS- 304 in suitable lengths as per conditions including the cost of SS socket 8mm.thickness of length 140mm (Supply by the Department) confirming to AISI grade 304, suitable to accommodate screen and ring including jointing screen with blind pipe complete in all respect including cost of all scaffolding derricks, poles, clamps embedding in foundation etc. including cost of all cuttings threading and welding of pipes etc .within all leads and lifts complete in all respect as per the directions of the Engineer-in-Charge. Screen will be of continuous trapezoidal wire spirally wound arround fabricated cage. The Wrapping wire having "V" shape (Wedge) profile wire with flat surface on the outside and producing expending slots on the inside of various dimensions, resistance welded to a cylindrical body made of number of longitudinal special high tensile support rods to provide smooth unrestricted bore which are interim welded into cylindrical ring couplings on both side of screens. | 15 | meter |  |  |  |
|  | Providing and fixing of M.S. centralized guides at suitable spacing for each Tube-Well as per IS-226-1991 with uptodate amendments, if any complete in all respect. | 4 | Number |  |  |  |
|  | Supply, lowering, fixing and lowering in position IS-Marked Mild Steel bail plug of 200mm/330mm. Diametres with 'U' hooks as per IS-2800-1991 with uptodate amendments ,if any complete in all respect. | 1 | Number |  |  |  |
|  | Providing, , fixing and lowering in position threaded iron cap with locking arrangements of approved design to prevent foreign matter from getting into bore hole as required complete in all respect. | 1 | Number |  |  |  |
|  | Supply and packing of gravel consisting of hard quartz or other suitable material with an average specific gravity of not less than 2.5, not containing more than 2% by weight of thin flat or stangated pieces shall be of sub rounded grains with minimum anuglar features of size 2-3.35mm.shall be free from impurities such as; shafe, shale mica, feldspar, clay, sand, dit loam hematite and organic materials as per IS-4097-1967 with uptodate amendments, if any around intake of Tube-Well with minimum thickness of shroud around screen generally 100mm. to the entire depth of the bore as per IS-2800(Part-I):1991 with uptodate amendments, if any, complete in all respect. | 150 | Meter |  |  |  |
|  | Extraction of all sizes blind/casing pipes with Machine starting from the bottom of the bore hole complete in all respect of followings:- (a). In contact with soil. | 150 | meters |  |  |  |
|  | Extraction of all sizes blind/casing pipes with Machine starting from the bottom of the bore hole complete in all respect of followings:- (b). Freely hangings. | 175 | meters |  |  |  |
|  | Development of Tube-Well by backwashing method with Air Compressor of minimum 750CFM capacity Pumping pipe of 200mm. Size and Air line of minimum 65mm size or with other suitable method, till the Well is thoroughly developed as per Clause-4.2 of IS-11189:1985, with upto date amendments, if any; complete in all respect. | 30 | Hours |  |  |  |
|  | Development of Tube-Well by continuous over Pumping method with V.T.Pumps /Submersible Pumps of suitable capacity not less than double the discharge established by the Compressor method/design discharge, untill the well sand free as per IS-11189:1985 with upto date amendments, if any; complete in all respect as per the directions of the Engineer-in-Charge. The draw-down and discharge to be established by running the VT/Submersible pump continuously for 8 Hours in the presence of the officer not less than the rank of the Assistant Engineer. | 20 | Hours |  |  |  |
|  | Testing the vertcality of the Tube-Well as per Clause-4.3 of IS-2800(Part-II)-1979 with uptodate amendments, if any, using plumb or plunger 6mm.smaller in dia within the inside diameter of the Well casing. The result of the verticality test shll be recorded on proforma shown in Appendix-A of IS:2800(Part-II)-1979 with uptodate ammendments, if any. | 1 | Number |  |  |  |
|  | Dismentalling of Rig or other allied, accessories after completion of job complete in all respect. | 1 | Number |  |  |  |
|  | Supply of Submersible Pumping Set of Calama/KSB/Crompton/SU/Johnston /BS/Sabar make conforming to BIS-8034-1979 (Latest) suitable for clear cold water fitted with bronze Impellers or suitable alloys directly coupled to squirrel cage electric Induction Motor of same make as that of Pump conforming to BIS:9238-1979(Latest with uptodate ammendments) and totally water proof for Submersible duty, inisolated from the pump by intermediate casing with double Mechanical seal in oil chamber ,grease packed lubricated bearings and provided with stainless steel thrust bearing plate to withstand non-vertical loads with minimum wear and tear. It should also be fitted with a device to take-up expansion of water with the heating of motor including water level guard ,erection clamps, cable clips and depth gauge etc. The Pump shall be sui-table for operation on data given below:- i) Location of site :-The site is located at a distance of Kms.from Nurpur Road Railway Station. ii) The altitude of place in which :-Altitude of place is 500 Metres above Mean Sea Level. the Motor is intended to work :- iii) Type of current :-A.C.Three phase supply with frequency 50 cycles per second. iv) Rated Voltage :-415 Vvolts (+/-) 10% v) Characterstics of water :-(a).Temperature = 20°C (f) PH =\_7 to 8\_\_\_\_ vi) (b).Turbidity =Upto 50NTU (g) Total solids\_\_\_\_Mg/Litre (d).Alkalinity =\_\_Mg/Litre(as CaCo3) vi) Depth of Well Assembly :- 48.00 Metres. vii) L.W.L.in Tube Well viii) Maximum draw down level :- 10.00 Metres :- Metres ix) Centre line level of Pump :-48.00 Metres x) Discharge level of highest point :-119.82 Metres xi) Nos.of Pumps required :-1No.Pump. xii) Capacity :- 9.09 L.P.S. xiii ) Total head in Metres :-81.28 Metres xiv) Length of Rising Main :-480.00 Metres xv) Dia of Rising Main :-125mm.dia G.I.pIpe. xvi) No.of working hours per day :-20.00 Hours. xvii ) Limits of pump operation :- ( - ) 25% ( + ) 10% of total head. xviii ) H.P.of Motor/Drive unit :-Required 40H.P.of Pump at ( + ) 10% and ( - ) 25% of total head. BHP.with following margins/multiplying factor at duty point,whichever is higher. a).Upto 2 H.P. =1.5 (d) 10 to 20 H.P. =1.2 b).2 to 5 H.P. =1.4 (e) 20 to 100 H.P. =1.15 c) 5 to 10 H.P. =1.3 (f) Above 100 H.P. =1.10 xix) Test Run :-16 Hours continueously for 7 days. | 30 | 2 set of 15 H P B H P |  |  |  |
|  | Providing and fixing automatic panel board including auto start,auto stop and restart facility single phase preventer ,3 phases indicator, timer, relay, selector switch, auto and manually start stop facility, prevention of phase reversal, imbalance and overload and fixed with compatible starter in sheet enclosure with cabling complete in all respect to deliver resulis. | 1 | Number |  |  |  |
|  | Providing Cast iron double flanged sluice valve of Kirloskar/ Kilburn/IVC. /Fouress/Gled/BHEL/Leader make of size mm.and Class PN 1.0 having one size higher to delivery size of Pump and capable of withstanding nominal seat pressure of 16.00Kgs/Cm².confirming to BIS 780-1984 (The size of valve shall be specified by the tenderer). | 1 | Number |  |  |  |
|  | Supply of Kirloskar/Kilburn/IVC/Fouress/Gled/BHEL/Leader make Cast iron double flanged swing Check type Reflux Valve having bye pass arrangement and one size higher to delivery size of pump(size mm.dia and class PN 1.0 and shall be suitable for withstanding nominal seat pressure of 10Kgs./cm² confirming to BIS 5312-1984 Part-II )(The size of valve shall be specified by the tenderer). | 1 | Number |  |  |  |
|  | Supply of Kirloskar/Kilburn/IVC/Foluress/Gled/BHEL/Leader make Cast Iron double flanged Swing Check Type Reflux Valve having bye pass arrangement and of size equal to dia of Rising Main i.e. 125mm. class PN 1.0 shall be suitable for withstanding nominal seat pressure of 10.20Kgs./Cm²).confirming to BIS 5312-1984 | 1 | Number |  |  |  |
|  | Providing and laying suitable size copper PVC. insulated armoured power 3.5 core cable of size 25 mm² conforming to BIS-1554-Part-I -1988 or latest with upto date ammendments Siemen/Gloster/ICC/Finolex make from Meter of HPSEB. to MCB/OCB from OCB to Busbar Switch Starter(One cable carrying all three phases) including all other elecrc equipments/accessories such as thimbles,flexible pipe,solder,nuts bolts,cable glands etc.laid in pipers or trenches size and make will be subject to approval of HPSEB.authorities. In case of non-acceptance by HPSEB. auithority shall have to be replaced by the tenderer free of cost. Suppply side 25mm Square (The size of cable shall be specified by the tenderer). | 10 | meter |  |  |  |
|  | Providing and laying PVC.jointless flat water proof copper cable 16mm² as per BIS-694-1990(Latest with uptodate ammend-ments) suitable for the pump set offered from OCB to Motor, Motor to Starter including all other electric equipment such as;thimbles,flexible pipe,solder,nuts bolts,cable glands etc.laid in pipes or trenches under floor. The type and make will be subject to approval of HPSEB.authorities. In case of non-acceptance by HPSEB.authoirity,it shall have to be replaced by the tenderer free of cost. (The size of cable shall be specified by the tenderer). ii) Motor side 16 mm Square | 165 | Meter |  |  |  |
|  | Providing and laying doub le loop earthing with copper plate 600x600 x 3mm.thick electrode complete with material such as;char coal,common salt, G.I.Pipes, thimbles, nuts bolts,digging of pits,G.I.wiring and 25x5mm.copper strips of required capacity conforming to BIS-3043-1987 latest with uptodate amendments for above motors and other electrical equipments. | 1 | Job |  |  |  |
|  | Supply and erection of floor/wall mounted power factor shunt capacitor conforming to BIS-2834-1986 latest with upto-date amendments BHEL /GEC/Machneil/Mager/Bajaj make to raise the prevailing power factor at site to 0.95 for direct connection to Induction Motor individually of required KVAR according to H.P.of Motor offered including Siemens/Gloster/ICC make from Busbar chamber to capacitor and also including LT/LK/Kilburn make ICTP.Switches conforming to BIS-4064-1978 or latest with HRC fuses(Range to be specified by the tenderer). | 4 | 4 KVAR |  |  |  |
|  | Supply of standard make circular dial pressure gauge of suitable range of Fiebeg/Bourden/Precision make with all accessories such as;stop cock,copper tubing etc.conforming to BIS-3624-1987 latest with uptodate ammendments. | 1 | Number |  |  |  |
|  | Providing and laying of column assembly of suitabie dia and making connection with Rising Main(125mm dia)G.I.pipe Conforming to IS-1239 or MSERW.Pipe 4.8mm tick conforming to BIS 1978-82 considering site requirement duly flanged at every 3 Metre length with flanges conforming to BIS-6392-1971 (Table-5 )including tapers,flanges,rubber gaskets 3 mm thick as per BIS-2712-1978 ,nuts bolts as per 1364-1983 as per .direction of Engineer-in-Charge or as per layout approved by the Engineer-in-Charge.The pipes shall be capable of withstanding 1.5 times the total pressure indicated in item No.1(xiii) column pipe 100mm-dia (size to be specified by the tenderer). | 110 | Meter |  |  |  |
|  | Erection of all equipments from S.No. 1 to 4 and 6 including cost of tees, bends,tapers and any other fittings required as per conditions and as per directions of the Engineer-in-Charge. | 1 | Job |  |  |  |
|  | Providing and fixing HIND WARE/CERA MAKE orrisa pattern vitreous china water closet squatting pan No. 20042 (Indian type W.C. pan) size 580mm (Five hundred eighty millimeters) white shade (Earth work, bed concrete, foot rest and trap to be measured and paid for separately) including carriage of materials within all leads, lifts and other incidentals and as per directions of Engineer-in- charge. The rate including Sales tax, Toll tax or any other taxes imposed by the Government . | 66 | Number |  |  |  |
|  | Providing and fixing vitreous China wash down water closet (European Type WC pan) of approved make (HIND WARE/CERAMAKE) and of approved shade, with integral ‘P’ or ‘S’ trap including jointing the trap with soil pipe in cement mortar 1:1 (one cement isto one sand) complete (seat cover to be measured and paid for separately ) Universal closet NO.20041/21028 of Hindware size 530x410mm (five hundred thirty into four hundred ten millimeter ) as per HPPWD specifications or as directed by the Engineer-in-Charge, including carriage of materials within all leads, lifts and other incidental. The rate inclusive of Royality, Malkhana, Octroi, Toll Tax Sales tax or any other taxes imposed by the Government. | 88 | Number |  |  |  |
|  | Providing and fixing in position with clamps etcetera 32mm (thirty two millimeter ) nominal internal diameter galvanised steel tube flush pipe for high level flushing cistern including connecting the flush pipe with cistern and closet and making good the walls and floors complete or as directed by the Engineer-in-Charge, including carriage of materials within all leads, lifts and other incidental. The rate inclusive of Royality, Malkhana, Octroi, Toll Tax Sales tax or any other taxes imposed by the Government. | 110 | Number |  |  |  |
|  | Providing and fixing G.I. inlet connection for flush pipe with W.C. pan complete in all respects as per HPPWD specifications or as directed by the Engineer-in-Charge, including carriage of materials within all leads, lifts and other incidental. The rate inclusive of Octroi, Toll Tax Sales tax or any other taxes imposed by the Government. | 110 | Number |  |  |  |
|  | Providing and fixing plastic seat (solid/Hollow type) and cover for wash down water closet with CP brass hinges end rubber buffers solid type a white plastic seat and cover of Hindware or its equivalent. including carriage of materials within all leads, lifts and other incidental or as directed by the Engineer-in-Charge. | 88 | Number |  |  |  |
|  | Providing and fixing vitreous china HIND WARE No.102012 (clair ) /CERA MAKE wash basin with single hole for pillar tap with CI or MS brackets painted white including cutting holes and making good the same but excluding fittings flat back size 550mmx400mm ( five hundred fifty into four hundred millimeters ) complete including carriage of materials within all leads and lifts and other incidental or as directed by the Engineer-in-Charge. | 104 | Number |  |  |  |
|  | Providing and fixing CP brass waste for wash basin or sink 32mm ( thirty two millimeters ) dia meter complete including carriage of materials within all leads and lifts and other incidental or as directed by the Engineer-in-Charge. | 141 | Number |  |  |  |
|  | Providing and fixing CP brass waste of Prayag/ Hindware/ Cera for wash basin or sink 40mm ( forty millimeters ) dia meter complete including carriage of materials within all leads and lifts and other incidental or as directed by the Engineer-in-Charge. | 42 | Number |  |  |  |
|  | Providing and fixing 600mm x 450mm (six hundred millimeters into four hundred fifty millimeters) bevelled edge mirror of superior glass mounted on 6mm ( six millimeters) thick asbestos cement sheet or ply wood sheet and fixed to wooden plugs with chromium plated Brass screws and washers complete including carriage of materials within all leads and lifts and other incidental or as directed by the Engineer-in-Charge | 104 | Number |  |  |  |
|  | Providing and fixing750x20mm.(Seven hundred fifty into twenty millimeter) chromium plated brass towel rail of Prayag/ Hindware/ Cera complete with chromium plated brass brackets fixed to wooden plugs with chromium plated brass screws including carriage of materials within all leads and lifts and other incidental or as directed by the Engineer-in-Charge . | 73 | Number |  |  |  |
|  | Providing and fixing 600x120mm(Six Hundred into One Hundred twenty millimeter ) glass shelf with Chromium plated brass bracket of Prayag/ Hindware/ Cera and guard rail complete fixed to wooden plugs with Chromium plated brass screws including carriage of materials within all leads and lifts or as directed by the Engineer-in-Charge | 104 | Number |  |  |  |
|  | Providing and fixing Plastic container liquid soap with Chromium plated brass lid of Prayag/ Hindware/ Cera brackets fixed to wooden plugs with Chromium plated brass screws including carriage of materials within all leads and lifts or as directed by the Engineer-in-Charge. | 84 | Number |  |  |  |
|  | Providing and fixing chromium plated brass soap dish of Prayag/ Hindware/ Cera with Chromium plated brass brackets fixed to wooden cleats with Chromium plated brass screw complete including carriage of materials within all leads and lifts and other incidental or as directed by the Engineer-in-Charge. | 93 | Number |  |  |  |
|  | Providing and fixing 15mm (fifteen millimeters )diamete chromium plated brass bib tap of Prayag/ Hindware/ Cera with capstan head complete including carriage of materials within all leads and lifts and other incidental or as directed by the Engineer-in-Charge. | 214 | Number |  |  |  |
|  | Providing and fixing15mm (fifteen millimeter)diameters chromium plated brass pillar tap of Prayag/ Hindware/ Cera with capstan head complete including carriage of materials with in all leads and lifts and other incidental or as directed by the Engineer-in-Charge. | 115 | Number |  |  |  |
|  | Providing and fixing chromium plated brass angle valve of Prayag/ Hindware/ Cera 15mm (fifteen millimeter)diameters without nuts and pipe complete including carriage of materials within all leads and lifts and other incidental or as directed by the Engineer-in-Charge. | 99 | Number |  |  |  |
|  | Providing and fixing chromium plated 15mm (fifteen millimeters) diameter brass stop cock of Prayag/ Hindware/ Cera with necessary fitting including carriage of materials within all leads and lifts or as directed by the Engineer-in-Charge. | 317 | Number |  |  |  |
|  | Providing and fixing P.V.C. Connection pipe with brass unions 300/450mm ( three hundred / four hundred fifty millimeter ) long and 15mm (fifteen millimeters) nominal bore including carriage of materials within all leads and lifts or as directed by the Engineer-in-Charge. | 346 | Number |  |  |  |
|  | Providing and fixing PVC ( poly vinyl chloride) tee ISI marked including fixing with approved adhesive etc. Complete , 150mm (one hundred fifty millimeter) dia including carriage of materials within all leads, lifts and other incidental. | 1 | Number |  |  |  |
|  | Providing and fixing 15mm ( fifteen milimetre)nominal bore brass full way valve with wheel complete including carriage of materials within all leads, lifts and other incidentals and or as directed by the Engineer-in-Charge. | 112 | Number |  |  |  |
|  | Providing and fixing plytheline aluminum polythylene (PE-AL-PE) composite pressure pipe U.V.stabilized with carbon black confrming to IS- 15450-2004 kitee or its equivalent water supply including clamp at one metre spacing cutting fixing and making good the wall etcetera but excluding the cost of fittings (internal work ) pipes exposed on wall internal work Exposed on wall 1216 (one thousand two hundred sixteen ) (16mm O.D. pipe ) (sixteen millimeter outer dia )including carriage of materials within all leads, lifts and other incidentals and or as directed by the Engineer-in-Charge. | 4290 | Running meter |  |  |  |
|  | Providing and fixing plytheline aluminum polythylene (PE-AL-PE) composite pressure pipe U.V.stabilized with carbon black confrming to IS- 15450-2004 of kitee or its equivalent water supply including clamp at one metre spacing cutting fixing and making good the wall etcetera but excluding the cost of fittings (internal work ) pipes exposed on wall internal work Exposed on wall 1620 (one thousand six hundred twenty)(20 mm OD pipe) (twenty millimeter outer dia ) including carriage of materials within all leads, lifts and other incidentals and or as directed by the Engineer-in-Charge. | 6325.40 | Running meter |  |  |  |
|  | Providing and fixing plytheline aluminum polythylene (PE-AL-PE) composite internal seal compressing fittings as per IS-15450-2004 of kitee or its equivalent for hot water supply such as tees elbows reducers connectors couplers and clamps with jointing tersting and fixing including cutting and making good the walls etc. ( This type of fitting to be used for hot water supply only ) Equal tees 1216mm (one thousand two hundred sixteen millimeters ) including carriage of materials within all leads, lifts and other incidentals and or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government. | 370 | Number |  |  |  |
|  | Providing and fixing plytheline aluminium polyethylene (PE-AL-PE) Equal tees 1620 (one thousand six hundred twenty millimeters ) including carriage of materials within all leads, lifts and other incidentals incidentals and or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government. | 370 | Number |  |  |  |
|  | Providing and fixing plytheline aluminium polyethylene (PE-AL-PE) Reducing Tee 1620 (one thousand six hundred twenty millimeters ) all branches including carriage of materials within all leads, lifts and other incidentals incidentals and or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government. | 370 | Number |  |  |  |
|  | Providing and fixing plytheline aluminium polythylene (PE-AL-PE) Reducing Tee 2025 ( two thousand twenty five ) with all branches including carriage of materials within all leads, lifts and other incidentals and or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government. | 370 | Number |  |  |  |
|  | Providing and fixing plytheline aluminum polyethylene (PE-AL-PE) Female branch Tee 1216x1216x15mm ( one thousand two hundred sixteen into one thousand two hundred sixteen into fifteen millimeter) thread including carriage of materials within all leads, lifts and other incidentals and or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government | 370 | Number |  |  |  |
|  | Providing and fixing plytheline aluminum polyethylene (PE-AL-PE) Female branch Tee 1620x1620x20mm ( one thousand six hundred twenty into one thousand six hundred twenty into twenty millimeter) thread including carriage of materials within all leads, lifts and other incidentals and or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government | 370 | Number |  |  |  |
|  | Providing and fixing plytheline aluminium polyethylene (PE-AL-PE) Female elbows 1216x15mm ( one thousand two hundred sixteen into fifteen millimeter) thread including carriage of materials within all leads, lifts and other incidentals and or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government. | 370 | Number |  |  |  |
|  | Providing and fixing plytheline aluminium polyethylene (PE-AL-PE) Female elbows 1620x15mm ( one thousand six hundred twenty into fifteen millimeter) thread including carriage of materials within all leads, lifts and other incidentals and or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government. | 370 | Number |  |  |  |
|  | Providing and fixing plytheline aluminium polyethylene (PE-AL-PE) Male thread connector 1216x15mm ( one thousand two hundred sixteen into fifteen millimeter) thread including carriage of materials within all leads, lifts and other incidentals and or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government. | 370 | Number |  |  |  |
|  | Providing and fixing plytheline aluminium polyethylene (PE-AL-PE) male thread connector 1620x15mm ( one thousand six hundred twenty into fifteen millimeter) thread including carriage of materials within all leads, lifts and other incidentals and or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government.. | 370 | Number |  |  |  |
|  | Providing and fixing plytheline aluminium polyethylene (PE-AL-PE) Fe-male thread connector 1216x15mm ( one thousand two hundred sixteen into fifteen millimeter) thread including carriage of materials within all leads, lifts and other incidentals and or as directed by the Engineer-in-Charge and type of taxes imposed by the Government and or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government.. | 270 | Number |  |  |  |
|  | Providing and fixing plytheline aluminium polyethylene (PE-AL-PE) Fe-male thread connector 1620x15mm ( one thousandsix hundred twenty into fifteen millimeter) thread including carriage of materials within all leads, lifts and other incidentals and or as directed by the Engineer-in-Charge and type of taxes imposed by the Government and or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government.. | 270 | Number |  |  |  |
|  | Providing and fixing plytheline aluminium polythylene (PE-AL-PE) Couplers 1216 ( one thousand two hundred sixteen ) including carriage of materials within all leads, lifts and other incidentals and or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government. . | 370 | Number |  |  |  |
|  | Providing and fixing plytheline aluminium polyethylene (PE-AL-PE) Couplers 1620 ( one thousand six hundred twenty ) including carriage of materials within all leads, lifts and other incidentals and or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government. . | 370 | Number |  |  |  |
|  | Providing and fixing plytheline aluminium polythylene (PE-AL-PE) Reducers 1620x1216 ( one thousand six hundred twenty into one thousand two hundred sixteen ) including carriage of materials within all leads, lifts and other incidentals and or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government. . | 370 | Number |  |  |  |
|  | Providing and fixing plytheline aluminium polyethylene (PE-AL-PE) Reducers 2025x1216 ( two thousand twenty five into one thousand two hundred sixteen ) including carriage of materials within all leads, lifts and other incidentals and or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government.. | 370 | Number |  |  |  |
|  | Providing and fixing 1000(one thousand ) liter net capacity tank P.V.C.(poly vinyl chloride) water storage tank cylindrical shape ( ISI :12701 marked / Treepal layer ) universal or equivalent make ) including providing and fixing 15mm ( fifteen millimeters) nominal bore galvanized mild steel tube over flow pipes, inlet and out let with fitting of suitable size along with ball valve and floating valve and P.V.C.( poly vinyl chloride) mosquito proof cover with locking arrangement including providing suitable base pad and hoisting in all heights including carriage of materials within all leads and lift and or as directed by the Engineer-in-Charge and type of taxes imposed by the Government and or as directed by the Engineer-in-Charge and type of taxes imposed by the Government. | 40 | Number |  |  |  |
|  | Providing and fixing 2000(two thousand ) liter net capacity tank P.V.C.(poly vinyl chloride) water storage tank cylindrical shape ( ISI :12701 marked / Treepal layer ) universal or equivalent make ) including providing and fixing 15mm (fifteen millimeters) nominal bore galvanized mild steel tube over flow pipes, inlet and out let with fitting of suitable size along with ball valve and floating valve and P.V.C.( poly vinyl chloride) mosquito proof cover with locking arrangement including providing suitable base pad and hoisting in all heights including carriage of materials within all leads and lifts and or as directed by the Engineer-in-Charge and type of taxes imposed by the Government. | 35 | Number |  |  |  |
|  | Providing and fixing P V C .( poly vinyl chloride) floor trap ISI marked of self cleaning design with iron screwed down or hinged grating without vent arm complete including cost of cutting and making good the walls and floors 110mm x 90mm (one hundred ten millimeter into ninty millimeters) nominal size or as directed by the Engineer-in-Charge, including carriage of materials within all leads, lifts and other incidental. The rate inclusive of Octroi, Toll Tax Sales tax or any other taxes imposed by the Government. | 237 | Number |  |  |  |
|  | Providing and fixing high pressure P V C ( poly vinyl chloride) spigot and socket waste ventilating pipes ISI marked including fixing with approved adhesive complete 150mm (one hundred fifty millimeters) dia meter including carriage of materials within all leads, lifts and other incidental or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government. | 3720 | Running meter |  |  |  |
|  | Providing and fixing high pressure P V C ( poly vinyl chloride) spigot and socket waste ventilating pipes ISI marked including fixing with approved adhesive complete 110mm (one hundred ten millimeters) diameter including carriage of materials within all leads, lifts and other incidental or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government.. | 145.7 | Running meter |  |  |  |
|  | Providing and fixing PVC ( poly vinyl chloride) single equal branch with oval access door, ISI marked insertion rubber washer 3mm (three millimeter ) thick bolts and nuts complete including fixing with approved adhesive complete 150mm (one hundred fifty millimeter) diameter including carriage of materials within all leads, lifts and other incidental or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government... | 345.5 | Number |  |  |  |
|  | Providing and fixing PVC ( poly vinyl chloride) single equal branch with oval access door, ISI marked insertion rubber washer 3mm ( three millimeter ) thick bolts and nuts including fixing with approved adhesive etc. complete 110mm (one hundred ten millimeter) dia meter including carriage of materials within all leads, lifts and other incidental or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government... | 153 | Number |  |  |  |
|  | Providing and fixing PVC ( poly vinyl chloride) door bend with oval access door, insertion rubber washer 3mm ( three millimeter ) thick bolts and nuts ISI marked complete including fixing with approved adhesive etcetera complete : 110mm (one hundred ten millimeters) including carriage of materials within all leads, lifts and other incidental or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government.. | 153 | Number |  |  |  |
|  | Providing and fixing PVC ( poly vinyl chloride) single equal branch plain ISI marked including fixing with approved adhesive etcetera complete 110mm (one hundred ten millimeters) dia meter including carriage of materials within all leads, lifts and other incidental or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government.. | 153 | Number |  |  |  |
|  | Providing and fixing PVC ( poly vinyl chloride) collars ISI marked including fixing with approved adhesive etcetera complete , 150mm (one hundred fifty millimeter) dia meter including carriage of materials within all leads, lifts and other incidental or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government. | 153 | Number |  |  |  |
|  | Providing and fixing PVC ( poly vinyl chloride) collars ISI marked including fixing with approved adhesive etcetera complete , 110mm (one hundred ten millimeter) dia meter including carriage of materials within all leads, lifts and other incidental or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government... | 201 | Per running meter |  |  |  |
|  | Providing and fixing PVC ( poly vinyl chloride) plain bend ISI marked including fixing with approved adhesive etcetera complete 110mm (one hundred ten millimeter) dia meter including carriage of materials within all leads, lifts and other incidental or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government. | 153 | Per running meter |  |  |  |
|  | Providing and fixing PVC ( poly vinyl chloride) off set 45° (forty five Degree ) ISI marked including fixing with approved adhesive etcetera . complete 110mm (one hundred ten millimeter) dia meter including carriage of materials within all leads, lifts and other incidental or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government... | 153 | Number |  |  |  |
|  | Providing and fixing PVC ( poly vinyl chloride) clamps ISI marked of approved design with steel screws and rawl plugs etcetera . complete .150mm (one hundred fifty millimeter) dia meter including carriage of materials within all leads, lifts and other incidental or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government. | 153 | Number |  |  |  |
|  | Providing and fixing PVC ( poly vinyl chloride) 'Y' junction with oval access door, insertion rubber washer 3mm (three millimeter ) thick bolts and nuts ISI marked complete including fixing with approved adhesive etcetera complete 110 mm (one hundred ten millimeter ) diameters including carriage of materials within all leads, lifts and other incidental or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government.. . | 153 | Number |  |  |  |
|  | Providing and fixing PVC ( poly vinyl chloride) plain 'Y' junction ISI marked including fixing with approved adhesive etcetera. complete 110 mm (one hundred ten millimeter ) diameters including carriage of materials within all leads, lifts and other incidental or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government.. | 154 | Number |  |  |  |
|  | Providing and fixing PTMT coloured/ white high density polyethylene / polypropylene HIND WARE/CERA MAKE poly Venyl Chloride 10 liters (ten) capacity (full flush )European standard control low level flushing cistern with a pair of CI or MS brackets complete with fittings such as lead valves syphon, 15mm (fifteen millimeter) nominal size PVC ball valve with polythene float, CP brass handles, unions and couplings for connection with inlet, outlet and over flow pipes 40mm (forty millimeters) dia meter including Chromium plated flush bend and cutting holes in walls and making good the same and connecting the flush bend with cistern and closet ( over flow pipe to be measured and paid for separately ) complete including carriage of materials within all leads, lifts and other incidental or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government. | 109 | Number |  |  |  |
|  | Providing and fixing PTMT coloured/ white high density polythylene/ polypropylene HIND WARE/CERA MAKE poly Venyl Chloride 5 liters ( five ) capacity (full flush )European standard control low level flushing cistern with a pair of CI or MS brackets complete with fittings such as lead valves syphon, 15mm (fifteen millimeter) nominal size PVC ball valve with polythene float, CP brass handles, unions and couplings for connection with inlet, outlet and over flow pipes 40mm (forty millimeters) dia meter including Chromium plated flush bend and cutting holes in walls and making good the same and connecting the flush bend with cistern and closet ( over flow pipe to be measured and paid for separately ) complete including carriage of materials within all leads, lifts and other incidental or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government. | 4 | Number |  |  |  |
|  | Providing and fixing PTMT bib cock of approved quality and colour fancy 15mm (fifeen milimter) with flange including carriage of materials within all leads and lifts and other incidental or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government | 181 | Number |  |  |  |
|  | Providing and fixing PTMT reducer for push cock of approved quality and colour (20mm x15mm ) (twenty milimeters into fifteen milimeters) including carriage of materials within all leads and lifts and other incidental or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government. | 121 | Number |  |  |  |
|  | Providing and fixing PTMT push cock of approved quality and colour 15mm (fifteen milimter) female thread including carriage of materials within all leads and lifts and other incidental or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government. | 45 | Number |  |  |  |
|  | Providing and fixing chromium plated grating of superior quality for floor, gully , or Nahni trap complete including carriage of materials with in all leads and lifts . 100mm ( one hundred millimeter)dia meter size including carriage of materials within all leads and lifts and other incidental or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government. | 99 | Number |  |  |  |
|  | Constructing manhole with reinforced cement concrete top slab in cement concrete 1:2:4 ( one cement; two sand; four graded / crushed stone aggregate 20mm ( twenty millimeters ) nominal size), in foundation concrete 1:4:8 ( one cement : four sand: eight graded / crushed stone aggregate 40mm(forty millimeters) nominal size in side plastering 15mm ( fifteen millimeters) thick with cement mortar 1:3 (one cement; three sand) finished with a floating coat of neat cement and making channels in cement concrete 1:2:4 ( one cement ; two sand; four graded / crushed stone aggregate 20mm ( twenty millimeters ) nominal size finished smooth complete including curing and testing a) inside size 800mmx800mmx500mm (eight hundred millimeters into eight hundred millimeters into five hundred millimeters) including cast iron cover with frame (light duty single seal pattern-I ) 455 x 610mm( four hundred fifty five into six hundred ten millimeters) internal dimension total weight of cover and frame to be not less than 38 kg. ( thirty eight kilogramme ) (Weight of cover 23 kg. (twenty three kilogramme) and weight of frame 15 kg.)(fifteen kilogramme) with 200mm (two hundred millimeters ) thick walls of brick masonry using common burnt clay building bricks in cement mortar 1:3(one cement; three sand) complete including carriage of material within all leads and lifts and other incidentals or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government | 29 | Number |  |  |  |
|  | Constructing manhole with reinforced cement concrete top slab in cement concrete 1:2:4 ( one cement; two sand; four graded / crushed stone aggregate 20mm ( twenty millimeters ) nominal size, in foundation concrete 1:4:8 ( one cement : four sand: eight graded / crushed stone aggregate 40mm(forty millimeters) nominal size in side plastering 15mm ( fifteen millimeters) thick with cement mortar 1:3 (one cement; three sand) finished with a floating coat of neat cement and making channels in cement concrete 1:2:4 ( one cement ; two sand; four graded / crushed stone aggregate 20mm ( twenty millimeters ) nominal size finished smooth complete including curing and testing a) inside size 1200mmx900mmx1000mm (one thousand two hundred millimeters into nine hundred millimeters into one thousand millimeters) including cast iron cover with frame (medium duty ) 500mm( five hundred millimeters) internal dia meter total weight of cover and frame to be not less than 116 kg. ( one hundred sixteen kilogramme ) (Weight of cover 58 kg. (fifty eight kilogramme) and weight of frame 58 kg.)(fifty eight kilogramme) with 200mm (two hundred millimeters ) thick walls of brick masonry using common burnt clay building bricks in cement mortar 1:3(one cement; three sand) complete including carriage of material within all leads and lifts and other incidentals or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government. | 196 | Number |  |  |  |
|  | Constructing manhole with reinforced cement concrete top slab in cement concrete 1:2:4 ( one cement; two sand; four graded / crushed stone aggregate 20mm ( twenty millimeters ) nominal size, in foundation concrete 1:4:8 ( one cement : four sand: eight graded / crushed stone aggregate 40mm(forty millimeters) nominal size in side plastering 15mm ( fifteen millimeters) thick with cement mortar 1:3 (one cement; three sand) finished with a floating coat of neat cement and making channels in cement concrete 1:2:4 ( one cement ; two sand; four graded / crushed stone aggregate 20mm ( twenty millimeters ) nominal size finished smooth complete including curing and testing a) inside size 1200mmx900mmx1500mm (one thousand two hundred millimeters into nine hundred millimeters into one thousand five hundred millimeters) including cast iron cover with frame ( medium duty ) 500mm( five hundred millimeters) internal dia meter total weight of cover and frame to be not less than 116 kg. ( one hundred sixteen kilogramme ) (Weight of cover 58 kg. (fifty eight kilogramme) and weight of frame 58 kg.)(fifty eight kilogramme) with 300mm (three hundred millimeters ) thick walls of brick masonry using common burnt clay building bricks in cement mortar 1:3(one cement; three sand) complete including carriage of material within all leads and lifts and other incidentals or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government. | 42 | Number |  |  |  |
|  | Providing and fixing 32mm (thirty two millimeters) diameter PVC waste pipe flexible (Coil Type) length not less than 800 mm (eight hundred milimeters)for wash basin or sink complete including carriage of materials within all leads and lifts and other incidentals. | 70 | Number |  |  |  |
|  | Providing and fixing 110mm ( one hundred ten milimeters ) dia meter PVC ( poly vinyl chloride) cowl complete including carriage of materials within all leads and lifts and other incidental. | 26 | Number |  |  |  |
|  | Providing and fixing PVC or cast iron cowl 100mm (one hundred millimeters) nominal diametre for soakpit and including carriage of material within all leads and lifts and other incidential | 8 | Number |  |  |  |
|  | Providing and fixing vitreous china (Hindware/Cera Make ) pedestral for wash basin complete including carriage of materials within all leads, lifts and other incidentals. | 70 | Number |  |  |  |
|  | Providing and fixing Jet spray 1.5 m ( one point five meter (PTMT ) including carriage of material with in all leads and lifts and other incidentals. | 88 | Number |  |  |  |
|  | Providing and fixing vitreous china (Hindware/Cera make )division plate for Urinals size 600mmx300 mm ( six hundred millimeter into three hundred millimeters ) complete including carriage of materials within all leads and lifts and other incidental or as directed by the Engineer-in-Charge. | 4 | Number |  |  |  |
|  | Providing and fixing vitreous China bowl pattern urinal including connection the urinal with waste pipe by means of white lead mixed with chopped hemp (waste pipe to be measured and paid for separately. : Flat back type of size 430mm x 260 mm x 350mm( four hundred thirty millimeter into two hundred sixty into three hundred fifty millimeters ) complete including carriage of materials within all leads and lifts and other incidental or as directed by the Engineer-in-Charge. | 4 | Number |  |  |  |
|  | Providing and fixing PVC ( poly vinyl chloride)110mm ( one Hundred ten millimeters) size “P” or “S” trap for water closet (squatting pan) ISI marked including jointing the trap with pan and PVC( poly vinyl chloride) pipe with approved adhessive etcetera complete including carriage of materials within all leads, lifts and other incidental. The rate inclusive of Octroi, Toll Tax Sales tax or any other taxes imposed by the Government or as directed by the Engineer-in-Charge and all type of taxes imposed by the Government... | 42 | Number |  |  |  |
|  | Providing and fixing chromium plated brass shower 100mm ( One hundred millimeters ( dia with 15mm ( fifteen millimeters ) or 20mm ( twenty millimeters ) in let with C.P. brass screws complete as per HPPWD specifications or as directed by the Engineer-in-Charge, including carriage of materials within all leads, lifts and other incidentals. The rate including Sales tax, Toll tax or any other taxes imposed by the Government. | 21 | Number |  |  |  |
|  | Providing and fixing 650 x 450 x 150 mm (six hundred fifty into four hundred fifty into one hundred fifty millimeter) size vitreous china kitchen sink with cast iron or Mild steel brackets painted white including cutting holes in walls and making good the same but excluding the cost of fitting as per HPPWD specifications or as directed by the Engineer-in-Charge, including carriage of materials within all leads, lifts and other incidental. The rate inclusive of Octroi, Toll Tax Sales tax or any other taxes imposed by the Government. | 1 | Number |  |  |  |
|  | Providing and fixing 40mm ( forty millimeters ) dia CP brass waste Pryag/ Hindware /Cera for wash basin or sink complete as directed by the Engineer-in-Charge, including carriage of materials within all leads, lifts and other incidental. | 5 | Number |  |  |  |
|  | Providing and fixing 200mm (two hundred millimeter) wide cast iron rungs with chequared or ribbed non slip surfaces including fixing in manhole with 200x200x100mm (two hundred into two hundred into one hundred millimeter cement concrete 1:3:6 (one cement; three sand six graded /crushed stone aggregate 20mm (twenty millimeter) nominal size) and curing complete including carriage of materials within all leads and lifts. | 4 | Number |  |  |  |
|  | Providing and fixing to wall ceiling and floor ISI marked 32mm( thirty two millimeters) nominal bore galvanized mild steel tubes ( medium grade ) tube fittings with clamps including making good the wall, ceiling and floor (Earth work in trenches to be measured and paid for separately) including carriage of materials with in all leads and lifts of materials. | 146 | Running meter |  |  |  |
|  | Providing and fixing to wall ceiling and floor ISI marked 25mm( twenty five millimeters) nominal bore galvanized mild steel tubes ( medium grade ) tube fittings with clamps including making good the wall, ceiling and floor (Earth work in trenches to be measured and paid for separately) including carriage of materials with in all leads and lifts of materials. | 1256 | Running meter |  |  |  |
|  | Providing and fixing to wall ceiling and floor ISI marked 50mm( fifty millimeters) nominal bore galvanized mild steel tubes ( medium grade ) tube fittings with clamps including making good the wall, ceiling and floor (Earth work in trenches to be measured and paid for separately) including carriage of materials with in all leads and lifts of materials. | 22 | Running meter |  |  |  |
|  | Providing and fixing to wall ceiling and floor ISI marked 40mm( forty millimeters) nominal bore galvanized mild steel tubes ( medium grade ) tube fittings with clamps including making good the wall, ceiling and floor (Earth work in trenches to be measured and paid for separately) including carriage of materials with in all leads and lifts of materials. | 20 | Running running |  |  |  |
|  | Providing and fixing to wall ceiling and floor ISI marked 65mm( sixty five millimeters) nominal bore galvanized mild steel tubes ( medium grade ) tube fittings with clamps including making good the wall, ceiling and floor(Earth work in trenches to be measured and paid for separately) including carriage of materials with in all leads and lifts of materials. | 116 | Running meter |  |  |  |
| 250 | Wiring for light point / fan point / exhaust fan / call bell point with 1.5 Sq. mm. PVC insulated heat resistant flame retardant (HRFR) and low smoke single core (flexible) copper conductor cable in surface/recessed steel conduit with modular switch, modular plates, suitable G.I. box and earthing the light point with 1.5 Sq.mm. HRFRLS/PVC insulated single core copper conductor cable as required. |  |  |  |  |  |
| i | Group A | 96 | Points |  |  |  |
| ii | Group B | 102 | Points |  |  |  |
| iii | Group C | 2180 | Points |  |  |  |
| 251 | Wiring for twin control light point with 1.5 Sq. mm. PVC insulated heat resistant flame retardant (HRFR) and low smoke single core (flexible) copper conductor cable in surface/recessed steel conduit with 2-way, 5/6 amps. modular switch, modular plates, suitable G.I. box and earthing the light point with 1.5 Sq.mm. HRFRLS/PVC insulated single core copper conductor cable as required. |  |  |  |  |  |
|  | Group C. | 8 | Points |  |  |  |
| 252 | Wiring for circuit/sub-main with following size PVC insulated heat resistant flame retardant (HRFR) and low smoke single core (flexible) copper conductor cable in surface/recessed steel conduit along with 1 No.HRFRLS/PVC insulated single core copper conductor cable of same size for earthing as required. |  |  |  |  |  |
| i | 2 x 1.5 Sq. mm. | 3484 | Mtrs. |  |  |  |
| ii | 2 x 4 Sq. mm. | 3112 | Mtrs. |  |  |  |
| iii | 2 x 10 Sq. mm. | 323 | Mtrs. |  |  |  |
| iv | 2 x 16 Sq. mm. | 535 | Mtrs. |  |  |  |
| 253 | Wiring for circuit / sub-main with 4x4 Sq. mm. PVC insulated heat resistant flame retardant (HRFR) and low smoke single core (flexible) copper conductor cable in surface/recessed steel conduit along with 2 No.4 Sq.mm. (4X4+2X4)HRFRLS/PVC insulated single core copper conductor cable for earthing as required. | 2289 | Mtrs. |  |  |  |
| 254 | Wiring for circuit / sub-main with 4x16 Sq. mm. PVC insulated heat resistant flame retardant (HRFR) and low smoke single core (flexible) copper conductor cable in surface/recessed steel conduit along with 2 No.16 Sq.mm. (4x16+2x16) HRFRLS/PVC insulated single core copper conductor cable for earthing as required. |  |  |  |  |  |
| i | 4x10 Sq. mm. | 250 | Mtrs. |  |  |  |
| ii | 4x16 Sq. mm. | 225 | Mtrs. |  |  |  |
| 255 | Supplying and drawing following size of PVC insulated, heat resistant, flame retardant (HRFR) and low smoke single core (flexible) copper conductor cable in existing surface / recessed, Steel/PVC conduit as required. |  |  |  |  |  |
|  | 3 x 1.5 Sq. mm. | 2456 | Mtrs. |  |  |  |
| 256 | Supplying and fixing of following sizes of PVC conduit along with the accessories in surface / recess including cutting the wall and making good the same in case of recessed conduit as required:- |  |  |  |  |  |
| i | 25 mm. dia | 2960 | Mtrs. |  |  |  |
| ii | 50 mm. dia | 80 | Mtrs. |  |  |  |
| 257 | S/F of 75/ 110 mm dia PVC-U rigid pipes 6 KGF/CM along with the accessories in surface/ recess including cutting the wall and making good the same in case of recessed conduit as required. |  |  |  |  |  |
| i | 75 mm. dia | 40 | Mtrs. |  |  |  |
| ii | 110 mm. dia | 50 | Mtrs. |  |  |  |
| 258 | Supplying and fixing G.I. Modular box of (140mmx78mmx50mm) size with modular plate and cover in recess including providing and fixing 5 pin 5/6 amps modular socket outlet and 5/6 amps, modular switch, connections etc. as required. | 515 | No. |  |  |  |
| 259 | Supplying and fixing G.I. Modular box of (140mmx78mmx50mm) size with modular plate and cover in recess including providing and fixing 6 pin 15/16 amps modular socket outlet and 15/16 amps, modular switch, connections etc. as required. | 365 | Nos. |  |  |  |
| 260 | Supplying and fixing bakelite batten/angle holder including connections etc. as required:- | 22 | Nos. |  |  |  |
| 261 | Supplying and fixing Ding-Dong / Electronic musical bell, suitable for D.C./A.C. single phase,230 volts complete as required:- | 10 | Nos. |  |  |  |
| 262 | Supplying and erection of 6 amps. to 32 amps. rating, 10 KA breaking capacity, 240 volts, 'C' curves, miniature circuit breaker of following poles in the existing MCB DB complete with connections etc. as required:- |  |  |  |  |  |
|  | Single pole. Cat-A | 556 | Nos. |  |  |  |
| 263 | Supplying and erection of 40/50/63 amps rating, 10 KA breaking capacity, 240 volts, 'C' curves, miniature circuit breaker of following poles in the existing MCB DB complete with connections etc. as required:- |  |  |  |  |  |
| i | 40/50/63 Amp. Double pole. Cat-A. | 58 | Nos. |  |  |  |
| ii | 100 Amp Double pole. Cat-A. | 3 | Nos. |  |  |  |
| 264 | Supplying and fixing single pole, blanking plate in the existing MCB DB complete as required. | 77 | Nos. |  |  |  |
| 265 | Supplying and fixing following rating, double pole (single phase & neutral) 240 volts, residual current circuit breaker (RCCB), having a sensitivity current up to 300 miliampers in the existing MCB DB complete with connections, testing and commissioning etc. as required. |  |  |  |  |  |
| i | 40Amps. Cat-A. | 2 | Nos. |  |  |  |
| ii | 63Amps. Cat-A. | 56 | Nos. |  |  |  |
| iii | 100Amps. Cat-A. | 3 | Nos. |  |  |  |
| 266 | Supplying and fixing 20 Amps, 415 volts, TPN industrial socket outlet, 4-pole & earth, metal enclosed plug top, sheet steel enclosure, suitable to accommodate a 20 Amp TPN-MCB, on surface or in recess, with chained metal cover for the socket outlet, complete with connections, testing and commissioning etc. as required. | 20 | Nos. |  |  |  |
| 267 | Supplying and fixing 32 Amps, 415 volts, TPN industrial socket outlet, 4-pole & earth, metal enclosed plug top, sheet steel enclosure, suitable to accommodate a 30 Amp TPN-MCB, on surface or in recess, with chained metal cover for the socket outlet, complete with connections, testing and commissioning etc. as required. | 18 | Nos. |  |  |  |
| 268 | Supplying and fixing of following way, single pole and neutral sheet steel MCB distribution board, 240 volts, on surface / recess, complete with tinned copper bus- bar, wire-set, neutral link, earth bar, din-bar, detachable gland plate, blanking plate, cable, identification labels interconnections, phosphatized and powder painted, including earthing etc. as required:- |  |  |  |  |  |
| i | Double door-4 way | 4 | Nos. |  |  |  |
| ii | Double door-6way | 1 | Nos. |  |  |  |
| iii | Double door-8 way | 16 | Nos. |  |  |  |
| iv | Double door-12 way | 52 | Nos. |  |  |  |
| v | Double door-16 way | 34 | Nos. |  |  |  |
| 269 | Supplying and fixing following rating Modular switch /socket in the existing switch box / cover plate including connections etc. as required. |  |  |  |  |  |
| i | 25 Amps. Modular Switch | 48 | Nos. |  |  |  |
| ii | 25 Amps. Modular Socket | 48 | Nos. |  |  |  |
| 270 | Providing, laying of one No. aluminium conductor, PVC insulated and PVC sheathed, armoured/XLPE power cable, working voltage 1100 volts grade in ground to be laid 1 meter below the ground level including excavation sand cushioning , protective covering and refilling the trench etc. the etc. of the required size:- |  |  |  |  |  |
| i | Armoured cable 630sq. mm (3.5 core) | 30 | Mtrs. |  |  |  |
| ii | Armoured cable 185sq. mm (3.5 core) | 100 | Mtrs. |  |  |  |
| iii | Armoured cable 95sq. mm (3.5 core) | 50 | Mtrs. |  |  |  |
| 271 | Providing, laying and fixing of one No. aluminium conductor, PVC insulated and PVC sheathed, armoured/XLPE power cable, working voltage 1100 volts grade on surface etc. of the required size:- |  |  |  |  |  |
| i | Armoured cable 630sq. mm (3.5 core) | 50 | Mtrs. |  |  |  |
| ii | Armoured cable185sq. mm (3.5 core) | 65 | Mtrs. |  |  |  |
| iii | Armoured cable 95sq. mm (3.5 core) | 40 | Mtrs. |  |  |  |
| 272 | Supply,Erection,Installation and Commissioning of Early Streamer Emission Air terminal FRANCE PARATONNERRES Ioniflash Mach NG 60 compliant to the last NFC 17-102:2011 standard. The unit should be autonomous, with an electrostatic activation adapted to the earth electric field, warranted for 7 years by the manufacturer.The air terminal shall be made of non-corrosive materials. It shall be equipped with a central rod made of Stainless Steel 316L for a better conduction and a low corrosion factor. Perfomances of the unit should be certified in High Voltage and High Current Laboratory (CPRI and GERAC) as well as in real lightning conditions. The unit should have been tested in rain condition in order to insure the good insulation of the emission device (the insultation shouldn't be lower than 97%). The unit should have passed electrical test at 200kA in 10/350µs waveform.(Level-1 Protection in 79 Meters Radius) | 2 | Nos. |  |  |  |
| 273 | Supply, Erection,Installation and Commissioning of Elevation pole made of G.I of 5 meter height with a dia of 50mm with a M20 thread at the top to fix the unit. Base plate, clamps and all required fixings should also be supplied. Guy wires may be used in order to ensure the stability of the installation. | 2 | Nos. |  |  |  |
| 274 | Down Conductor - 2 downconductors per ESE terminal |  |  |  |  |  |
| 275 | Supply,Erection,Installation and Commissioning of Down conductor made of Copper for lower impedance. It should be a single core cable of minimum cross sectional area of 70mm² | 140 | Mtrs. |  |  |  |
| 276 | Supply,Erection,Installation and Commissioning of A Test Link Box (IP-55 enclosure) should be installed approximately at 2 meters above the ground, in order to realize independent measurement of the earthing system. | 4 | Nos. |  |  |  |
| 277 | Installations of a lightning strike counter I FLASH REPORT or equivalent on the down-conductor. The unit should be compliant to the IEC 62561-6. The counter should be able to register the lightning events from 1 kA to 100kA and should be able to register the date, the hour and the intensity of the lightning event. The counter should be able to communicate lightning events to the concerned person via bluetooth transmission to the smartphone. Its corresponding app should be available on Android and Apple App stores. The counter should be at least with the index protection IP67. | 2 | Nos. |  |  |  |
|  | Performance Recording Equipment |  |  |  |  |  |
| 278 | Installations of a lightning strike counter I FLASH REPORT or equivalent on the down-conductor. The unit should be compliant to the IEC 62561-6. The counter should be able to register the lightning events from 1 kA to 100kA and should be able to register the date, the hour and the intensity of the lightning event. The counter should be able to communicate lightning events to the concerned person via bluetooth transmission to the smartphone. Its corresponding app should be available on Android and Apple App stores. The counter should be at least with the index protection IP67. | 4 | Nos. |  |  |  |
|  | Advanced Earthing System |  |  |  |  |  |
| 279 | Supply,Erection,Installation and Commissioning of UniEarth ‘Tripolar’ model Maintenance free chemical earthing system consisting of environment friendly ground enhancing compound ‘G.E.C’ 80 kg or as required at site having anticorrosive and hygroscopic properties to replace excavated soil. It should consist of triple “Uniearth” Copper bonded extendable both sided top and bottom ribbed electrodes enabling rod to be extendable, as per site conditions and soil resistivity at various depth levels and different terrains. The electrodes should have coating of 250 microns of molecularly bonded pure electrolytic copper (99.9%) in 3 metre length, 15 mm diameter separated from each other with a span of 127 mm and interconnected amongst each other by another triple copper bonded steel flange of 4mm thickness, hence achieving 150mm outer diameter, 110mm inner diameter. The final connection to be provided with ‘Rod to conductor connector’ made of high quality brass with SS 304 bolts of 25mm length and 10 mm diameter. The electrode should be duly tested and certified by CPRI for 30 kA short time current test for 1 sec rms. | 4 | Nos. |  |  |  |
| 280 | Supplying and fixing copper tape 20mmx3mm thick on parapet or surface of wall for lightning conductor as required (for vertical run) | 70 | Mtrs. |  |  |  |
| 281 | Supplying and fixing copper tape 20mmx3mm thick on parapet or surface of wall for lightning conductor as required (for horizontal run) | 240 | Mtrs. |  |  |  |
| 282 | Providing and fixing of lightning conductor finial, made of 25 mm dia. 300 mm long copper tube, having single prong at top, with 85 mm dia 3 mm thick copper base plate including holes etc. complete as required. | 4 | Nos. |  |  |  |
|  | Earth Pit Cover |  |  |  |  |  |
| 283 | The earth pit cover 300 mm x 300mm x 220mm will be heavy duty type made of FRP with an openable lid for periodic inspection of the earth pit. |  |  |  |  |  |
| 294 | SITC of “Uniearth"‘Flat in Pipe’ model maintenance free GI chemical earthing system consisting of environment friendly ground enhancing compound “UniEarth” ‘G.E.C’ 100 kg having anticorrosive and hygroscopic properties to replace excavated soil. It should consist of “Uniearth” G.I. electrode, the electrode should be hot dipped galvanised with a thickness 86-100 microns in 3 metre length of 50mm diameter and pipe thickness 2.9 mm. The internal conductor should consist of 32 x 6 mm G.I. flat running throughout the length of electrode having 2 holes of 12 mm dia at the terminal for connection purpose. The annular space in between the flat and pipe should consist of “Uniearth” Electrofill – highly conductive compound facilitating faster dissipation of fault current. The electrode should be duly tested and certified by CPRI. | 6 | Set |  |  |  |
| 285 | SITC of "Uniearth" ‘Flat in Pipe’ model maintenance free Copper Bondedchemical earthing system consisting of environment friendly ground enhancing compound "Uniearth " ‘G.E.C’ at least 100 kg having anticorrosive and hygroscopic properties to replace excavated soil. | 6 | Nos. |  |  |  |
| 286 | Providing and fixing 6 SWG (4 mm dia.) G.I. wire on surface or in recess for loop earthing as required. | 172 | Mtrs. |  |  |  |
| 287 | SITC of "Uniearth" ‘Tripolar’ model Maintenance free chemical earthing system consisting of environment friendly ground enhancing compound ‘G.E.C’ 100 kg at site having anticorrosive and hygroscopic properties to replace excavated soil. It should consist of “Uniearth” Cu Bonded Flat in Pipe electrode; outer pipe should have coating of 100 microns of molecularly bonded pure electrolytic copper (99.9%) in 3 metre length of 50 mm diameter and pipe thickness 2.9 mm. The internal conductor should consist of 32 x 6 mm G.I. flat running throughout the length of electrode having 2 holes of 12 mm dia at the terminal for connection purpose. . The annular space in between the flat and pipe should consist of “Uniearth” Electrofill – highly conductive compound facilitating faster dissipation of fault current. It should consist of triple “Uniearth” Copper bonded extendable both sided top and bottom ribbed electrodes enabling rod to be extendable, as per site conditions and soil resistivity at various depth levels and different terrains. The electrodes should have coating of 250 microns of molecularly bonded pure electrolytic copper (99.9%) in 3 metre length, 15 mm diameter separated from each other with a span of 127 mm and interconnected amongst each other by another triple copper bonded steel flange of 4mm thickness, hence achieving 150mm outer diameter, 110mm inner diameter. The final connection to be provided with ‘Rod to conductor connector’ made of high quality brass with SS 304 bolts of 25mm length and 10 mm diameter. The electrode should be duly tested and certified by CPRI. | 14 | Set |  |  |  |
| 288 | Supplying and laying 8 SWG Copper wire at 0.50 mtr. below ground level for earth electrode conductor, including soldering etc. as required. | 190 | Mtrs. |  |  |  |
| 289 | Providing and installation of exhaust fan of following sizes in the existing opening, including making the hole to suit the size of the above fan, making good the damages, connections, testing and commissioning etc. as required:- |  |  |  |  |  |
| i | Exhaust Fan, Light duty, 225 mm sweep | 5 | Nos. |  |  |  |
| ii | Exhaust Fan, Light duty, 300 mm sweep | 54 | Nos. |  |  |  |
| iii | Exhaust Fan, Heavy duty, 300 mm sweep | 14 | Nos. |  |  |  |
| 290 | Providing and installation of stationary storage type Electric water heater (Geyser) of various sizes by means of Expansion-bolts with nuts and washers, including embedding of expansion-bolts in the wall, providing and fixing of Non-return valve, Dead weight safety valve, 2 No C.P. connection rods 18" long, making good the damages, electrical connections, safety valve connections, testing and commissioning etc. as required:- Make- Havalls, Recold, Bajaj. |  |  |  |  |  |
| i | 35 Liter capacity water heater (Cat-A) | 22 | Nos. |  |  |  |
| ii | 50 Liter capacity water heater (Cat-A) | 16 | Nos. |  |  |  |
| 291 | Supplying and fixing pendent luminiare light silver colour complete with connections etc. as required.Make: Philips, Bajaj, Havells, GE, Panasonic | 43 | Nos. |  |  |  |
| 292 | Supplying and fixing of fancy wall bracket containing thread type CFL lamp holder (s) of all sizes and shapes, complete with all accessories but excluding CFL lamp including making connections, testing etc. as required. |  |  |  |  |  |
| i | Long neck wall bracket 150 dia, single lamp.(Category-A) | 77 | Nos. |  |  |  |
| ii | Mirror Light single lamp holder | 16 | Nos. |  |  |  |
| iii | Bed/ Study Light | 109 | Nos. |  |  |  |
| 293 | Providing and installation of following type of Brass Chandelier with 3 Nos. LED lamp 7 watt with anti glare polycarbonate diffuser and seprated energy efficient constant current, non-integral, electronic driver; suitable for input voltage: AC 220-240 V, 50/60Hz, complete with all accessories, including making suitable cut-out in the existing ceiling, connections, testing and commissioning etc. as required. Make:- Philips, Havells, GE, Panasonic. | 4 | Nos. |  |  |  |
| 294 | Supplying and fixing of bulk head fitting of all sizes and shapes, containing one No. thread type LED lamp holder (s), complete with all accessories LED lamp including making connections, testing etc. as required. |  |  |  |  |  |
| i | Bulk head fitting, LED 10 watt type (Category-A) | 88 | Nos. |  |  |  |
| ii | Bulk head fitting, LED 24 watt type (Category-A) | 33 | Nos. |  |  |  |
| 295 | Supplying and fixing electrical switch board having 4 Nos. of 5 Amps. switches and sockets on suitable size metal box of 200mm x 250mm x 100mm deep (nominal size) on surface or in recess with suitable size phenolic laminated sheet cover in the front i/c providing and fixing 4 Nos. 5 pin 5/6 amp. socket outlet and piano type switch, connection, painting etc. as required. | 74 | Nos. |  |  |  |
| 296 | Providing, installation, testing and commissioning of ceiling fan with step type electronic fan regulator piano type, including wiring the down rods of standard length (up to 30 cm) with 16/0.20 mm twin twisted flexible, cotton braided, copper cable, including providing and fixing phenolic laminated sheet cover on the fan box and earthing etc. as required:- |  |  |  |  |  |
| i | Ceiling Fan 1200 mm sweep, Category-A |  |  |  |  |  |
|  | Makes:- Bajaj (Ultima) / Usha (Ultimate) / Havells (Velocity) | 509 | Nos. |  |  |  |
| ii | Ceiling Fan 1400 mm sweep, Category-A |  |  |  |  |  |
|  | Makes:- Bajaj (Ultima) / Usha (Ultimate) / Havells (Velocity) | 61 | Nos. |  |  |  |
| 297 | Providing, Installation, testing and commissioning of Turbo Force Air-circulator 450mm wall mounted fan as required complete in all respects. | 2 | Nos. |  |  |  |
| 298 | Supplying & fixing following type of Recess/surface mounted luminaires, white power coated CRCA housing diffusser to avoid glaire, pre-wired with stater, trigger circuit ,surge protection circuit lumen output of 100 lumiens per watt complete with all accesseries, connections , testing and commissioning etc. as required. |  |  |  |  |  |
| i | LED 15 watt surface type (Make:- Panasonic Cat No. ADL04 R 153 Equivalent | 441 | Nos. |  |  |  |
| ii | LED 1x20 watt,4 FEET Long LED (Make:- Panasonic ) Equivalent | 565 | Nos. |  |  |  |
| iii | LED 2x40 watt,4 FEET Long LED (Make:- Panasonic) Equivalent | 129 | Nos. |  |  |  |
| iv | LED 24 watt,4 FEET Long LED (Make:- Jaguar Cat No. LGLZO1X024XN) Equivalent | 21 | Nos. |  |  |  |
| 299 | Supplying and fixing Indoor Commercial suspended surface mounted Luminaire LED 20 watt Smart Bright is a reliable and afforsaid system Cat. No. BNO21CLED20SPSUNWGR complete with connections etc. as required and as approved by the Engineer-in-charge. | 22 | Nos. |  |  |  |
| 300 | Providing and installation of following type of recess mounting slim square type LED panel 40 watt in white finish with anti glare polycarbonate diffuser and seprated energy efficient constant current, non-integral, electronic driver; suitable for input voltage: AC 220-240 V, 50/60Hz, complete with all accessories, including making suitable cut-out in the existing ceiling, connections, testing and commissioning etc. as required. Philips, Havells, GE, Panasonic. | 55 | Nos. |  |  |  |
| 301 | Supplying, installation, testing and commissioning of 1.5 Ton (Hot &Cold) Split type Air-Conditioning unit of following make confirming to I.S.I.-1391 PART-1992 with ammendment No. 1 (expect power consumption norms) fitted with hermatically shielded air-compressor as required complete in all respects. |  |  |  |  |  |
|  | A.C. Unit 1.5 Ton capacity |  |  |  |  |  |
|  | Makes:- Voltas or equivalent /LG/Blue star. | 31 | Nos. |  |  |  |
| 302 | Supplying and fixing wall mounting voltage stabilizer of following rating with output 240 volts with voltage regulation range from 170 volt to 250 volt and auto cut off beyond this range and time delay operation for the surges and fluctuations suitable for 1.5/2.0 TR capacity split type Air-Conditioner including making connections etc. as required complete in all respects. |  |  |  |  |  |
|  | Automatic Voltage Stabilizer 4 KVA |  |  |  |  |  |
|  | Makes:- Whirlphool/V-Guard/Elincon/Godrej or equivalent. | 31 | Nos. |  |  |  |
| 303 | Providing & fixing of M.S. Outdoor heavy duty stand powder coated suitable suitable to hang 1.5/2.0 TR Split type AC with six nos. anchor bolts as required complete in all respects and as per direction of Engineer in charge. | 31 | No. |  |  |  |
| 304 | Providing & fixing of extra copper tubes for refrigerant and condensate (1/4" & 1/2") for 1.5 T.R. split type A.C. units and wiring with suitable size of HRFRLS copper conductor single core cables, including the cost of insulation etc. as required complete in all respects. | 155 | Metres |  |  |  |
| 305 | Supplying and fixing of 25mm dia of PVC drain pipe along with the accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required. | 155 | Metres |  |  |  |
| 306 | Providing and installation of following type of surface mounting LED Suspended Bay Light IP-65 90 watt with white powder coated and energy efficient constant current, non-integral, electronic driver; suitable for input voltage: AC 220-240 V, 50/60Hz, complete with all accessories, including making suitable cut-out in the existing ceiling, connections, testing and commissioning etc. as required.Make: Philips, Havells, GE, Panasonic. |  |  |  |  |  |
|  | LED Suspended Bay Light IP-65 90 watt | 4 | Nos. |  |  |  |
| 307 | Supplying, Installation, Testing and Commissioning of indoor s/door,Cubical type L.T. main panel. The Panel shall be compartmentalized type having space and arrangement for incoming and outgoing cables/bus ducting, switchgear, insulated and properly supported compartmentalized bus-bars, interconnection between bus bars and switchgear with auxiliary bus bars/insulated conductors/strips etc. It shall be fabricated in 14G/16G CRCA sheet, base frame75X40X3MM angle duly painted with Siemens Grey Powder Coated paint, Assembly Charges of 250A 4 strip Copper Busbar ( Vertical) & Earth strip throughout the length of Panel (current density of Copper Busbar shall be 1mmx1mm=1.0 Amp.) Coppper shall be Electric Grade E-91E, Busbar supports shall be DMC epoxy Insulators. All Busbars Links shall be covered/ insulated with Heat Shrinkable sleeves of coloured coded Red, Yellow, Blue & Black. Approximate Size of Panel H- 1500 X W-2050 X D-400MM. Assembly Charges of Copper solid/ Copper flexible wire interconnection Busbar to ACB/ SWITCH & ACB/ SWITCH to field side for Cable termination duly covered/ insulated with Heat Shrinkable sleeves of coloured coded Red, Yellow, Blue & Black. All Interconnections of fields side are supported by conical, L & Finger type insulators of adequate size to support & sustain the weight of cables. Control Wiring with Copper Flexible Wire (size of control wire shall be 2.5 sq. mm copper flexible for C.T. Circuit & 1.0 sq. mm for Control & 1.0sq. mm for Scada Wiring) with thimbles printed sleeves, tie & belt etc. Assembly Charges of Accessories like Gasket, Doorlocks, Copper Flexible door earth, legend plates etc. |  |  |  |  |  |
|  | MATERIAL: |  |  |  |  |  |
|  | MAIN INCOMER :- MCCB 250A, 3P 50 kA MPR with O/L & S/C protection with RHOM Ext. 1 No. Spreder Terminal MCCB 250A 3P 2 Nos., RHOM Et. 1 No., Digital Metering , Amp. Meter 96x96 MM-1 No., Volt Meter 96x96 MM-1 No., Current transformer-3 No, Phase indicating Lamp-3 No, Control SP MCB -3No,Terminal switch -1No. |  |  |  |  |  |
|  | MAIN INCOMER (POWER):-MCCB 160A, 3P 36 kA with O/L & S/C protection, Spreder Terminal for MCCB 160A C83P= 2 Nos, RHOM Ext. = 1 No., In |  |  |  |  |  |
|  | OUTGOING : |  |  |  |  |  |
|  | MCCB 63A 3P-25 KA with O/L & S/C protection -3 Nos., Spreder terminal MCCB 63 A 3P =6 Nos. |  |  |  |  |  |
|  | MAIN INCOMER (LIGHT):- MCCB 160A 1 No., 3P 36 kA= 1 No. TMR with O/L & S/C protection, Spreader terminal MCCB 160A 3P 2 Nos.,, RHOM Ext. 1 No., Onload change over switch 160A 4P 1 No., Indication lamp LED type R Y B= 6 Nos., Control SP MCB 6A=6Nos. |  |  |  |  |  |
|  | OUTGOING : |  |  |  |  |  |
|  | MCCB 63A 3P-25 KA with O/L & S/C protection -3 Nos., Spreder terminal MCCB 63 A 3P =6 Nos., RHOM Ext. = 3 NOs. |  |  |  |  |  |
|  | All interconnections of fields side are supported by conical, L & finger type insulators of adequate size to support & sustain the weight of cables, Control wiring with copper flexible FRLS wire with thimbles, printed sleeves, tie & belt etc; |  |  |  |  |  |
|  | The prices of complete job as per the specifications above shall be inclusive of gasket, doorlocks, reading glass,wooden, copper flexible door earth, legend plates etc, |  |  |  |  |  |
|  | The prices of complete job as per the specifications above shall be inclusive of gasket, doorlocks, reading glass,wooden, copper flexible door earth, legend plates etc, | 1 | Job. |  |  |  |
| 308 | Supplying, Installation, Testing and Commissioning of indoor s/door,Cubical type L.T. Panel. The Panel shall be compartmentalized type having space and arrangement for incoming and outgoing cables/bus ducting, switchgear, insulated and properly supported compartmentalized bus-bars, interconnection between bus bars and switchgear with auxiliary bus bars/insulated conductors/strips etc. It shall be fabricated in 14G/16G CRCA sheet, base frame75X40X3MM angle duly painted with Siemens Grey Powder Coated paint, Assembly Charges of 100A Copper Busbar ( Vertical) & Earth strip throughout the length of Panel (current density of Copper Busbar shall be 1mmx1mm=1.0 Amp.) Busbar supports shall be DMC epoxy Insulators. All Busbars Links shall be covered/ insulated with Heat Shrinkable sleeves of coloured coded Red, Yellow, Blue & Black. Approximate Size of Panel H- 900 X W-450 X D-200MM. Assembly Charges of Copper solid/ Copper flexible wire interconnection Busbar to MCCB/ SWITCH & MCCB/ SWITCH to field side for Cable termination duly covered/ insulated with Heat Shrinkable sleeves of coloured coded Red, Yellow, Blue & Black. All Interconnections of fields side are supported by conical, L & Finger type insulators of adequate size to support & sustain the weight of cables. Control Wiring with Copper Flexible Wire (size of control wire shall be 2.5 sq. mm copper flexible for C.T. Circuit & 1.0 sq. mm for Control & 1.0sq. mm for Scada Wiring) with thimbles printed sleeves, tie & belt etc. Assembly Charges of Accessories like Gasket, Doorlocks, Copper Flexible door earth, legend plates etc. |  |  |  |  |  |
|  | MATERIAL: |  |  |  |  |  |
|  | MAIN INCOMER :- MCCB 63 A 3P 25 kA with O/L & S/C Protecrtion-1 No., Spreader Link 63 A 3P-2 Nos., Indicating Lamp LED type R Y B -3 No, Control SP MCB -3No. |  |  |  |  |  |
|  | OUTGOING : |  |  |  |  |  |
|  | MCB 63 A DP 10 TMR with O/L & S/C protection for S.F. 3 Nos., Spreder terminal MCCB 63 amp. DP = 3 Nos. |  |  |  |  |  |
|  | All interconnections of fields side are supported by conical, L & finger type insulators of adequate size to support & sustain the weight of cables, Control wiring with copper flexible FRLS wire with thimbles, printed sleeves, tie & belt etc; |  |  |  |  |  |
|  | The prices of complete job as per the specifications above shall be inclusive of gasket, doorlocks, reading glass,wooden, copper flexible door earth, legend plates etc, |  |  |  |  |  |
|  | The prices of complete job as per the specifications above shall be inclusive of gasket, doorlocks, reading glass,wooden, copper flexible door earth, legend plates etc, | 6 | Job. |  |  |  |
| 309 | Supplying, Installation, Testing and Commissioning of indoor s/door,Cubical type L.T. main panel. The Panel shall be compartmentalized type having space and arrangement for incoming and outgoing cables/bus ducting, switchgear, insulated and properly supported compartmentalized bus-bars, interconnection between bus bars and switchgear with auxiliary bus bars/insulated conductors/strips etc. It shall be fabricated in 14G/16G CRCA sheet, base frame75X40X3MM angle duly painted with Siemens Grey Powder Coated paint, Assembly Charges of 1200A 4 strip Copper Busbar ( Vertical) & Earth strip throughout the length of Panel (current density of Copper Busbar shall be 1mmx1mm=1.66 Amp.) Copper shall be Electric Grade E-91E, Busbar supports shall be DMC epoxy Insulators. All Busbars Links shall be covered/ insulated with Heat Shrinkable sleeves of coloured coded Red, Yellow, Blue & Black. Approximate Size of Panel H- 2000 X W-3000 X D-800MM. Assembly Charges of Copper solid/ Copper flexible wire interconnection Busbar to ACB/ SWITCH & ACB/ SWITCH to field side for Cable termination duly covered/ insulated with Heat Shrinkable sleeves of coloured coded Red, Yellow, Blue & Black. All Interconnections of fields side are supported by conical, L & Finger type insulators of adequate size to support & sustain the weight of cables. Control Wiring with Copper Flexible Wire (size of control wire shall be 2.5 sq. mm copper flexible for C.T. Circuit & 1.0 sq. mm for Control & 1.0sq. mm for Scada Wiring) with thimbles printed sleeves, tie & belt etc. Assembly Charges of Accessories like Gasket, Doorlocks, Copper Flexible door earth, legend plates etc. |  |  |  |  |  |
|  | MATERIAL: |  |  |  |  |  |
|  | Incomer (A) ACB 1250A 3P 50 KA MDO type MPR with O/L & S/C protection with RHOM Ext. |  |  |  |  |  |
|  | MAIN INCOMER (POWER):-MCCB 630A, 3P 50 kA TMR with O/L & S/C protection, Digital Metering , Amp. Meter 96x96 MM-1 No., Volt Meter 96x96 MM-1 No., Ampere Selector Switch-1 No. Voltmeter Selector Switch-1 No., Current transformer-3 No,Phase indicating Lamp-3 No, Control SP MCB -3No,Terminal switch -1No. |  |  |  |  |  |
|  | OUTGOING : |  |  |  |  |  |
|  | MCCB 630A 3P-36 KA with O/L & S/C protection -2 Nos., Spreader link 630A 3P 2Nos. ,RHOM Ext. 1 No., MCCB 40 amp. 3P 63 KA TMR with O/L & S/C protection,Spreder terminal MCCB 400 A 3P 2 Nos., RHOM Ext. 1 No., MCCB 100 amp. 3P 36 KA TMR with O/L & S/C protection, Spreder terminal MCCB 100 amp. 3P 2 Nos., RHOM EXt. 1 No. Indication lamp LED type R Y B 3 Nos, Control SP MCB 6A MCCB 250A 3P-50 KA TMR with O/L & S/C Protection-1 No., Spreder link 250 A 4P-2 Nos. |  |  |  |  |  |
|  | MAIN INCOMER (LIGHT):- MCCB 400A 1 No., 3P 50 kA TMR with O/L & S/C protection, Spreader terminal MCCB 400A 3P 2 Nos.,, RHOM Ext. 1 No., Onload change over switch 400A 4P 1 No., Indication lamp LED type R Y B 6 Nos., Control SP MCB 6A=6Nos. |  |  |  |  |  |
|  | OUTGOING : |  |  |  |  |  |
|  | MCCB 100A 3P-36 KA with O/L & S/C protection -3 Nos., Spreder terminal MCCB 100 A 3P =6 Nos., RHOM Ext. 3 Nos. |  |  |  |  |  |
|  | All interconnections of fields side are supported by conical, L & finger type insulators of adequate size to support & sustain the weight of cables, Control wiring with copper flexible FRLS wire with thimbles, printed sleeves, tie & belt etc; |  |  |  |  |  |
|  | The prices of complete job as per the specifications above shall be inclusive of gasket, doorlocks, reading glass,wooden, copper flexible door earth, legend plates etc, |  |  |  |  |  |
|  | The prices of complete job as per the specifications above shall be inclusive of gasket, doorlocks, reading glass,wooden, copper flexible door earth, legend plates etc, | 1 | Job. |  |  |  |
| 310 | Supplying, Installation, Testing and Commissioning of indoor s/door,Cubical type L.T. Panel. The Panel shall be compartmentalized type having space and arrangement for incoming and outgoing cables/bus ducting, switchgear, insulated and properly supported compartmentalized bus-bars, interconnection between bus bars and switchgear with auxiliary bus bars/insulated conductors/strips etc. It shall be fabricated in 14G/16G CRCA sheet, base frame75X40X3MM angle duly painted with Siemens Grey Powder Coated paint, Assembly Charges of 63A Copper Busbar ( Vertical) & Earth strip throughout the length of Panel (current density of Copper Busbar shall be 1mmx1mm=1.0 Amp.) Busbar supports shall be DMC epoxy Insulators. All Busbars Links shall be covered/ insulated with Heat Shrinkable sleeves of coloured coded Red, Yellow, Blue & Black. Approximate Size of Panel H- 900 X W-450 X D-200MM. Assembly Charges of Copper solid/ Copper flexible wire interconnection Busbar to MCCB/ SWITCH & MCCB/ SWITCH to field side for Cable termination duly covered/ insulated with Heat Shrinkable sleeves of coloured coded Red, Yellow, Blue & Black. All Interconnections of fields side are supported by conical, L & Finger type insulators of adequate size to support & sustain the weight of cables. Control Wiring with Copper Flexible Wire (size of control wire shall be 2.5 sq. mm copper flexible for C.T. Circuit & 1.0 sq. mm for Control & 1.0sq. mm for Scada Wiring) with thimbles printed sleeves, tie & belt etc. Assembly Charges of Accessories like Gasket, Doorlocks, Copper Flexible door earth, legend plates etc. |  |  |  |  |  |
|  | MATERIAL: |  |  |  |  |  |
|  | MAIN INCOMER :- MCCB 100 A 3P 25 kA with O/L & S/C Protecrtion-1 No., Spreader Link 100 A 4P-2 Nos., Indicating Lamp LED type R Y B -3 No, Control SP MCB -3No. |  |  |  |  |  |
|  | OUTGOING : |  |  |  |  |  |
|  | MCB 100 A DP 10 TMR with O/L & S/C protection for Ground floor 3 Nos., Spreder terminal MCCB 100 amp. DP = 6 Nos. |  |  |  |  |  |
|  | All interconnections of fields side are supported by conical, L & finger type insulators of adequate size to support & sustain the weight of cables, Control wiring with copper flexible FRLS wire with thimbles, printed sleeves, tie & belt etc; |  |  |  |  |  |
|  | The prices of complete job as per the specifications above shall be inclusive of gasket, doorlocks, reading glass,wooden, copper flexible door earth, legend plates etc, |  |  |  |  |  |
|  | The prices of complete job as per the specifications above shall be inclusive of gasket, doorlocks, reading glass,wooden, copper flexible door earth, legend plates etc, | 3 | Job. |  |  |  |
| 311 | Supplying, Installation, Testing and Commissioning of indoor s/door,Cubical type L.T. Panel. The Panel shall be compartmentalized type having space and arrangement for incoming and outgoing cables/bus ducting, switchgear, insulated and properly supported compartmentalized bus-bars, interconnection between bus bars and switchgear with auxiliary bus bars/insulated conductors/strips etc. It shall be fabricated in 14G/16G CRCA sheet, base frame75X40X3MM angle duly painted with Siemens Grey Powder Coated paint, Assembly Charges of 100A Copper Busbar ( Vertical) & Earth strip throughout the length of Panel (current density of Copper Busbar shall be 1mmx1mm=1.0 Amp.) Busbar supports shall be DMC epoxy Insulators. All Busbars Links shall be covered/ insulated with Heat Shrinkable sleeves of coloured coded Red, Yellow, Blue & Black. Approximate Size of Panel H- 900 X W-1050 X D-200MM. Assembly Charges of Copper solid/ Copper flexible wire interconnection Busbar to MCCB/ SWITCH & MCCB/ SWITCH to field side for Cable termination duly covered/ insulated with Heat Shrinkable sleeves of coloured coded Red, Yellow, Blue & Black. All Interconnections of fields side are supported by conical, L & Finger type insulators of adequate size to support & sustain the weight of cables. Control Wiring with Copper Flexible Wire (size of control wire shall be 2.5 sq. mm copper flexible for C.T. Circuit & 1.0 sq. mm for Control & 1.0sq. mm for Scada Wiring) with thimbles printed sleeves, tie & belt etc. Assembly Charges of Accessories like Gasket, Doorlocks, Copper Flexible door earth, legend plates etc. |  |  |  |  |  |
|  | MATERIAL: |  |  |  |  |  |
|  | MAIN INCOMER :- MCCB 100 A 3P 25 kA with O/L & S/C Protecrtion-1 No., Spreader Link 100 A 4P-2 Nos., Indicating Lamp LED type R Y B -3 No, Control SP MCB -3No. |  |  |  |  |  |
|  | OUTGOING : |  |  |  |  |  |
|  | 3P Plug & socket 25 KA 8 Nos., MCB 25A TP 10 KA 8 Nos. |  |  |  |  |  |
|  | All interconnections of fields side are supported by conical, L & finger type insulators of adequate size to support & sustain the weight of cables, Control wiring with copper flexible FRLS wire with thimbles, printed sleeves, tie & belt etc; |  |  |  |  |  |
|  | The prices of complete job as per the specifications above shall be inclusive of gasket, doorlocks, reading glass,wooden, copper flexible door earth, legend plates etc, |  |  |  |  |  |
|  | The prices of complete job as per the specifications above shall be inclusive of gasket, doorlocks, reading glass,wooden, copper flexible door earth, legend plates etc, | 1 | Job. |  |  |  |
| 312 | Supplying, Installation, Testing and Commissioning of indoor s/door,Cubical type L.T. Panel. The Panel shall be compartmentalized type having space and arrangement for incoming and outgoing cables/bus ducting, switchgear, insulated and properly supported compartmentalized bus-bars, interconnection between bus bars and switchgear with auxiliary bus bars/insulated conductors/strips etc. It shall be fabricated in 14G/16G CRCA sheet, base frame75X40X3MM angle duly painted with Siemens Grey Powder Coated paint, Assembly Charges of 400A Copper Busbar ( Vertical) & Earth strip throughout the length of Panel (current density of Copper Busbar shall be 1mmx1mm=1.0 Amp.) Busbar supports shall be DMC epoxy Insulators. All Busbars Links shall be covered/ insulated with Heat Shrinkable sleeves of coloured coded Red, Yellow, Blue & Black. Approximate Size of Panel H- 1850 X W-1500 X D-400MM. Assembly Charges of Copper solid/ Copper flexible wire interconnection Busbar to MCCB/ SWITCH & MCCB/ SWITCH to field side for Cable termination duly covered/ insulated with Heat Shrinkable sleeves of coloured coded Red, Yellow, Blue & Black. All Interconnections of fields side are supported by conical, L & Finger type insulators of adequate size to support & sustain the weight of cables. Control Wiring with Copper Flexible Wire (size of control wire shall be 2.5 sq. mm copper flexible for C.T. Circuit & 1.0 sq. mm for Control & 1.0sq. mm for Scada Wiring) with thimbles printed sleeves, tie & belt etc. Assembly Charges of Accessories like Gasket, Doorlocks, Copper Flexible door earth, legend plates etc. |  |  |  |  |  |
|  | MATERIAL: |  |  |  |  |  |
|  | MAIN INCOMER :- MCCB 400 A 3P 25 kA with O/L & S/C Protecrtion-1 No., Spreader Link 400 A 4P-2 Nos., RHOM Ext. 1 NO., Indicating Lamp LED type R Y B -3 No, Control SP MCB 6A -3No. |  |  |  |  |  |
|  | OUTGOING : |  |  |  |  |  |
|  | MCCB 100 A 3P 36 KA TMR with O/L & S/C protection for F.F. 4 Nos., Spreder terminal 100A DP 8 Nos., RHOM Ext. 4 Nos. |  |  |  |  |  |
|  | All interconnections of fields side are supported by conical, L & finger type insulators of adequate size to support & sustain the weight of cables, Control wiring with copper flexible FRLS wire with thimbles, printed sleeves, tie & belt etc; |  |  |  |  |  |
|  | The prices of complete job as per the specifications above shall be inclusive of gasket, doorlocks, reading glass,wooden, copper flexible door earth, legend plates etc, |  |  |  |  |  |
|  | The prices of complete job as per the specifications above shall be inclusive of gasket, doorlocks, reading glass,wooden, copper flexible door earth, legend plates etc, | 1 | Job. |  |  |  |
| 313 | Supplying, Installation, Testing and Commissioning of indoor s/door,Cubical type L.T. Panel. The Panel shall be compartmentalized type having space and arrangement for incoming and outgoing cables/bus ducting, switchgear, insulated and properly supported compartmentalized bus-bars, interconnection between bus bars and switchgear with auxiliary bus bars/insulated conductors/strips etc. It shall be fabricated in 14G/16G CRCA sheet, base frame75X40X3MM angle duly painted with Siemens Grey Powder Coated paint, Assembly Charges of 100A Copper Busbar ( Vertical) & Earth strip throughout the length of Panel (current density of Copper Busbar shall be 1mmx1mm=1.0 Amp.) Busbar supports shall be DMC epoxy Insulators. All Busbars Links shall be covered/ insulated with Heat Shrinkable sleeves of coloured coded Red, Yellow, Blue & Black. Approximate Size of Panel H- 900 X W-450 X D-200MM. Assembly Charges of Copper solid/ Copper flexible wire interconnection Busbar to MCCB/ SWITCH & MCCB/ SWITCH to field side for Cable termination duly covered/ insulated with Heat Shrinkable sleeves of coloured coded Red, Yellow, Blue & Black. All Interconnections of fields side are supported by conical, L & Finger type insulators of adequate size to support & sustain the weight of cables. Control Wiring with Copper Flexible Wire (size of control wire shall be 2.5 sq. mm copper flexible for C.T. Circuit & 1.0 sq. mm for Control & 1.0sq. mm for Scada Wiring) with thimbles printed sleeves, tie & belt etc. Assembly Charges of Accessories like Gasket, Doorlocks, Copper Flexible door earth, legend plates etc. |  |  |  |  |  |
|  | MATERIAL: |  |  |  |  |  |
|  | MAIN INCOMER :- MCCB 100 A 3P 25 kA with O/L & S/C Protecrtion-1 No., Spreader Link 100 A 4P-2 Nos., Indicating Lamp LED type R Y B -3 No, Control SP MCB -3No. |  |  |  |  |  |
|  | OUTGOING : |  |  |  |  |  |
|  | MCB 63 A DP 10 TMR with O/L & S/C protection for S.F. 3 Nos., Spreder terminal MCCB 63 amp. DP = 3 Nos. |  |  |  |  |  |
|  | All interconnections of fields side are supported by conical, L & finger type insulators of adequate size to support & sustain the weight of cables, Control wiring with copper flexible FRLS wire with thimbles, printed sleeves, tie & belt etc; |  |  |  |  |  |
|  | The prices of complete job as per the specifications above shall be inclusive of gasket, doorlocks, reading glass,wooden, copper flexible door earth, legend plates etc, |  |  |  |  |  |
|  | The prices of complete job as per the specifications above shall be inclusive of gasket, doorlocks, reading glass,wooden, copper flexible door earth, legend plates etc, | 1 | Job. |  |  |  |
| 314 | Supplying, Installation, Testing and Commissioning of indoor s/door,Cubical type L.T. Panel. The Panel shall be compartmentalized type having space and arrangement for incoming and outgoing cables/bus ducting, switchgear, insulated and properly supported compartmentalized bus-bars, interconnection between bus bars and switchgear with auxiliary bus bars/insulated conductors/strips etc. It shall be fabricated in 14G/16G CRCA sheet, base frame75X40X3MM angle duly painted with Siemens Grey Powder Coated paint, Assembly Charges of 63A Copper Busbar ( Vertical) & Earth strip throughout the length of Panel (current density of Copper Busbar shall be 1mmx1mm=1.0 Amp.) Busbar supports shall be DMC epoxy Insulators. All Busbars Links shall be covered/ insulated with Heat Shrinkable sleeves of coloured coded Red, Yellow, Blue & Black. Approximate Size of Panel H- 900 X W-450 X D-200MM. Assembly Charges of Copper solid/ Copper flexible wire interconnection Busbar to MCCB/ SWITCH & MCCB/ SWITCH to field side for Cable termination duly covered/ insulated with Heat Shrinkable sleeves of coloured coded Red, Yellow, Blue & Black. All Interconnections of fields side are supported by conical, L & Finger type insulators of adequate size to support & sustain the weight of cables. Control Wiring with Copper Flexible Wire (size of control wire shall be 2.5 sq. mm copper flexible for C.T. Circuit & 1.0 sq. mm for Control & 1.0sq. mm for Scada Wiring) with thimbles printed sleeves, tie & belt etc. Assembly Charges of Accessories like Gasket, Doorlocks, Copper Flexible door earth, legend plates etc. |  |  |  |  |  |
|  | MATERIAL: |  |  |  |  |  |
|  | MAIN INCOMER :- MCCB 63 A 3P 25 kA with O/L & S/C Protecrtion-1 No., Spreader Link 63 A 3P-2 Nos., Indicating Lamp LED type R Y B -3 No, Control SP MCB -3No. |  |  |  |  |  |
|  | OUTGOING : |  |  |  |  |  |
|  | MCB 63 A DP 10 TMR with O/L & S/C protection for S.F. 3 Nos., Spreder terminal MCCB 63 amp. DP = 3 Nos. |  |  |  |  |  |
|  | All interconnections of fields side are supported by conical, L & finger type insulators of adequate size to support & sustain the weight of cables, Control wiring with copper flexible FRLS wire with thimbles, printed sleeves, tie & belt etc; |  |  |  |  |  |
|  | The prices of complete job as per the specifications above shall be inclusive of gasket, doorlocks, reading glass,wooden, copper flexible door earth, legend plates etc, |  |  |  |  |  |
|  | The prices of complete job as per the specifications above shall be inclusive of gasket, doorlocks, reading glass,wooden, copper flexible door earth, legend plates etc, | 7 | Job. |  |  |  |
| 315 | Supplying, Installation, Testing and Commissioning of indoor s/door,Cubical type L.T. main panel. The Panel shall be compartmentalized type having space and arrangement for incoming and outgoing cables/bus ducting, switchgear, insulated and properly supported compartmentalized bus-bars, interconnection between bus bars and switchgear with auxiliary bus bars/insulated conductors/strips etc. It shall be fabricated in 14G/16G CRCA sheet, base frame75X40X3MM angle duly painted with Siemens Grey Powder Coated paint, Assembly Charges of 800A 4 strip Copper Busbar ( Vertical) & Earth strip throughout the length of Panel (current density of Copper Busbar shall be 1mmx1mm=1.0 Amp.) Aluminium shall be Electric Grade E-91E, Busbar supports shall be DMC epoxy Insulators. All Busbars Links shall be covered/ insulated with Heat Shrinkable sleeves of coloured coded Red, Yellow, Blue & Black. Approximate Size of Panel H- 1850 X W-2850 X D-500MM. Assembly Charges of Copper solid/ Copper flexible wire interconnection Busbar to ACB/ SWITCH & ACB/ SWITCH to field side for Cable termination duly covered/ insulated with Heat Shrinkable sleeves of coloured coded Red, Yellow, Blue & Black. All Interconnections of fields side are supported by conical, L & Finger type insulators of adequate size to support & sustain the weight of cables. Control Wiring with Copper Flexible Wire (size of control wire shall be 2.5 sq. mm copper flexible for C.T. Circuit & 1.0 sq. mm for Control & 1.0sq. mm for Scada Wiring) with thimbles printed sleeves, tie & belt etc. Assembly Charges of Accessories like Gasket, Doorlocks, Copper Flexible door earth, legend plates etc. |  |  |  |  |  |
|  | MATERIAL: |  |  |  |  |  |
|  | Incomer (A) MCCB 800A 3P 50 KA MDO type MPR with O/L & S/C protection with RHOM Ext. |  |  |  |  |  |
|  | MAIN INCOMER (POWER):-MCCB 630A, 3P 50 kA TMR with O/L & S/C protection, Digital Metering , Amp. Meter 96x96 MM-1 No., Volt Meter 96x96 MM-1 No., Ampere Selector Switch-1 No. Voltmeter Selector Switch-1 No., Current transformer-3 No,Phase indicating Lamp-3 No, Control SP MCB 6A =3No,Speridal Terminal switch -2No. |  |  |  |  |  |
|  | OUTGOING : |  |  |  |  |  |
|  | MCCB 200A 3P-36 KA with O/L & S/C protection -2 Nos., ,RHOM Ext. 1 No., MCCB 160 amp. 3P= 3 Nos. ,Spreder terminal MCCB 160 A 3P 6 Nos., RHOM Ext. 3 Nos., |  |  |  |  |  |
|  | MAIN INCOMER (LIGHT):- MCCB 160A 1 No., 3P 50 kA TMR with O/L & S/C protection, Spreader terminal MCCB 160A 3P 2 Nos.,, RHOM Ext. 1 No., Onload change over switch 160A 4P 1 No., Indication lamp LED type R Y B =6 Nos., Control SP MCB 6A=6Nos. |  |  |  |  |  |
|  | OUTGOING : |  |  |  |  |  |
|  | MCCB 63A 3P-25 KA with O/L & S/C protection -3 Nos., Spreder terminal MCCB 63 A 3P =6 Nos., RHOM Ext. 3 Nos. |  |  |  |  |  |
|  | All interconnections of fields side are supported by conical, L & finger type insulators of adequate size to support & sustain the weight of cables, Control wiring with copper flexible FRLS wire with thimbles, printed sleeves, tie & belt etc; |  |  |  |  |  |
|  | The prices of complete job as per the specifications above shall be inclusive of gasket, doorlocks, reading glass,wooden, copper flexible door earth, legend plates etc, |  |  |  |  |  |
|  | The prices of complete job as per the specifications above shall be inclusive of gasket, doorlocks, reading glass,wooden, copper flexible door earth, legend plates etc, | 1 | Job. |  |  |  |
| 316 | Supplying, Installation, Testing and Commissioning of indoor s/door,Cubical type L.T. Panel. The Panel shall be compartmentalized type having space and arrangement for incoming and outgoing cables/bus ducting, switchgear, insulated and properly supported compartmentalized bus-bars, interconnection between bus bars and switchgear with auxiliary bus bars/insulated conductors/strips etc. It shall be fabricated in 14G/16G CRCA sheet, base frame75X40X3MM angle duly painted with Siemens Grey Powder Coated paint, Assembly Charges of 63A Copper Busbar ( Vertical) & Earth strip throughout the length of Panel (current density of Copper Busbar shall be 1mmx1mm=1.0 Amp.) Busbar supports shall be DMC epoxy Insulators. All Busbars Links shall be covered/ insulated with Heat Shrinkable sleeves of coloured coded Red, Yellow, Blue & Black. Approximate Size of Panel H- 900 X W-450 X D-200MM. Assembly Charges of Copper solid/ Copper flexible wire interconnection Busbar to MCCB/ SWITCH & MCCB/ SWITCH to field side for Cable termination duly covered/ insulated with Heat Shrinkable sleeves of coloured coded Red, Yellow, Blue & Black. All Interconnections of fields side are supported by conical, L & Finger type insulators of adequate size to support & sustain the weight of cables. Control Wiring with Copper Flexible Wire (size of control wire shall be 2.5 sq. mm copper flexible for C.T. Circuit & 1.0 sq. mm for Control & 1.0sq. mm for Scada Wiring) with thimbles printed sleeves, tie & belt etc. Assembly Charges of Accessories like Gasket, Doorlocks, Copper Flexible door earth, legend plates etc. |  |  |  |  |  |
|  | MATERIAL: |  |  |  |  |  |
|  | MAIN INCOMER (POWER):-MCCB 200A, 3P 36 kA TMR with O/L & S/C protection. |  |  |  |  |  |
|  | OUTGOING : |  |  |  |  |  |
|  | MCB 63 A DP 10 TMR with O/L & S/C protection for S.F. 3 Nos., Spreder terminal MCCB 63 amp. DP = 3 Nos. |  |  |  |  |  |
|  | All interconnections of fields side are supported by conical, L & finger type insulators of adequate size to support & sustain the weight of cables, Control wiring with copper flexible FRLS wire with thimbles, printed sleeves, tie & belt etc; |  |  |  |  |  |
|  | The prices of complete job as per the specifications above shall be inclusive of gasket, doorlocks, reading glass,wooden, copper flexible door earth, legend plates etc, |  |  |  |  |  |
|  | The prices of complete job as per the specifications above shall be inclusive of gasket, doorlocks, reading glass,wooden, copper flexible door earth, legend plates etc, | 3 | Job. |  |  |  |
| 317 | Supplying, Installation, Testing and Commissioning of indoor s/door,Cubical type L.T. Panel. The Panel shall be compartmentalized type having space and arrangement for incoming and outgoing cables/bus ducting, switchgear, insulated and properly supported compartmentalized bus-bars, interconnection between bus bars and switchgear with auxiliary bus bars/insulated conductors/strips etc. It shall be fabricated in 14G/16G CRCA sheet, base frame75X40X3MM angle duly painted with Siemens Grey Powder Coated paint, Assembly Charges of 200A Copper Busbar ( Vertical) & Earth strip throughout the length of Panel (current density of Copper Busbar shall be 1mmx1mm=1.0 Amp.) Busbar supports shall be DMC epoxy Insulators. All Busbars Links shall be covered/ insulated with Heat Shrinkable sleeves of coloured coded Red, Yellow, Blue & Black. Approximate Size of Panel H- 900 X W-600 X D-250MM. Assembly Charges of Copper solid/ Copper flexible wire interconnection Busbar to MCCB/ SWITCH & MCCB/ SWITCH to field side for Cable termination duly covered/ insulated with Heat Shrinkable sleeves of coloured coded Red, Yellow, Blue & Black. All Interconnections of fields side are supported by conical, L & Finger type insulators of adequate size to support & sustain the weight of cables. Control Wiring with Copper Flexible Wire (size of control wire shall be 2.5 sq. mm copper flexible for C.T. Circuit & 1.0 sq. mm for Control & 1.0sq. mm for Scada Wiring) with thimbles printed sleeves, tie & belt etc. Assembly Charges of Accessories like Gasket, Doorlocks, Copper Flexible door earth, legend plates etc. |  |  |  |  |  |
|  | MATERIAL: |  |  |  |  |  |
|  | MAIN INCOMER (POWER):-MCCB 200A, 3P 36 kA TMR with O/L & S/C protection, Spreder terminal MCCB 200 amp. 3P = 2 Nos., Indicator lamp LED type R Y B= 3 Nos., Control SP MCB 6A=3 Nos. |  |  |  |  |  |
|  | OUTGOING : |  |  |  |  |  |
|  | MCB 100A DP 10 TMR with O/L & S/C protection 6 Nos., Spreder terminal MCCB 100 amp. DP = 12 Nos. |  |  |  |  |  |
|  | All interconnections of fields side are supported by conical, L & finger type insulators of adequate size to support & sustain the weight of cables, Control wiring with copper flexible FRLS wire with thimbles, printed sleeves, tie & belt etc; |  |  |  |  |  |
|  | The prices of complete job as per the specifications above shall be inclusive of gasket, doorlocks, reading glass,wooden, copper flexible door earth, legend plates etc, |  |  |  |  |  |
|  | The prices of complete job as per the specifications above shall be inclusive of gasket, doorlocks, reading glass,wooden, copper flexible door earth, legend plates etc, | 1 | Job. |  |  |  |
| 318 | Supplying, Installation, Testing and Commissioning of indoor s/door,Cubical type L.T. Panel. The Panel shall be compartmentalized type having space and arrangement for incoming and outgoing cables/bus ducting, switchgear, insulated and properly supported compartmentalized bus-bars, interconnection between bus bars and switchgear with auxiliary bus bars/insulated conductors/strips etc. It shall be fabricated in 14G/16G CRCA sheet, base frame75X40X3MM angle duly painted with Siemens Grey Powder Coated paint, Assembly Charges of 160A Copper Busbar ( Vertical) & Earth strip throughout the length of Panel (current density of Copper Busbar shall be 1mmx1mm=1.0 Amp.) Busbar supports shall be DMC epoxy Insulators. All Busbars Links shall be covered/ insulated with Heat Shrinkable sleeves of coloured coded Red, Yellow, Blue & Black. Approximate Size of Panel H- 900 X W-600 X D-250MM. Assembly Charges of Copper solid/ Copper flexible wire interconnection Busbar to MCCB/ SWITCH & MCCB/ SWITCH to field side for Cable termination duly covered/ insulated with Heat Shrinkable sleeves of coloured coded Red, Yellow, Blue & Black. All Interconnections of fields side are supported by conical, L & Finger type insulators of adequate size to support & sustain the weight of cables. Control Wiring with Copper Flexible Wire (size of control wire shall be 2.5 sq. mm copper flexible for C.T. Circuit & 1.0 sq. mm for Control & 1.0sq. mm for Scada Wiring) with thimbles printed sleeves, tie & belt etc. Assembly Charges of Accessories like Gasket, Doorlocks, Copper Flexible door earth, legend plates etc. |  |  |  |  |  |
|  | MATERIAL: |  |  |  |  |  |
|  | MAIN INCOMER (POWER):-MCCB 160A, 3P 36 kA TMR with O/L & S/C protection= 1 No., Spreder terminal MCCB 160 amp. 3P = 2 Nos., Indicator lamp LED type R Y B= 3 Nos., Control SP MCB 6A=3 Nos. |  |  |  |  |  |
|  | OUTGOING : |  |  |  |  |  |
|  | MCB 100A DP 10 TMR with O/L & S/C protection 5 Nos., Spreder terminal MCCB 100 amp. DP = 10 Nos. |  |  |  |  |  |
|  | All interconnections of fields side are supported by conical, L & finger type insulators of adequate size to support & sustain the weight of cables, Control wiring with copper flexible FRLS wire with thimbles, printed sleeves, tie & belt etc; |  |  |  |  |  |
|  | The prices of complete job as per the specifications above shall be inclusive of gasket, doorlocks, reading glass,wooden, copper flexible door earth, legend plates etc, |  |  |  |  |  |
|  | The prices of complete job as per the specifications above shall be inclusive of gasket, doorlocks, reading glass,wooden, copper flexible door earth, legend plates etc, | 3 | Job. |  |  |  |
| 319 | Supplying and erection of Galvanized Iron (G.I.) pipe pole 'A' quality of suitable length and dia. 4.47 mm thickness, including fixing up to a given depth below G/L.The hole of excavation about 30 cm dia. and given depth to be filled in up to 15 cm below G/L with 1:3:6 cement concrete and there above plinth with 1:2:4 cement concrete up to a height of 45 cm from G/L. The radial thickness of the plinth above G/L should not be less than 6.35 cm and sufficient to completely flush a 180 mmx100 mmx 45 mm deep, glass filled Nylan F.R. grade box for housing a 16 Amp. MCB, the outer surface of the plinth to be finished with 1:3 cement plaster 6 mm thick, the fuse-box shall have a water tight cover, including painting of pole with two coats of approved color, brand and manufacture of paint over a priming coat complete in all respects as required:- |  |  |  |  |  |
|  | 4 Meter long having nominal bore dia. 65 mm planting depth 80 cm with pit depth 95 cm. | 37 | Nos |  |  |  |
| 320 | Supplying and erection of Galvanized Iron (G.I.) pipe pole 'A' quality of suitable length and dia. 4.85 mm thickness, including fixing up to a given depth below G/L.The hole of excavation about 30 cm dia. and given depth to be filled in up to 15 cm below G/L with 1:3:6 cement concrete and there above plinth with 1:2:4 cement concrete up to a height of 45 cm from G/L. The radial thickness of the plinth above G/L should not be less than 6.35 cm and sufficient to completely flush a 180 mmx100 mmx 45 mm deep, glass filled Nylan F.R. grade box for housing a 16 Amp. MCB, the outer surface of the plinth to be finished with 1:3 cement plaster 6 mm thick, the fuse-box shall have a water tight cover, including painting of pole with two coats of approved color, brand and manufacture of paint over a priming coat complete in all respects as required:- |  |  |  |  |  |
|  | 6 Meter long having nominal bore dia. 80 mm planting depth 120 cm with pit depth 135 cm. | 2 | Nos |  |  |  |
| 321 | Providing and installation of LED 50 Watt Post Top fixture are made of die cast alum. Base and spun alum. Top fitted with LED PT Module . Power LED's are mouned directly on extruded Alum. . Heat Sinks. A UV stabillzed injection molded P.C diffuser is provided for Glare Free Lighting withn high Visual comfort. Make :- Make: Havells,Panasonic . twinkle. ( At par twinkle Cat No. LuxMax-PT-155) | 37 | Nos |  |  |  |
| 322 | Providing and installation of LED 25 Watt Post Top fixture are made of die cast alum. Base and spun alum. Top fitted with LED PT Module . Power LED's are mouned directly on extruded Alum. . Heat Sinks. A UV stabillzed injection molded P.C diffuser is provided for Glare Free Lighting withn high Visual comfort. Make :- Make: Havells,Panasonic . twinkle. ( At par twinkle Cat No. LuxMax-PT-155) | 4 | Nos |  |  |  |
| 323 | Providing and installation of LED Flood Light IP 65 6000K 90 watt fixture are made of die cast alum. Base and spun alum. Top fitted with LED PT Module . Power LED's are mouned directly on extruded Alum. . Heat Sinks. A UV stabillzed injection molded P.C diffuser is provided for Glare Free Lighting withn high Visual comfort. Make :- Make: Havells,Panasonic . twinkle. ( At par Panasonic I/Cat No. PFLMO 1906) | 4 | Nos |  |  |  |
| 324 | Supplying and drawing following size of PVC insulated, heat resistant, flame retardant (HRFR) and low smoke single core (flexible) copper conductor cable in existing surface / recessed, Steel/PVC conduit as required. |  |  |  |  |  |
|  | 3x1.5 Sq. mm. | 171 | Metre |  |  |  |
|  | Makes:- L&T/ Havells/ Finolex. |  |  |  |  |  |
| 325 | Supplying and fixing of following sizes of PVC conduit along with the accessories in surface / recess including cutting the wall and making good the same in case of recessed conduit as required:- |  |  |  |  |  |
|  | 25 mm. dia | 8 | Metre |  |  |  |
|  | Makes:- Diplast/BEC/ Finolex. |  |  |  |  |  |
| 326 | Supplying and erection of 6 amps. to 32 amps. rating, 10 KA breaking capacity, 240 volts, 'C' curves, miniature circuit breaker of following poles in the existing MCB DB complete with connections etc. as required:- |  |  |  |  |  |
|  | Single pole. Cat-A. | 4 | Nos |  |  |  |
| 327 | Supplying and fixing following rating, double pole, 240 volts, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required. |  |  |  |  |  |
|  | 63 Amps. Cat-A. | 1 | Nos |  |  |  |
| 328 | Supplying and fixing of following sizes PVC -U rigid pipes 6 KGF/CM along with the accessories in surface / recess including cutting the wall and making good the same in case of recessed as required complete in all respects. |  |  |  |  |  |
|  | 75mm dia. (Makes:- Finolex/ Diplast/BEC.) | 10 | Metre |  |  |  |
| 329 | Providing and laying of one No. aluminium conductor, PVC insulated and PVC sheathed, armoured/XLPE power cable, working voltage 1100 volts grade direct in ground; to be laid 1 meter below the ground level including excavation and refilling the trench etc.as required, but excluding sand cushioning and protective covering:- |  |  |  |  |  |
|  | Armoured cable 10 sq. mm (four core) | 790 | Metre |  |  |  |
| 330 | Providing, laying and fixing of one No. aluminium conductor, PVC insulated and PVC sheathed, armoured/XLPE power cable, working voltage 1100 volts grade on surface etc. of the required size:- |  |  |  |  |  |
|  | Armoured cable 10 sq. mm (four core) | 167 | Metre |  |  |  |
| 331 | Supplying and fixing of following way, single pole and neutral sheet steel MCB distribution board, 240 volts, on surface / recess, complete with tinned copper bus- bar, wire-set, neutral link, earth bar, din-bar, detachable gland plate, blanking plate, cable, identification labels interconnections, phosphatized and powder painted, including earthing etc. as required:- |  |  |  |  |  |
| i | Double door-4 way | 4 | Nos |  |  |  |
| ii | Double door-6 way | 1 | Nos |  |  |  |
| 332 | P/L GI pipe 40 mm dia including asscessary, connection etc as required. | 12 | Metre |  |  |  |
| 333 | Supplying and erection of street light bracket made of G.I. pipe 'A' class of suitable length and dia, the pipe bended to give an angle of 100 to 110 degree fitted with bolt & nuts at the top of existing pole or wall including painting the pipe with two coats of approved paint over priming coat complete in all respects as required:- |  |  |  |  |  |
|  | 40 mm dia. G.I. pipe, heavy class | 4 | Nos |  |  |  |
| 334 | Supplying, Installation, Testing and Commissioning of 100 kVA at 0.8 power factor, 415 V , 50 Hz, Silent D.G.set conform to ISO 8528 specification and should meet CPCB norms complete as detailed below:- |  |  |  |  |  |
|  | DIESEL ENGINE : - ECO, FRIENDLY (CPCB norms compliance ). |  |  |  |  |  |
|  | 6 cylinders, 4 stroke cycle, water cooled turbo charged after cooled, developing 206 BHP at 1500 RPM under NTP condition of BS:5514. The engine shall be provided with electrical starting arrangement & shall give the electrical output of 100 kVA at 0.8 power factor, 415 V at the alternator terminal, complete with other accessories of the engine as under:- |  |  |  |  |  |
|  | COOLING SYSTEM - Radiator cooled, Engine mounted water pump, Thermostats, Coolant, Self contained piping. |  |  |  |  |  |
|  | FUEL SYSTEM - Bosch fuel system, Spin on type Fuel filters, Self contained piping. |  |  |  |  |  |
|  | LUBRICATING SYSTEM - Oil pump, Steiner, Lube oil cooler - Plate type, Spin on type Oil filter, Bypass filter, Self contained piping. |  |  |  |  |  |
|  | AIR IN TAKE SYSTEM - Dry type replaceable Paper element Air Cleaner with restriction indicator, Air intake manifold with necessary connections, Turbo charged after cooled. |  |  |  |  |  |
|  | EXHAUST SYSTEM - Exhaust manifold, Stainless steel exhaust flexible coupling, Silencer ( Hospital Grade ). |  |  |  |  |  |
|  | GOVERNING SYSTEM - PCC 1.2 controller |  |  |  |  |  |
|  | STARTING SYSTEM - Starter, 24V, DC, Battery charging alternator, With in-built Regulator. |  |  |  |  |  |
|  | OTHER SYSTEM - Flywheel, Flywheel housing. |  |  |  |  |  |
|  | GENSET CONTROLLER - |  |  |  |  |  |
|  | Cummins Power Command PCC 1301 microprocessor based integrated generator set monitoring, metering, protection and control system with built-in torque matched Volts/ Hz overload control. |  |  |  |  |  |
|  | Single Control for the Genset function :-Digital Voltage Control, Engine Control, Operator Interface, Protection, Advance Control Function. |  |  |  |  |  |
|  | Standard Features :- |  |  |  |  |  |
|  | Digital Full Wave SCR AVR for shunt - Digital Electronic Governing with temperature compensation and Smart Starting- SAE J1939 Interface to Full Authority Electronic (FAE) engines.- Engine Metering: Oil Pressure, Coolant Temperature, Battery Voltage, Engine Speed- AC Alternator Metering: L-L Voltage and N voltage (phase and average), Current (phase and total), Volt-Amperes (phase and total), and Frequency- Engine Protection: Low Lube Oil Pressure, High Coolant Temperature, Over speed, DC Over/Under/Weak Volts, Fail to Crank/Start, Sensor Failure- AC Alternator Protection: Over/Under Voltage, Over/Under Frequency, Over Current, Short Circuit, and Loss of AC Sensing- Fault Codes and Description on HMI- Data Logging: Engine Hours, Control Hours, Engine Starts and 10 Fault Codes- Control Set-Up without PC-based tool (InPower)- Battle Short fault bypass function- Configurable Cycle Cranking- 12 and 24 Volt DC Operation- Easy Wiring connectors for factory connections, terminal blocks for field connections- Configurable Time Delay Start/Stop- Sleep Mode Low power in Off and/or Auto -Programmable I/O(2 inputs and 2 outputs) expandable with AUX101/102 modules |  |  |  |  |  |
|  | Alternator :- |  |  |  |  |  |
|  | Stamford / Kirloskar / Cummins / Crompton make rated at 100 kVA, 415 Volts, 50 Hz, 0.8 Power factor, with Voltage regulation + / - 1% all load between no load to full load & factor 0.8 to unit, Speed 1500 RPM.having " H " class insulation. Winding connection will be Star connection. having over load capacity 10% for one hour in any 12 hours of operation without exceeding temperature rise limits specified in BS: 2613 or BS: 5000 when corrected to ambient temperature at site. |  |  |  |  |  |
|  | AVR - digital automatic voltage regulator ( part of PCC 1301 ) |  |  |  |  |  |
|  | Bearing :- Long life single bearing. |  |  |  |  |  |
|  | Enclosures :- Drip proof & screen protected IP-23. |  |  |  |  |  |
|  | Parallel operation;- All machines shell be suitable for operation in parallel. Damper winding shell be provided to facilitate parallel operation. |  |  |  |  |  |
|  | The alternator shell be of self-excited, self regulated, self ventilated in brushless design, provided with suitable automatic voltage regulator and conform BS:2613 or BS:5000 and shell give rated output at NTP condition. |  |  |  |  |  |
|  | One set of essential accessories shell be supplied with each D.G. set. This set of accessories shell comprise of the following:- |  |  |  |  |  |
|  | Base rail with integral fuel tank, One no. sub base tank of 330 liters capacity for DG set, For electrical control circuit of 24 volt DC, 2 Nos. batteries of 12 volts 180 AH each (dry and uncharged ) of PRESTOLITE/ Exide make with battery leads for electrical starting of DG set. |  |  |  |  |  |
|  | SOUND ATTENUATED SYSTEM |  |  |  |  |  |
|  | Thickness of sheet - 16 - G |  |  |  |  |  |
|  | High class sheet metal fabricated enclosure for reducing the noise level of DG set & also acts as a weather proof housing. Genset will be a integral part of acoustic enclosure and whole construction will be on multi-fold sheet channel & ISMC section. Enclosure construction is fully bolted keeping in view the major service requirements all doors are provided with specially designed hinges and lockable handles, Battery, Fuel tank is housed inside the enclosure. |  |  |  |  |  |
|  | ACOUSTIC MATERIALS :-Rock wool in the form of slabs of 100 mm thickness and 96 KG/ Metric cube density Specification of Rock wool conform to IS 8183 ). Further to increase the life of Acoustic material resin coated fiber glass cloth is provided on exposed surface of Rock wool slabs and the panels are supported by perforated sheet. |  |  |  |  |  |
|  | VENTILATION:- Acoustic enclosure is designed in such a way that there are no hot pockets around engine and it is provided with suitable designed engine radiator which does not allow the temperature to rise more then 7° C above ambient temperature. |  |  |  |  |  |
|  | To achieve optimal output and minimum sound level from the DG set, suitable openings with acoustic hood are provide for increasing the inflow of air required for combustion & forced ventilation. Air intake system as per the recommendations and engine requirement are provided. |  |  |  |  |  |
|  | Acoustic hoods with noise splitters provided to block and reduce the sound leakage. |  |  |  |  |  |
|  | The sound control system designed to supports the sound level to 75 db maximum at 1 meter distance in open free field environment as per ISO 8528 part 10. |  |  |  |  |  |
|  | SILENCER:- Specially designed low noise silencer is provided. Silencer and engine exhaust outlet, Connected with flexible SS bellow. |  |  |  |  |  |
|  | VIBRATION ISOLATION:- To avoid transfer of vibration from genset to enclosure & surrounding specially designed vibration isolators are used. |  |  |  |  |  |
|  | Complete rate of DG Set including, Price of DG set, Price of AMF Panel, Installation chargers Cable connection etc. completes in all respects: - | 1 | job |  |  |  |
| 335 | Supplying, Installation, Testing and Commissioning of 160 kVA at 0.8 power factor, 415 V , 50 Hz, Silent D.G.set conform to ISO 8528 specification and should meet CPCB norms complete as detailed below:- |  |  |  |  |  |
|  | DIESEL ENGINE : - ECO, FRIENDLY (CPCB norms compliance ). |  |  |  |  |  |
|  | Supplying, Installation, Testing and Commissioning of 160 kVA at 0.8 power factor, 415 V , 50 Hz, Silent D.G.set conform to ISO 8528 specification and should meet CPCB norms complete'6 cylinders, water cooled turbo charged after cooled, developing 206 BHP at 1500 RPM under NTP condition of BS:5514. The engine shall be provided with electrical starting arrangement & shall give the electrical output of 160 kVA at 0.8 power factor, 415 V at the alternator terminal, complete with other accessories of the engine WITH 100 Kva amf panel. |  |  |  |  |  |
|  | COOLING SYSTEM - Radiator cooled, Engine mounted water pump, Thermostats, Coolant, Self contained piping. |  |  |  |  |  |
|  | FUEL SYSTEM - Bosch fuel system, Spin on type Fuel filters, Self contained piping. |  |  |  |  |  |
|  | LUBRICATING SYSTEM - Oil pump, Steiner, Lube oil cooler - Plate type, Spin on type Oil filter, Bypass filter, Self contained piping. |  |  |  |  |  |
|  | AIR IN TAKE SYSTEM - Dry type replaceable Paper element Air Cleaner with restriction indicator, Air intake manifold with necessary connections, Turbo charged after cooled. |  |  |  |  |  |
|  | EXHAUST SYSTEM - Exhaust manifold, Stainless steel exhaust flexible coupling, Silencer ( Hospital Grade ). |  |  |  |  |  |
|  | GOVERNING SYSTEM - PCC 1.2 controller |  |  |  |  |  |
|  | STARTING SYSTEM - Starter, 24V, DC, Battery charging alternator, With in-built Regulator. |  |  |  |  |  |
|  | OTHER SYSTEM - Flywheel, Flywheel housing. |  |  |  |  |  |
|  | GENSET CONTROLLER - |  |  |  |  |  |
|  | Cummins Power Command PCC 1301 microprocessor based integrated generator set monitoring, metering, protection and control system with built-in torque matched Volts/ Hz overload control. |  |  |  |  |  |
|  | Single Control for the Genset function :-Digital Voltage Control, Engine Control, Operator Interface, Protection, Advance Control Function. |  |  |  |  |  |
|  | Standard Features :- |  |  |  |  |  |
|  | Digital Full Wave SCR AVR for shunt - Digital Electronic Governing with temperature compensation and Smart Starting- SAE J1939 Interface to Full Authority Electronic (FAE) engines.- Engine Metering: Oil Pressure, Coolant Temperature, Battery Voltage, Engine Speed- AC Alternator Metering: L-L Voltage and N voltage (phase and average), Current (phase and total), Volt-Amperes (phase and total), and Frequency- Engine Protection: Low Lube Oil Pressure, High Coolant Temperature, Over speed, DC Over/Under/Weak Volts, Fail to Crank/Start, Sensor Failure- AC Alternator Protection: Over/Under Voltage, Over/Under Frequency, Over Current, Short Circuit, and Loss of AC Sensing- Fault Codes and Description on HMI- Data Logging: Engine Hours, Control Hours, Engine Starts and 10 Fault Codes- Control Set-Up without PC-based tool (InPower)- Battle Short fault bypass function- Configurable Cycle Cranking- 12 and 24 Volt DC Operation- Easy Wiring connectors for factory connections, terminal blocks for field connections- Configurable Time Delay Start/Stop- Sleep Mode Low power in Off and/or Auto -Programmable I/O(2 inputs and 2 outputs) expandable with AUX101/102 modules |  |  |  |  |  |
|  | Alternator :- |  |  |  |  |  |
|  | Stamford / Kirloskar / Cummins / Crompton make rated at 100 kVA, 415 Volts, 50 Hz, 0.8 Power factor, with Voltage regulation + / - 1% all load between no load to full load & factor 0.8 to unit, Speed 1500 RPM.having " H " class insulation. Winding connection will be Star connection. having over load capacity 10% for one hour in any 12 hours of operation without exceeding temperature rise limits specified in BS: 2613 or BS: 5000 when corrected to ambient temperature at site. |  |  |  |  |  |
|  | AVR - digital automatic voltage regulator ( part of PCC 1301 ) |  |  |  |  |  |
|  | Bearing :- Long life single bearing. |  |  |  |  |  |
|  | Enclosures :- Drip proof & screen protected IP-23. |  |  |  |  |  |
|  | Parallel operation;- All machines shell be suitable for operation in parallel. Damper winding shell be provided to facilitate parallel operation. |  |  |  |  |  |
|  | The alternator shell be of self-excited, self regulated, self ventilated in brushless design, provided with suitable automatic voltage regulator and conform BS:2613 or BS:5000 and shell give rated output at NTP condition. |  |  |  |  |  |
|  | One set of essential accessories shell be supplied with each D.G. set. This set of accessories shell comprise of the following:- |  |  |  |  |  |
|  | Base rail with integral fuel tank, One no. sub base tank of 330 liters capacity for DG set, For electrical control circuit of 24 volt DC, 2 Nos. batteries of 12 volts 180 AH each (dry and uncharged ) of PRESTOLITE/ Exide make with battery leads for electrical starting of DG set. |  |  |  |  |  |
|  | CONTROL PANEL FOR DG SET : |  |  |  |  |  |
|  | The Generator control shell be indoor type, floor mounted, dust and vermin proof in sheet steel construction. The panel shell have doors at the front and back for proper maintenance. The panel shell have steel channel fabricated kick-plate and bolted type cable gland plate fitted at the bottom. The panel shell be constructed from 2 mm thick steel sheet. All the joint shell have proper gasket. |  |  |  |  |  |
|  | Monitoring and control devices shell be housed on the front door. Generally the construction of the panel will be such that various equipments for application will be housed in compartment. All incoming and out going power and control cables shell be from the bottom. |  |  |  |  |  |
|  | The panel will be equipped as follows :- |  |  |  |  |  |
|  | Instrument :- 1- Voltmeter with selector switch, 1- Ammeter with selector switch, 1- Frequency meter, 1- KWH meter, 1- KW meter |  |  |  |  |  |
|  | Indication Lamps :- Genset Running, Set on Load, Phase Indication. |  |  |  |  |  |
|  | SOUND ATTENUATED SYSTEM |  |  |  |  |  |
|  | Thickness of sheet - 16 - G |  |  |  |  |  |
|  | High class sheet metal fabricated enclosure for reducing the noise level of DG set & also acts as a weather proof housing. Genset will be a integral part of acoustic enclosure and whole construction will be on multi-fold sheet channel & ISMC section. Enclosure construction is fully bolted keeping in view the major service requirements all doors are provided with specially designed hinges and lockable handles, Battery, Fuel tank is housed inside the enclosure. |  |  |  |  |  |
|  | ACOUSTIC MATERIALS :-Rock wool in the form of slabs of 100 mm thickness and 96 KG/ Metric cube density Specification of Rock wool conform to IS 8183 ). Further to increase the life of Acoustic material resin coated fiber glass cloth is provided on exposed surface of Rock wool slabs and the panels are supported by perforated sheet. |  |  |  |  |  |
|  | VENTILATION:- Acoustic enclosure is designed in such a way that there are no hot pockets around engine and it is provided with suitable designed engine radiator which does not allow the temperature to rise more then 7° C above ambient temperature. |  |  |  |  |  |
|  | To achieve optimal output and minimum sound level from the DG set, suitable openings with acoustic hood are provide for increasing the inflow of air required for combustion & forced ventilation. Air intake system as per the recommendations and engine requirement are provided. |  |  |  |  |  |
|  | Acoustic hoods with noise splitters provided to block and reduce the sound leakage. |  |  |  |  |  |
|  | The sound control system designed to supports the sound level to 75 db maximum at 1 meter distance in open free field environment as per ISO 8528 part 10. |  |  |  |  |  |
|  | SILENCER:- Specially designed low noise silencer is provided. Silencer and engine exhaust outlet, Connected with flexible SS bellow. |  |  |  |  |  |
|  | VIBRATION ISOLATION:- To avoid transfer of vibration from genset to enclosure & surrounding specially designed vibration isolators are used. |  |  |  |  |  |
|  | Complete rate of DG Set including, Price of DG set, Price of AMF Panel, Installation chargers Cable connection etc. completes in all respects: - | 1 | job |  |  |  |
| 386 | Supplying, installation, testing and commisioning of Digital EPABX syatem configure with 06 Trunk Lines,10 Digital Extn & 80 Extensions, with 01 KTS expandable upto 128 ports compleate in all respect. Makes: Coral,Unify, NEC, SiemensHipath, Panasonic, Matrix telecom. | 1 | Each |  |  |  |
| 387 | Providing and fixing of digital key telephone on line LCD display with 8 programmable keys complete in all respect as directed by Engineer-in-charge. Make Panasonic, Samsung, Beetal. | 10 | Each |  |  |  |
| 388 | Providing and fixing of Analog key telephone on line LCD display with 8 programmable keys complete in all respect as directed by Engineer-in-charge. Make Panasonic, Samsung, Beetal. | 58 | Each |  |  |  |
| 389 | supply and fixing (Krone or standred make as aprooved by the engg. Incharge) MDF with Intoel IPM - 100 pairs including punching and identification as required compleate in all respect. | 1 | Each |  |  |  |
| 390 | supply and fixing (Krone or standred make as aprooved by the engg. Incharge) IDF with Module - 100 pairs including punching and identification as required compleate in all respect. | 1 | Each |  |  |  |
| 391 | supply and fixing (Krone or standred make as aprooved by the engg. Incharge) IDF with Module - 10 pairs including punching and identification as required compleate in all respect. | 4 | Each |  |  |  |
| 392 | supply and fixing (Krone or standred make as aprooved by the engg. Incharge) IDF with Module - 50 pairs including punching and identification as required compleate in all respect. | 2 | Each |  |  |  |
| 393 | supply and laying of PVC insulated Telephone cable – 2 pair 0.5sq.mm including connections etc as reqd complete in all respects. Makes:Finolex,Delton,Polycab,National. | 4080 | p/mtr. |  |  |  |
| 394 | supply and laying of PVC insulated Telephone cable – 10 pair 0.5sq.mm including connections etc as reqd complete in all respects. Makes:Finolex,Delton,Polycab,National. | 250 | p/mtr. |  |  |  |
| 395 | supply and laying of PVC insulated Telephone cable –50 pair 0.5sq.mm including connections etc as reqd complete in all respects. Makes:Finolex,Delton,Polycab,National. | 140 | p/mtr. |  |  |  |
| 396 | supply and laying of Jumper wire for connectiion of above modules including connections etc as reqd complete in all respects. Makes:Finolex,Delton,Polycab,National. | 200 | p/mtr. |  |  |  |
| 397 | Providing and fixing of 15 U Rack wall mounting of standard design as approved and complete in all respect as directed by Engineer-in-Charge.Makes: President, Valrack, Comrack. | 1 | Each |  |  |  |
| 398 | Supplying and fixing PVC Modular box of (85 mm x 85mm x 40mm) size in white with modular plate and cover in recess including providing and fixing modular Telephone Sockets, RJ11 telephone Jack single with shutter (At par Code:21780 Roma, Code: 20857. ROMA, Make, L&T, Havelles, Anchor or standred make as aprooved by the Engg. Incharge) with Deko single mounting plates 1 module (code : 21317WH) complete connections etc. as required. | 68 | Each |  |  |  |
| 399 | Supplying & fixing of 2 kVA On-line UPS with maximum 2 hours backup VAH 4032 complete in all respect as directed by Engineer-in-charge. Make: Emersion, Voltas, Excide. | 1 | Each |  |  |  |
| 400 | Supply Installation testing and Comissioning of UTP Cat 6 UTP Cable, Transmission frequency of 250 MHz (Minimum),cable Should be 4 pair and Cable should be Fire Retardant.(R&M/Systimax/Seimon) | 20800 | Mtr |  |  |  |
| 401 | Supply Installation testing and Comissioning of Square plate, 86mmx86mm with dimension, Write on labels in transparent plastic window – supplied with plate, face plate should be of ABS Plastic material.Make: (R&M/Systimax/Seimon) | 460 | Each |  |  |  |
| 402 | Supply Installation testing and Comissioning of information outlet belongs to Category 6, EIA/TIA 568-C.2 Information outlets Should accept cables from 22-24 AWG copper,Should be PCB free and Tool less will be added advantage, Information outlet should be of Halogen Free material,Should be Certified by independent labs like ETL/GHMT/3P for compliance Make:(R&M/Systimax/Seimon) | 460 | Each |  |  |  |
| 403 | Supply Installation testing and Comissioning of 24-port 19" 1 U jack panel which Should Be made of sheet steel 1.5 mm, Should be 19" 1U straight Patch Panel, 24-port, Should have integral cable management Metal shelf,Should accept Shielded as well as Unshielded jacks, Should have rear cable management shelf metallic powder coated. Make: (R&M/Systimax/Seimon) | 27 | Each |  |  |  |
| 404 | Supply Installation testing and Comissioning of PVC 3X3 inch wall mount gang box for fixing of face plate | 475 | Each |  |  |  |
| 405 | Supply Installation testing and Comissioning of 1 Mtr UTP Cat6 cable which Should be Compliant with Cat.6 requirements of ISO/IEC 11801, EN 50173, EN 50168 and EIA/TIA 568.C.2, Should be stranded bare copper, Should be unshielded. Make:(R&M/Systimax/Seimon) | 530 | Each |  |  |  |
| 406 | Supply Installation testing and Comissioning of 2 Mtr UTP Cat6 cable which Should be Compliant with Cat.6 requirements of ISO/IEC 11801, EN 50173, EN 50168 and EIA/TIA 568.C.2, Should be stranded bare copper, Should be unshielded. Make:(R&M/Systimax/Seimon) | 530 | Each |  |  |  |
| 407 | Supply Installation testing and Comissioning of OFC Armoured outdoor SINGLE MODE 6/12 CORE - OS2 . Should be ISO.IEC 11801 - 2nd Edition, type OS2 and ITU-T REC G 652D. Tube Idenification :Single tube/Multiple tube. Fibre protection (Tube) : Polybutylene Terephthalate (PBT). Water Blocking :Thixotropic Gel (Tube) and Petroleum Jelly (Interstices). Core Wrapping : Polyethylene Terephthalate . Armouring : Corrugated Steel Tape Armour (ECCS Tape). Strength Member: Two Steel wires on periphery/Two FRP rods on periphery /Central Strength Member FRP. Sheath : UV Stabilized Polyethylene (HDPE). Maximum. Tensile Strength-Short Term : 1500N or better. Mass (Nominal) : minimum 95 kg/km Make:(R&M,Siemon,Systimax) | 200 | Each |  |  |  |
| 408 | Supply Installation testing and Comissioning of 12 Port fiber LIU which have sufficient slots to accommodate 24/12 Duplex LC/SC Ports ,Should have fiber management provision inside with splice tray and other accessories, Should be rack mountable 1U,Should have Splice holder for minimum 24 Fiber cores ,Should be made of Cold Rolled Steel ,Material Should steel: 1.5 mm, powder-coated Make:(R&M,Siemon,Systimax) | 4 | Each |  |  |  |
| 409 | Supply Installation testing and Comissioning of fiber pigtail which have Connector type LC, Fiber Type SM OS2,Compact design (SFF). 1.25 mm ferrule technology, Length 1meter/1.5 meter.Make:(R&M,Siemon,Systimax) | 24 | Each |  |  |  |
| 410 | Supply Installation testing and Comissioning of optical fiber patch leads shall comprise of Singlemode category Jacket should be LSZH sheath,Connector: Zirconia ceramic ferrule,Conector type Duplex LC-LC with length of 3 mtr.Make:(R&M,Siemon,Systimax) | 4 | Each |  |  |  |
| 411 | Supply Installation testing and Comissioning of fiber adaptor which have LC Duplex singlemode adapter with Quick mounting clip integrated.Protection class of IP-20 rated with Material :fiber- (halogen-free )Make:(R&M,Siemon,Systimax) | 24 | Each |  |  |  |
| 412 | Supply Installation testing and Comissioning of splicing and Optical connectivity test report for per core of OFC complete in all respect as directed by Engineer-in-Charge. | 24 | Each |  |  |  |
| 413 | Supply Installation testing and Comissioning of 3 KVA UPS ONLINE Fully Microprocessor Controlled, Double Conversion, IGBT Inverter. UPS should have Intelligent LCD Display to show all the parameters with Inbuilt Isolation Transformer. Input Voltage Range 320-480VAC (Three Phase). Input Power Factor Up to 0.95, THD <4%. . Output Power factor 0.7., Efficiency >92% . Cold Start UPS should be capable of switching on directly on Batteries. Output Voltage 220/230/240 VAC+/-2% (Selectable) . Battery Back up 60 Minutes . Battery Configuration Minimum 7680VAH with Batteries Rack. Make Libert/APC/ Numeric | 3 | Each |  |  |  |
| 414 | Supply Installation testing and Comissioning of Layer -2 switch 24-port Gigabit managed switch with 4 SFP combo Port.Switch should support Web based authentication provides network admission control through web browser to any host devices and operating systems. The features (DHCP Snooping, IP Source Guard, and Dynamic ARP Inspection) above work together to prevent DOS attacks in the network, thereby increasing network availability. PVE (also known as protected ports) provides Layer 2 isolation between devices in the same VLAN, supports multiple uplinks. The ability to lock Source MAC addresses to ports, and limits the number of learned MAC addresses. Support for up to 512 rules Make Cisco/Juniper/Allied Telesis | 22 | Each |  |  |  |
| 415 | Supply Installation testing and Comissioning of 22 U Racks manufactured out of steel sheet punched, formed, welded and Powder coated with Adjustable, 19” verticals with Punched 9mm Square Hole and Universal 12.7mm-15.875mm-15.875mm alternating hole pattern offers greater mounting flexibility, It should be 600MM Wide,800MM Deep and Overall height 1160 MM and maximizes usable mounting space including accessories 4 Fan and 6X5 AMP power Strip, PDU, Hardware Mounting Kit.(For all Floors) Make: President/Netrack /Valrack | 2 | Each |  |  |  |
| 416 | Supply Installation testing and Comissioning of 42 U manufactured out of steel sheet punched, formed, welded and Powder coated with adjustable, 19” verticals with Punched 9mm Square Hole and Universal 12.7mm-15.875mm-15.875mm alternating hole pattern offers greater mounting flexibility, It should be 600MM Wide,800MM Deep, front Glass door with side metal panels including accessories 4 Fan and 2nos of 10X5AMP power Strip with vertical mounting, Hardware Mounting Kit.(For Data Centre) Make: President/Netrack /Valrack | 1 | Each |  |  |  |
| 417 | Supply Installation testing and Comissioning of Single mode fiber module with with 1000 base ( Module should be of same OEM as quoted for switch) | 4 | Each |  |  |  |
| 418 | Supply Installation testing and Comissioning of MK Channel NCT ( 50mm x 50mm ) Complete the job in all respect upto entire satisfaction of the Engineer -in-charge of work | 1000 | P/Mtr |  |  |  |
| 419 | Supply Installation testing and Comissioning of PVC pipe25mm dia ISI marked ( Medium ) recessed in wall / ceiling etc. including the cost of PVC bends , inspection boxes , iron hooks and cement concrete etc. complete in all respect upto the entire satisfaction of Engineer-in-charge of work Make: BEC, AKG, Polyplast / Diplast | 3000 | P/Mtr |  |  |  |
| 420 | Supply Installation testing and Comissioning of Wireless access point 802.11ac Wave 1 support with 3x3 MIMO and two spatial streams,AP have system memory of 512 MB DRAM 64 MB flash support to Optimized AP Roaming, AP support to 20-, 40-, and 80-MHz EAP-Transport Layer Security (TLS), EAP-Tunneled TLS (TTLS) or Microsoft Challenge Handshake Authentication Protocol Version 2 (MSCHAPv2) Protected EAP (PEAP) v0 or EAP-MSCHAPv2, EAP-Flexible Authentication via Secure Tunneling (FAST), PEAP v1 or EAP-Generic Token Card (GTC) device has 2.4 GHz, gain 4 dBi, internal omni, horizontal beamwidth 360°, 5 GHz, gain 4 dBi, internal omni, horizontal beamwidth 360° EAP-Subscriber Identity Module (SIM), Multimedia: Wi-Fi Multimedia (WMM) Other: FCC Bulletin OET-65C and RSS-102 Operating temperature for device: 32° to 104°F (0° to 40°C) All devices should included support and warranty for 1 years. Make: Cisco/HP/Alcatel | 1 | Each |  |  |  |
| 421 | Supply Installation testing and Comissioning of wireless hardware controllor which Support for up to 50 access points and 500 clients 802.11n ready support up to 500 Mbps.Full Control and Provisioning of Wireless Access Points (CAPWAP) access point to controller encryption. Allows access points to dynamically establish wireless connections without the need for a physical connection to the wired network.It supports rogue access point detection and detection of denial-of-service attacks.Management frame protection detects malicious users and alerts network administrators. It should be work on CleanAir® Technology Detects, classifies, locates, and mitigates RF interference to provide performance protection for 802.11n networks. All devices should included support and warranty for 1 years. Make: Cisco/HP/Juniper | 42 | Each |  |  |  |
| 422 | Supply Installation testing and Comissioning of licenses for contollor integration and application manageability for wireless network. Make: Cisco/HP/Juniper | 48 | Each |  |  |  |
| 423 | Supply Installation testing and Comissioning of E UTM Firewall shall support at least 600-800 Users/Nodes & there should be unrestricted user licensing,UTM/Full DPI Firewall throughput shall be 700 Mbps,IPS throughput should be 1.7 Gbps,Minimum Antivirus throughput shall be 1 Gbps,Minimum IMIX throughput shall be 1.5 Gbps ,Firewall/UTM shall support minimum 400000 or more concurrent sessions/ connections,Firewall/UTM shall be MultiCoreNetworing Specific processor[s] based, hardened appliance with minimum 8 Cores, 2 GB RAM & Flash based Configuration storage,Firewall/UTM shall have minimum 10 x 1GbE Copper, 6 x 1GbE SFP and 2 x 10 GbE SFP+ Interfaces, with 1 each of Console interface & USB interface from Day One,UTM/Firewall shall be part of Challengers/Leaders Magic Quadrant of Gartner for the Year 2015 and shall have achieved at Leaders status for atleast 3 Consecutive years.The UTM should support 802.IQ Trunking and should support minimum 128 Vlans.UTM/Firewall OEM shall be Recommended OEM by NSSLabs for atleast 3 consecutive years including 2016.Gateway Antivirus should be able to scan the 50+ Protocols including HTTP, FTP, SMTP, POP3 and IMAP.Should support Clean Virtual Private Network (VPN) technology. Offer will be quoted with 1 year subscription. Make Sonicwall/Cisco/Watchguard | 1 | Each |  |  |  |
| 424 | Supply Installation testing and Comissioning of Layer -2 switch 24-port Gigabit managed switch POE with SFP combo Port.Switch should support Web based authentication provides network admission control through web browser to any host devices and operating systems. The features (DHCP Snooping, IP Source Guard, and Dynamic ARP Inspection) above work together to prevent DOS attacks in the network, thereby increasing network availability. PVE (also known as protected ports) provides Layer 2 isolation between devices in the same VLAN, supports multiple uplinks. The ability to lock Source MAC addresses to ports, and limits the number of learned MAC addresses. Support for up to 512 rules Make : Cisco/Juniper/Allied Telesis | 2 | Each |  |  |  |
| 425 | Supply Installation testing and Comissioning of Layer -2 switch 8-port Gigabit managed POE switch with 2 SFP combo Port.Switch should support Web based authentication provides network admission control through web browser to any host devices and operating systems. The features (DHCP Snooping, IP Source Guard, and Dynamic ARP Inspection) above work together to prevent DOS attacks in the network, thereby increasing network availability. PVE (also known as protected ports) provides Layer 2 isolation between devices in the same VLAN, supports multiple uplinks. The ability to lock Source MAC addresses to ports, and limits the number of learned MAC addresses. Support for up to 512 rules Make : Cisco/Juniper/Allied Telesis | 3 | Each |  |  |  |
| 426 | Supplying, installation, testing and commissioning of 1080p vandal-resistant IP micro dome camera with 1/2.7-inch CMOS, Sensor pixels 1920 x 1080, 2.5 mm fixed lens, Dynamic range, Automatic Electronic Shutter (AES), Video compression H.264 MP (Main Profle); M-JPEG, White balance, Backlight Compensation, Privacy Mask, Motion detection, Tamper alarm, Supports up to 32 GB microSDXC / 2 TB microSDXC card., ONVIF Profile S, 3-axis adjustment (pan/tilt/rotation), IP66, IK08.FCC, EN, UL certified. Make:- Pelco/Bosch/Axis/Sony/Mobotix/Avigilon. | 57 | Nos. |  |  |  |
| 427 | Supplying, installation, testing and commissioning of 1080p Indoor Dome camera with 1/2.9-inch CMOS, Effective pixels 1920 (H) x 1080 (V); 2MP (approx.), Sensitivity - (3100K, refectivity 89%, 1/25, F1.3, 30IRE)- Color 0.12 lx, Mono 0.02 lx With IR 0.0 lx, 85 dB Dynamic range, Electronic Day/Night, Automatic Electronic Shutter (AES), H.265, H.264 MP (Main Profile); M-JPEG Video compression, White balance, Backlight Compensation, Privacy Mask,Essential Video Analytics, 3 to 10 mm Automatic Varifocal (AVF) lens, MicroSD card slot for edge recording, Motion, tamper and audio detection, FTP, IR Range upto 30mtr, Dropbox and e-mail applications, 3 axis adjustment, ONVIF Profile S, PoE, Housing, Mounting, Lens, IR Illuminator Should be of Same Make / OEM as of Camera. CE, FCC , UL certifed. Make:- Pelco/Bosch/Axis/Sony/Mobotix/Avigilon. | 17 | Nos. |  |  |  |
| 428 | Supplying, installation, testing and commissioning of 1080p IR Box camera with 1/2.8 -inch CMOS, Active pixels 1920 (H) x 1080 (V); approximately 2 MP, Sensitivity - (3200K, reflectivity 89%, F1.4, 301RE) Color 0.052 lux,Mono 0.008 lux ,With IR 0.0 lx, 85 dB Wide Dynamic Range (WDR), H.265; H.264; M- JPEG, Multiple configurable streams in H.264 or H.265 and M-JPEG, White Balance, Day/Night, Automatic Electronic Shutter (AES);, Intelligent Dynamic Noise Reduction, Essential Video Analytics, Privacy Masking Eight independent areas, fully programmable, Memory card slot, IR Range upto 60mtr, Automatic Varifocal 2.8 to 12 mm, ONVIF Profile S; ONVIF Profile G; IP67 &1K10. Housing, Mounting, Lens, IR Illuminator Should be of Same Make / OEM as of Camera. Make:- Pelco/Bosch/Axis/Sony/Mobotix/Avigilon. | 2 | Nos. |  |  |  |
| 429 | Supplying, installation, testing and commissioning of 1080p HD IR PTZ Camera with 1/2.8" progressive scan CMOS, Effective pixels 1945 (H) x 1097 (V) (approximately 2.13M pixels), 30x Optical Zoom (4.5 mm-135 mm), 16X Digital Zoom, Minimum Illumination- Color: 0.05 Lux , B/W: 0.01 lux, IR: 0 lux; IR distance 180 in (590 ft) (Detection); 94dB WDR, H.265, H.264, MJPEG streams, Intelligent Dynamic Noise Reduction, BLC, White Balance, Pan Range 360° continuous, Tilt Range 0°±90°, Pan/Tilt Modes - Pan: 0.1°/s - 240°/s; Tilt: 0.1°/s - 120°/s, Presets 256, Tours, Audio- 1/1 Channel In/Out, Micro SD card support, 24 individually configurable privacy masks, Alarm inputs/outputs - 2/1, Dual Power options, Essential Video Analytics in-built, IP66 , ONVIF Profiles S & G, FCC, CE, UL Certified. Housing, Mounting, Lens, IR Illuminator Should be of Same Make / OEM as of Camera. Make:- Pelco/Bosch/Axis/Sony/Mobotix/Avigilon. | 1 | No. |  |  |  |
| 430 | Supplying, installation, testing and commissioning of network recorder to a maximum of 32 IP cameras with 24 TB HD,The recorders can be installed with a maximum of 4 internal HDDs for video storage. Option of a 2 HDDs for storage, plus a DVD burner for video export. Max. capacity per HDD: 6 TB. 1 no. E-SATA supported. The recorders comes with a built-in PoE+ switch as an option. 16 alarm i/p & 6 relay o/p. Simultaneous 1/4/9/16 channels playback. H.265/H.264/MJPEG supported. iPhone/Android support. Maximum incoming bandwidth of 320 Mbps. Maximum recording bandwidth of 320 Mbps. 11/0 for audio. 1 VGA & 2 HDMI output Make: Certification FCC, EN, UL certified. Make:- Pelco/Bosch/Axis/Sony/Mobotix/Avigilon. | 3 | Nos. |  |  |  |
| 431 | Supplying, installation, testing and commissioning of Layer -2 Switch with Power on Ethernet (PoE) enabled, with 24 nos. 10/100 base Tx PoE port, 1 no. dual personality Gbe Port for copper/fiber uplink, 3.7 Gbps switching capacity, 2.7 MPPS forwarding rate, maximum power consumption 185 watt. (For All Floors) Make:- Cisco/Juniper/Ericsson. | 5 | Nos. |  |  |  |
| 432 | Supplying, installation, testing and commissioning of Layer -2 Switch with Power on Ethernet (PoE) enabled, with 24 nos. 10/100/100 base Tx PoE port, 1 no. dual personality Gbe Port for copper/fiber uplink, 3.7 Gbps switching capacity, 2.7 MPPS forwarding rate, maximum power consumption 185 watt. (For All Floors) Make:- Cisco/Juniper/Ericsson. | 1 | No. |  |  |  |
| 433 | Supplying, installation, testing and commissioning of 6U rack for switch Mounting with Fan and power Strip, PDU, Hardware Mounting Kit Make: Comrack/HCL/Valrack. | 5 | Nos. |  |  |  |
| 434 | Supplying, installation, testing and commissioning of 22U Equipment Rack with provision for housing all control equipment with front & rear door, Blower for cooling arid proper locking arrangements and as per the specifications, complete in all respect upto the entire satisfaction of Engineer-in-Charge of the work. Make: Comrack/HCL/Valrack. | 1 | No. |  |  |  |
| 435 | Supplying, installation, testing and commissioning of 43" LED Monitor, Full HD, HDMI Port, Component Video Inputs, 1 Digital Audio Out, Make: Panasonic/Sony/Samsung. | 3 | Nos. |  |  |  |
| 436 | Supplying, installation, testing and commissioning of 3 Core Power Cable 1.5 sqmm. Make: Finolex/Polycab/Havells. | 300 | Meters |  |  |  |
| 437 | Supplying, installation, testing and commissioning of CAT 6 UTP Cable. Make: Panduit/R&M/Systimax. | 5900 | Meters |  |  |  |
| 438 | Supply and erection of PVC pipe 25mm dia ISI marked (Medium) recessed in wall/ceiling etc. including the cost of PVC bends , inspection boxes , iron hooks and cement concrete etc. complete in all respect upto the entire satisfaction of Engineer-in-charge of work Make: BEC/AKG Kalinga/Diplast. | 3500 | Meters |  |  |  |
| 439 | Supplying, installation, testing and commissioning of 5 KVA UPS On Line With 1 hour Backup. Make:- APC/Libert Einova/Emerson. | 1 | No. |  |  |  |
| 440 | Supplying, installation, testing and commissioning of OFC Armoured outdoor SINGLE MODE 6/12 CORE - 0S2. Should be ISO: IEC 11801 - 2nd Edition, type 0S2 and ITU-T REC G 652D. Tube Idenification: Single tube/Multiple tube. Fibre protection (Tube): Polybutylene Terephthalate (PBT). Water Blocking :Thixotropic Gel (Tube) and Petroleum Jelly (Interstices). Core Wrapping : Polyethylene Terephthalate . Armouring : Corrugated Steel Tape Armour (ECCS Tape). Strength Member: Two Steel wires on peripheryiTwo FRP rods on periphery /Central Strength Member FRP. Sheath: UV Stabilized Polyethylene (HDPE). Maximum. Tensile Strength-Short Term : 1500N or better. Mass (Nominal) : minimum 95 kg/km Make:- R&M/Siemon/Systimax. | 150 | Meters |  |  |  |
| 441 | Supplying, installation, testing and commissioning of HDPE 32 MM inner dia with ISI mark with digging of soft soil work laying scope as required complete in all respects. | 150 | Meters |  |  |  |
| 442 | Supplying, installation, testing and commissioning of SFP 1000 Base fiber module of same OEM as required complete in all respects. | 6 | Nos. |  |  |  |
| 443 | Supplying, installation, testing and commissioning of CAT6 UTP 24 AWG Patch Cord - 1 mtr with cross separator, Manufactured from stranded wires for longer fex-life , Minimum length of lm, and maximum length of 5m onforming to the following standards like EN 50173, ISO/IEC 60603-7 & 11801/IEC 60332-1, UL VW-1 Make:- R&M/Siemon/Systimax. | 65 | Nos. |  |  |  |
| 444 | Supplying, installation, testing and commissioning of 24-port 19" 1 U jack panel which Should Be made of sheet steel 1.5 mm, Should be 19" 1U straight Patch Panel, 24-port,Should have integral cable management Metal shelf,Should accept Shielded as well as Unshielded jacks, Should have rear cable management shelf metallic powder coated as required complete in all respects. Make:- R&M/Siemon/Systimax. | 6 | Nos. |  |  |  |
| 445 | Supplying, installation, testing and commissioning of Lan convertor for OFC signal connectivity with 10/100 mbps throghput rate as required complete in all respects. Make:- D-Link/Digisol/Zyxel. | 2 | Nos. |  |  |  |
| 446 | Supplying, installation, testing and commissioning of single mode fiber adaptor should be from same OEM quoted for Passive brand as required complete in all respects. Make:- R&M/Siemon/Systimax. | 48 | Nos. |  |  |  |
| 447 | Supplying, installation, testing and commissioning of MS Pole 32 mm dia 5 mtr Pole mount rack and fiber kit box with all accessories as required complete in all respects. | 1 | No. |  |  |  |
| 448 | Supplying, installation, testing and commissioning of OPTICAL FIBER EQUIPMENT CORDS (MINIMUM 3 METER) SC-LC /SC-SC . All optical fiber patch leads shall comprise of Single-mode 9/125pm fiber 0S2 Jacket should be LSZH . Connector: Zirconia ceramic ferrule. Cable: 9/125, MM 0S2 Strength member: Aramid Yarn as required complete in all respects. Make:- R&M/Siemon/Systimax. | 9 | Nos. |  |  |  |
| 449 | Supplying, installation, testing and commissioning of OPTICAL FIBER PIGTAILS, 1.5 MTR SM 0S2. Precision ferrule end face geometry SC Type SM. Factory polished, tested and serialized. Buffer Diameter 900um tight bufer.Minimum bend radius: install: 30 mm .Retention Strength: 100N. Cable: 900um Buffered. Sheath:LSZH as required complete in all respects. Make:- R&M/Siemon/Systimax. | 48 | Nos. |  |  |  |
| 450 | Supplying, installation, testing and commissioning of 12 Port fiber LIU which have sufficient slots to accommodate 24/12 Duplex LC/SC Ports ,Should have fiber management provision inside with splice tray and other accessories, Should be rack mountable 1U,Should have Splice holder for minimum 24 Fiber cores ,Should be made of Cold Rolled Steel, Material Should steel: 1.5 mm, powder-coated as required complete in all respects. Make:- R&M/Siemon/Systimax. | 6 | Nos. |  |  |  |
| 451 | SITC of Micro processor based 2 wire fault tolerant, networkable type fire alarm / detection control panel ( having nos. of loops to suit minimum 20% extra over the nos. of fire detectors. The panel shall be able to give location of all fire / fault conditions of addressable units via the address codes. Further, the panel must be able to automatically switch ON/OFF respective control module when ever any alarm is triggered. The panel shall have rectifier, loop cards, minimum 160 character L C D unit/ 5.7"TFT to indicate Fire / Fault Signal with address and analog output, extemal/inbuilt printer to log all fire or fault events complete in all respects. The Panel Shall be sheet Steel power coated, sealed to IP30. The Panel shall have 20 Zones with individual LED Indicators, expandable to 80LED Indicators. The Panel shall have 3 Serial Ports. The panel shall have a built in power supply and battery charger along with maintenance free 24 AH,2 x 12 volt SMF lead acid batteries capable of running for a minimum of 24 hours with battery charger complete as required. And conforming to BS5839 standards and Duly Approved by EN 54/ULJVDS/ as per specifications complete in all respect up to the entire satisfaction of Engineer-in-charge of work. Makes:- Bosch FPA 5000 Series/Siemens Fire Finder XLS series/Edwards EST3/Honeywell Notifier NFS3030. | 1 | No. |  |  |  |
| 452 | SITC of addressable multisensor detector with a combination of Optical and Thermal including mounting base, auto addressing feauture as required. Detetctor should have 2 inbuilt isolators as per NFPA 72 style 7 wiring requirements (one for incoming and one for outgoing line) for maintaining operational availability of all elements in the loop in the event of a short circuit and to meet style 7 requirements. High resistance to electromagnetic effects in accordance with EFSG agreement EFSG/F/97/005 .Detector should monitor Electromagnetic interference and report to the panel - current and average values. EMC safety for detector shall be 50 V/m. Shall be EN54/ VDs/UL certification. (Detectors without Inbuilt Isolators may be considered with an additional Isolator Module per detector) Makes:- Bosch FAP-425-0T/Siemens Fire Finder HFP11 + DB-11/Honeywell Notifier FSC851+B224B/Edwards SIGA PHS + SIGA IB. | 561 | Nos. |  |  |  |
| 453 | SITC of addressable Heat detector with fixed and rate of raise feature including mounting base with LED etc. complete as required. Each Detector should have 2 inbuilt Isolators as per NFPA 72 style 7 wiring requirements (one for incoming and one for outgoing line) for maintaining operational availability of all elements in the loop in the event of a short circuit and to meet style 7 requirements. High resistance to electromagnetic efects in accordance with EFSG agreement EFSG/F/97/005 .Detector should monitor Electromagnetic interference and report to the panel - current and average values. EMC safety for detector shall be 50 V/m. Shall be EN54/ VDs/UL certification. (Detectors without Inbuilt Isolators may be considered with an additional Isolator Module per detector) Makes: Bosch FAH-425-T-R/Siemens Fire Finder HFPT11 + DB-11/Honeywell Notifier FST851+ B224B/Edwards SIGA DHI + SIGA IB. | 6 | Nos. |  |  |  |
| 454 | SITC of intelligent Analog Addressable type Manual Call Point having Surface or fush mounting option fully compliat to EN 54 having Rotary Decade switches for addressing with back box for mounting as required conforming to BS5839 standards and duly approved by EN54/ULIVDS required to complete the job in all respect up to the entire satisfaction of Engineer-in-Charge of work. Makes: Bosch FMC-210DM-G-R/Siemens Fire Finder HMS/S, Notifier FSM500K/Edwards SIGA 278. | 28 | Nos. |  |  |  |
| 455 | SITC of Addressable Loop powered sounder with strobe/flasher complete with mounting base as required conforming to BS5839 standards and duly approved by EN54/UL/VDS required to complete the job in all respect up to the entire satisfaction of Engineer-in -Charge of work. Makes:- Bosch/Siemens Fire Finder/Notifier/Edwards. | 28 | Nos. |  |  |  |
| 456 | SITC of Aspirating smoke detector, Highly sensitive smoke aspiration system for monitoring of server rooms and equipment for earliest possible fire detection with max of 5 aspiration openings and a max pipe length of 50 meters. | 1 | Nos. |  |  |  |
|  | Three status displays on housing front panel for "operation", "alarm" and "malfunction" |  |  |  |  |  |
|  | Adjustable sensitivity of up to 0.05%/m light obscuration. |  |  |  |  |  |
|  | Different sensitive detection modules possible. |  |  |  |  |  |
|  | Settable in day and night operation |  |  |  |  |  |
|  | Innovative air flow sensor technology-false alarm suppression. |  |  |  |  |  |
|  | Monitoring of pipe for breakage and obstruction. |  |  |  |  |  |
|  | Air stream monitoring with air pressure-dependent equalization. |  |  |  |  |  |
|  | To be integrated in Detector Loop |  |  |  |  |  |
|  | Providing Pin Point Loaction of Each Hole. |  |  |  |  |  |
|  | Makes: Bosch/Seimens Fire Finder/Notifier/Edwards. |  |  |  |  |  |
| 457 | SITC of Glow Type EXIT Sign Board photo luminescent of size 300mm x 250mm x 1.5 mm rigid sheet signage containing Zink Sulphate as bare chemical class-1 material PSPA fixed on 3mm acrylic sheet on both side showing marking (running man, Arrow and Exit) and hanged with the ceiling with chain and fastener including cost of labour & material required to complete the job in all respect up to the entire satisfaction of Engineer-in-Charge of work. Make:- PES/Giolite/Omex. | 28 | Nos. |  |  |  |
| 458 | SITC of Addressable Control Relay Module with flexible network structures with a maximun switching current of 1A @ 30V DC. Shall be EN54/ULJVDS Certification. Makes:-Bosch/Seimens Fire Finder/Notifier/Edwards. | 8 | Nos. |  |  |  |
| 459 | SITC of Addressable Monitor Module for monitoring of a line with EOL resistor/Potential free contact/voltage monitoring shall be EN54/ULJVDS approved. (In case of 2 monitoring features in one module (points) each point shall be consider separately for payment). Makes:Bosch FLM-420-I2-E/Siemens Fire Finder HTRI-S/Notifier FRM-1/Edwards EST 3. | 8 | Nos. |  |  |  |
| 460 | SITC of Analog Addressable type Active Repeater fire alarm panel with Backlit LCD Display, having controls for reset, mute, Accept, Silence alarms and self test conforming to BS5839 standards and duly approved by EN54/UN54/VDS with all labour and material required to complete the job in all respect up to the entire satisfaction of Engineer-in-Charge of work. Makes: BOSCH FMR 5000-13/Siemens Fire Finder SSDC/Notifier LCD-160/Edwards 3-LCD ANN. | 2 | Nos. |  |  |  |
| 461 | SITC of controller EN-54/UL Certified EVAC controller, with 14x 4 Audio matrix with full DSP functionality. 8 audio inputs, 4 audio outputs, 4 channel output matrix. Shall support single line switching or redundant group A/B switching, amplifier redundany, 4 x 100V audio inputs and 12 speaker line outputs. 8000 fault, warning and event conditions log. Built in message manager for 100 emergency/business calls up to 85 minutes. 10 control inputs and 13 control outputs. Should be able to send 2 different pre-recorded messages simultaneously. Impedance measurement and Pilot Tone supervision for speaker line monitoring. Shall be able to handle up to 2000 Watt load, 20 routers, 6 call stations, 492 speaker zones. Frequency response (ref. 1kHz) 20 Hz to 20 kHz (-0.5 dB), Signal-to-noise ratio (A-weighted). Line in to line out: 106 dB typical, THD+N < 0.05%, Crosstalk (line level) Line in to line out (0 dB gain): < 100 dB at 1 kHz. Sample rate 48 kHz. DSP processing resolution 24-bit linear A/D and D/A conversion, 48-bit processing complete in all respect.Make:- Bosch/Panasonic/Ateis. | 1 | Nos. |  |  |  |
| 462 | SITC of EN-54/UL certified 2x 500W Class D, high efficiency amplifier. 70/100V loudspeaker output voltages, galvanically separated, 4 automatic selectable audio inputs on RJ45, local input. THD 1%. Frequency response, ref. 1 kHz, rated load, -3 dB 50 Hz to 25 kHz. Signal-to-noise ratio (A-weighted) >104 dB, Output noise (A-weighted) < -62 dBu, Crosstalk , ref. 1 kHz < -85 dB. Audio input level limiter, RMS output power limiter, high temperature, DC, short circuit, mains undervoltage protection, DC supply undervoltage protection, inrush current limiter, ground fault. Make:- Bosch/Panasonic/Ateis. | 2 | Nos. |  |  |  |
| 463 | SITC of Call station EN-54/UL certified Call Station with built in numerical keypad, Multi language LCD display , gooseneck microphone with supervised electret microphone, pop shield and permanent monitoring, integrated loudspeaker for system sounds. Five menu/function keys, 15 customizable function and speed dial buttons. Possible to use keys for o Zone select, source select, level control, emergency on/of, message on/of, failure acknowledge/reset, Switching output trigger on/of or 0 to 10V, select scheduled events, scheduled event on/of. Call Station is supervised by system controller can be expanded by connecting 5 additional extention keypads complete in all respect. Make:- Bosch/Panasonic/Ateis. | 1 | Nos. |  |  |  |
| 464 | SITC of 15W Wall mount speaker for high-fidelity music and speech reproduction. Water and dust protected IP 65. Sound pressure level at 15W/1W: 99/87 dB (SPL) . Effective Frequency Range 95 Hz to 20 kHz Rated power-15W ,Rated input voltage/ l/70/100 V,Selectable 8 ohm, 70 V and 100 V inputs, Rated impedance 8/163/333 ohm Safety EN/ UL Make:- Bosch/Panasonic/Ateis. | 69 | Nos. |  |  |  |
| 465 | Supply & erection of PVC unsheathed s/c stranded ( ISI marked ) copper contuvtor cable 1100v grade in existing pipe excluding cost and erection of pipe but including connection etc. with all labour and material required to complete the job in all respect up to the entire satisfaction of the Engineer-in-charge of work. Make:- Finolex/Polycab/Havell. |  |  |  |  |  |
| i | PVC unsheathed copper size 1.5 sq mm single core | 9800 | Meters |  |  |  |
| ii | 2 core PVC unsheathed copper size 1.5 sq mm | 6500 | Meters |  |  |  |
| iii | SITC of PVC Conduit Pipe, 25mm medium, ISI Mark with complete accessories. Make: Diplast/Polyplast | 7500 | Meters |  |  |  |
| iv | SITC of 22 U Standard rack to place all Av equipment. Make Valrack, Comrack | 1 | No. |  |  |  |
| v | SITC of battery backup for controllers ( 5 KVA UPS on line with 1 hours backup) Make:- Apc/Liebert/Emerson | 1 | No. |  |  |  |
|  | SPRINKLER, PIPING & ACCESSORIES |  |  |  |  |  |
| 466 | Providing, fixing, testing and commissioning of MS air cushion tank on top of each riser fabricated form 6mm thick MS plate, 250mm in diameter and 1.2 m in height with dished ends fabricated from 8mm thick MS plate with Air release valve with stopi cock. flanged inlet connection and drain arrangement with 25mm dia valve, pressure gauge with gun metal stop cock complete with all accessories as required. | 2 | Nos. |  |  |  |
| 467 | Providing, fixing, testing and commissioning of MS air cushion tank on top of each riser fabricated form 6mm thick MS plate, 450mm in diameter and 2 m in height with dished ends fabricated from 8mm thick MS plate with Air release valve with stopi cock. flanged inlet connection and drain arrangement with 25mm dia valve, pressure gauge with gun metal stop cock complete with all accessories as required. | 1 | No. |  |  |  |
| 468 | Providing, laying, jointing, testing and commissioning of following sizes of MS 'C' Class (Heavy duty) pipes conforming to IS-1239 with all fittings (standard MS fitting with welded joint shall be used on the pipes) including tees, elbows, reducers, union, flanges, rubber gaskets, GI nuts bolts, washer including supporting/fixing the pipe on floor / wall /ceiling with clamps, hangers (using anchor fastners) as per specification. including cutting holes and chases in brick, RCC work and making good the same to original conditions complete in all respects. All hangers, clamps, brackets etc. shall be of iron unless specified otherwire and then supply of the same shall also be included for rates under this head. |  |  |  |  |  |
|  | Welding of any kind on the galvanized support / hanger shall not be permitted including synthetic enamel paint of approved shade over a coat of zinc primer. |  |  |  |  |  |
|  | For Sprinkler system - MS `C' Heavy class pipe Make Jindal (Hissar), TATA |  |  |  |  |  |
| i | 25 mm dia | 346 | Rmt. |  |  |  |
| ii | 50 mm dia | 56 | Rmt. |  |  |  |
| iii | 80 mm dia | 60 | Rmt. |  |  |  |
| iv | 100 mm dia | 56 | Rmt. |  |  |  |
| 469 | Providing two coats of synthetic enamel paint of approved shade over a coat of primer. Prior to application of primer the surface should be cleaned for any dirt, rusts, rough substance etc. Including painting of legends both direction arrow as per the approval of the Project Manager. |  |  |  |  |  |
| i | 25 mm dia | 346 | Rmt. |  |  |  |
| ii | 50 mm dia | 56 | Rmt. |  |  |  |
| iii | 80 mm dia | 60 | Rmt. |  |  |  |
| iv | 100 mm dia | 56 | Rmt. |  |  |  |
| 470 | Providing, fixing, testing and commissioning of 15 mm dia quartzoid bulb type sprinkler head suitable to operate at 68oC suitable for sustaining the pressure on the seat & water hammer effect. (UL/FM listed/approved) Make minimax Standard Pendant as required complete in all respects. | 136 | Nos. |  |  |  |
| 471 | Providing & fixing Daul Plate Check valve (Body : Grey Cast Iron, Shaft with a working pressure not less than 16 Kg/Sq.cm. Including rubber gasket, flanges, nuts, bolts, washers & painting complete as required. Make:- Zoloto,Sant. |  |  |  |  |  |
|  | 80 mm dia | 10 | Nos. |  |  |  |
| 473 | Providing and fixing of UL/FM listed/approved electrically operated flow indicating switch of following diameter with threaded connection for a minimum flow of 90 lpm in Sprinkler branch line on each floor with flexible full bore paddle & NO/NC contact terminals as specified complete with all accessories and necessary wiring. Make Indfoss,System sensor |  |  |  |  |  |
|  | 100 mm dia | 1 | No. |  |  |  |
| 473 | Providing & Fixing of burden type Stainless Steel dial type pressure gauge with brass isolation valve and pipe. Make:- H Guru,Bell/Fiebig. |  |  |  |  |  |
|  | Dial Diameter : 100 mm |  |  |  |  |  |
|  | Caliberation : 0-20 Kg/cm2 | 6 | Nos. |  |  |  |
|  | FIRE HYDRANT SYSTEM |  |  |  |  |  |
| 474 | Providing, laying, jointing, testing and commissioning of following sizes of MS 'C' Class (Heavy duty) pipes all fittings (standard MS fitting with welded joint shall be used on the pipes) including tees, elbows, reducers, union, flanges, rubber gaskets, GI nuts bolts, washer including supporting/fixing the pipe on floor / wall /ceiling with clamps, hangers (using anchor fastners) as per specification,including cutting holes and chases in brick, RCC work and making good the same to original conditions complete in all respects. All hangers, clamps, brackets etc. shall be of iron unless specified otherwire and then supply of the same shall also be included for rates under this head. Make TaTa/Jindal Hissar |  |  |  |  |  |
|  | MS `C' Heavy class pipe |  |  |  |  |  |
| i | 25 mm dia | 20 | Rmt. |  |  |  |
| ii | 80 mm dia | 36 | Rmt. |  |  |  |
| iii | 100 mm dia | 66 | Rmt. |  |  |  |
| iv | 150 mm dia | 296 | Rmt. |  |  |  |
| v | 200mm dia | 12 | Rmt. |  |  |  |
| 475 | Providing two coats of synthetic enamel paint of approved shade over a coat of primer. Prior to application of primer the surface should be cleaned for any dirt, rusts, rough substance etc. Including painting of legends both direction arrow as per the approval of the Project Manager. |  |  |  |  |  |
| i | 25 mm dia | 20 | Rmt. |  |  |  |
| ii | 80 mm dia | 36 | Rmt. |  |  |  |
| iii | 100 mmdia | 66 | Rmt. |  |  |  |
| iv | 150 mm dia | 16 | Rmt. |  |  |  |
| v | 200mm dia | 12 | Rmt. |  |  |  |
| 476 | Providing & fixing Gun metal fire hydrant single headed landing valve with 80 mm N.B. flanged inlet, s.s spindle controlled 63 mm dia female instantaneous outlet type. SS coupling, blank cap, chain, twist release type lug & all accessories Conforming to IS standards. Make Minimax ,CeaseFire | 26 | Nos. |  |  |  |
| 477 | Providing & Fixing of 63 mm dia 15 m long non-percolating flexible hose (RRL- type A) as per IS : 636. Type A with Gun Metal male & female instantaneous type coupling (IS 903) (For internal and External hydrant system).Make Minimax,CeaseFire | 52 | Nos. |  |  |  |
| 478 | Providing and Fixing Gun Metal 63 mm dia instantaneous pattern branch short pipe, 20 mm dia nozzle conforming to IS 903, suitable for inter connection to hose pipe coupling complete as required. Make Minimax,CeaseFire | 26 | Nos. |  |  |  |
| 479 | Providing & Fixing of standard Fireman's Axe with heavy insulated handle. Make:- Minimax, CeaseFire. | 12 | Nos. |  |  |  |
| 480 | Providing & fixing ball valve 25mm dia. Make:- Sant, Zoloto. | 12 | Nos. |  |  |  |
| 481 | Providing & Fixing of wall mounting swinging type first aid fire hose reel with drum, hanging bracket, 36.5 Mtr. length x 20 mm dia high pressure hose reel tubing as per IS: 444 with gun metal (GM) shut off nozzle having 5 mm dia orifice. The hose reel shall be conforming to IS : 884-1985. Rate shall include 25 mm dia M.S. pipe connection from Riser to hose reel, sockets, nipples, elbows and ball valve (25 mm dia). Drum shall be fixed on adjoining wall through anchor fasteners / cement concrete block as and when required. (For internal hydrant system). Make Minimax,CeaseFire | 12 | Nos. |  |  |  |
| 482 | Weather proof standard fire hose cabinet (750 mm x 600 mm x 300 mm deep) made of 18 SWG powder coated fibre. sheet having single or double opening glazed (4.0 mm thick glass) shutter including necessary locking arrangement by allan key, stove enamelled Fire red finish (as per IS : 5, shade no. 536) with " Fire Hose" marked on front, suitable for housing 2 nos. 15m long 63 mm dia Hose pipe, 1 No. branch pipe & nozzle spanner. Make Minimax,Newage | 26 | Nos. |  |  |  |
| 483 | Providing Cast iron /steel Butterfly Valve Confirming to type P.N 1.6 of I.S 13095-1991 Complete with Flanges bolt, nuts, gasket etc. As per table 'E' specification complete in all respect hydraulically test to 20 K./sqcm. |  |  |  |  |  |
| i | 80 mm dia | 15 | Nos. |  |  |  |
| ii | 100 mm dia | 5 | Nos. |  |  |  |
| iii | 150 mm dia | 8 | Nos. |  |  |  |
| 484 | Providing and fixing Cast Iron/steel double flanged horizontal type with gunmetal seat non-return valve confirming to class - I of IS : 5312 including nuts, bolts, 1.5 mm thick compressed asbestos gasket as per table "E" and specifications complete in all respect. |  |  |  |  |  |
| i | 80 mm dia | 1 | No. |  |  |  |
| ii | 100 mm dia | 6 | Nos. |  |  |  |
| iii | 150 mm dia | 4 | Nos. |  |  |  |
|  | PORTABLE FIRE EXTINGUISHERS |  |  |  |  |  |
| 485 | Providing & fixing of IS marked (IS:15683) portable fire extinguisher, carbondioxide type flat base including valve, discharge hose of not less than 10 mm dia. 1 M long & complete in all respects including initial fill with CO2 gas confirming to IS:15222 filled to a filling ratio of not more than 0.667 and wall suspension bracket Make Minimax,CeaseFire |  |  |  |  |  |
|  | Capacity 4.5 kg | 36 | Nos. |  |  |  |
| 486 | 6 Kg. ABC MAP-50% Powder type fire extinguishers are manufactured and marked to Indian standard IS: 15683. Hose shall made of EPDM Rubber, CE Marked Valve, Suitable first aid appliance for fighting fires in Class A, B & C fire that is wood, textile, flammable liquids & gases. Make:- Minimax, CeaseFire. | 36 | Nos. |  |  |  |
| 487 | Providing & fixing of IS marked (IS: 13386-1992) Carbon Dioxde 22.5 kg consisting of welded M.S. trolley mounted cylindrical body, squeeze lever discharge valve fitted with pressure discharge hose, discharge nozzle, trolley etc. finished externally with red enamel paint and fixed to wall with brackets complete with internal charges Make Minimax,CeaseFire | 1 | No. |  |  |  |
|  | EXTERNAL FIRE HYDRANT SYSTEM |  |  |  |  |  |
| 488 | Providing & fixing Gun Metal four way fire brigade inlet connection to external hydrant ring/hydrant riser with 4 Nos. 63 mm dia instantaneous type inlet and 150 mm dia flanges outlet conforming to IS:904 with blank cap and chain.Make Minimax, Newage | 2 | Nos. |  |  |  |
| 489 | 150 mm dia gun metal fire brigade suction hose coupling of (gunmetal draw off connection) with 150 mm dia M.S. 'C’ Class suction pipe with 150 mm dia C.I. foot valve.Cost shall include a wall mounted box of M.S. construction (16 SWG) of adequate size with glass door (4.0 mm thick) to house the above mentioned component to be connected to static water tank.Make:- Minimax,Newage. | 1 | No. |  |  |  |
|  | PUMP HOUSE FIRE PUMPS & EQUIPMENTS, VALVES ETC. |  |  |  |  |  |
| 490 | Supply, installation, testing and commissioning of electrically driven high pressure centrifugal fire hydrant / sprinkler pump, suitable for automatic operation consisting of the following: |  |  |  |  |  |
|  | Multistage Multi-outlet, centrifugal pump, suitable for operation on 415 volts ± 10 %, 3 phase, 50 HZ A.C supply. The installation shall be complete with flexible coupling and coupling guard as required. Fire pump shall have C.I. casing, CS diffusers, bronze impeller (hard finished and dynamically balanced) and S.S. (410) Shaft with mechanical seal, capable for delivering the required flow at the required head to ensure a minimum pressure of 3.5 Kg/Sqcm at the farthest or topmost hydrant / sprinkler. The installation shall be complete with necessary pressure gauge with gun metal shut off cock on delivery side. (The pump should be tested for bench mark at factory and shall be gotten approved by the Local fire Authority). |  |  |  |  |  |
|  | Squirrel cage induction motor, TEFC type suitable for operation on 415 volts, 3 phase 50 HZ A.C supply, for the above pump with synchronous speed of 2900 RPM, conforming to IP 55 protection & class F insulation. The motor shall conform to IS 325-1978 (up to date) with flexible coupling and coupling guard, complete as required. |  |  |  |  |  |
|  | Common base plate for (a) and (b) from G.I.. Channel for required size. |  |  |  |  |  |
|  | Suitable cement concrete foundation with cement concrete plaster (design and drawing to be provided by the Contractor while the foundation will be done by others) complete with anti-vibration arrangement of cushy foot mountings. |  |  |  |  |  |
|  | Flow : 2280 LPM |  |  |  |  |  |
|  | Head: 70mtr. Make Kirloskar,Siemens |  |  |  |  |  |
|  | For Hydrants system | 1 | Set |  |  |  |
| 491 | Supply, installation, testing and commissioning of Diesel Engine driven fire pump suitable for automatic operation comprising of the following and conforming to BS 649/IS 10002 all amended upto date. |  |  |  |  |  |
|  | Multistage Multi-outlet, centrifugal pump, suitable for operation on 415 volts ± 10 %, 3 phase, 50 HZ A.C supply. The installation shall be complete with flexible coupling and coupling guard as required. Fire pump shall have C.I. casing, CS diffusers, bronze impeller (hard finished and dynamically balanced) and S.S. (410) Shaft with mechanical seal, capable for delivering the required flow at the required head to ensure a minimum pressure of 3.5 Kg/Sqcm at the farthest or topmost hydrant / sprinkler. The installation shall be complete with necessary pressure gauge with gun metal shut off cock on delivery side. (The pump should be tested for bench mark at factory and shall be gotten approved by the Local fire Authority). |  |  |  |  |  |
|  | HE cooled (secondary cooling) diesel engine of speed 1800 RPM suitable for the above pump with automatic starting mechanism and other accessories including 1000Ltr. fuel tank (fabricated from 3mm MS sheet, painted with two coats of synthetic enamel paint over a coat of primer) of capacity adequate to sustain pump operation for 8 hours continuous working. The tank shall be fitted with Magnetic oil level indicator, MH with cover, drain valve, air vent including structural supports (painted with approved shade), 2 Nos. x 12 volt battery, heat exchanger with necessary piping connections & fittings, flexible coupling, coupling guard & exhaust pipe connection complete as required. |  |  |  |  |  |
|  | Common base plate for (a) and (b) from G.I.. channel of required size. |  |  |  |  |  |
|  | Suitable cement concrete foundation with plaster, (design and drawing to be provided by the Contractor while the foundation will be done by others) complete with antivibration arrangement of cushy foot mountings.The rate includes inter connecting cables & foundation bolts |  |  |  |  |  |
|  | Flow : 2280 LPM |  |  |  |  |  |
|  | Head :70mtr. Kirloskar, Siemens |  |  |  |  |  |
|  | Supply, installation, testing and commissioning of Diesel Engine driven fire pump as above details. | 1 | Set |  |  |  |
| 492 | Supply, installation, testing and commissioning of jockey pump (pressurisation pump) comprising of the following: |  |  |  |  |  |
|  | Horizontal pump, suitable for operation on 415 volts ± 6%, 3 phase, 50 HZ A.C supply. The installation shall be complete with Flexible coupling and coupling guard, complete as required. |  |  |  |  |  |
|  | The pump casing shall be CI, shaft shall be SS & impeller/ shaft sleeve/casing wearing ring shall be bronze. The pump shall be provided with mechanical seal The system shall be complete with necessary pressure gauge with gun metal shut off cock on delivery side. (The pump should meet the condition and shall be gotten approved by the Local fire Authority). |  |  |  |  |  |
|  | Squirrel cage induction motor TEFC type for operation on 415 V, 3 phase 50 Hz AC supply for the above pump with a synchronous speed of 2900 RPM with flexible coupling and coupling guard etc. as required. |  |  |  |  |  |
|  | Common base plate for (a) and (b) from G.I.. channel as required size. |  |  |  |  |  |
|  | Suitable cement concrete foundation with plaster, (design and drawing to be provided by the Contractor while the foundation will be done by others) complete with Antivibration arrangement of cushy foot mounting. |  |  |  |  |  |
|  | For pump defined above & of duty as follows : |  |  |  |  |  |
|  | Flow : 180 LPM |  |  |  |  |  |
|  | Head : 70 mts. Make Kirloskar,Siemens | 1 | Set |  |  |  |
| 493 | Supply, installation, testing and commissioning of Pressure switch for fire pumps of approved make,including necessary wiring and cut off valve up to central panel & other material as described in specifications. Make:- Indfoss, System Sensor. | 3 | Nos. |  |  |  |
|  | ELECTRICAL INSTALLATION FOR FIRE FIGHTING SYSTEM |  |  |  |  |  |
| 494 | Design, manufacture, assembly, wiring, testing at works and supply to site of following panels/distribution boards/switch boards. The boards shall be designed and fabricated as per general specifications, technical details, specifications and notes as part of this tender /BOQ and relevant BIS codes. |  |  |  |  |  |
|  | FIRE PUMP PANEL |  |  |  |  |  |
|  | IP Rating: IP 54 |  |  |  |  |  |
|  | Incomer : |  |  |  |  |  |
|  | 1 No.400 A, 35 KA, 3P ACB of motor duty - only Magnetic release. (Adjustable Magnetic release upto 250A MCCB OR Micro-Processor based release above 250A MCCB). ACB shall have 1NO + 1NC auxiliary contacts + a trip contact. |  |  |  |  |  |
|  | Incomer Metering & Indication: |  |  |  |  |  |
|  | 415V / √3 / 110V/ √3 PT's, Cast Resin type, 3 Phase for metering & indications, suitable rated 6A, TP MPCB of the fault withstand capacity as of the panel on the primary side of PT & suitable rated 6A, TP MCB on the secondary side of PT. |  |  |  |  |  |
|  | R,Y,B phase indication lamps (110V) LED Type |  |  |  |  |  |
|  | ON' & Trip indication lamps (110V) LED Type |  |  |  |  |  |
|  | Cast resin metering CT's for each phase of class-1 accuracy & of suitable burden & ratio |  |  |  |  |  |
|  | 1 No. Digital VAF + PF Meter (110V) (With RS 485 Port) |  |  |  |  |  |
|  | Bus bars: |  |  |  |  |  |
|  | 1000 A, TP, Aluminium Bus Bars of Electrolytic grade with heat shrinkable sleeves 35 KA. |  |  |  |  |  |
|  | Control Transformer & Control Circuiting for Starters / Contactors & Indication Lamps : |  |  |  |  |  |
|  | 2 Nos. 415V / 55-0-55V Cast resin Dry type control transformers of adequate 'VA' burden to take care of load of all the contactor coils with a auto changeover circuiting & mechanism for full proof auto & manual change over from one control transformer to second control transformer incase of one going faulty. (Transformer with primary taps at ± 2.5%, ± 5%, 50 Hz, centre tap earthed). |  |  |  |  |  |
|  | Suitable rated 6A, DP, MPCB of the fault withstand capacity as of the panel for control circuiting for contactors coils on the primary side of control transformer & suitable rated 6A, DP MCB on the secondary side of control transformer. |  |  |  |  |  |
|  | 110V Control circuiting |  |  |  |  |  |
|  | Power Contactors for auto changeover of control transformers |  |  |  |  |  |
|  | 110V Control supply healthy indication (LED Type) |  |  |  |  |  |
|  | Outgoings: |  |  |  |  |  |
|  | 1 Nos. DOL Starter comprising the following (for Jockey Pump): |  |  |  |  |  |
|  | For 10 HP. (1 Nos.) (Jockey Pump) |  |  |  |  |  |
|  | 1 Nos. DOL Starter comprising the following (for Terrace Pump): |  |  |  |  |  |
|  | For 10 HP. (1 Nos.) (Jockey Pump) |  |  |  |  |  |
|  | Type-2 Co-ordination |  |  |  |  |  |
|  | 1 No. suitable rated TP MPCB, 35 KA, without inbuilt O/L relay (only magnetic) |  |  |  |  |  |
|  | Suitable O/L relay with inbuilt SPP |  |  |  |  |  |
|  | Suitable sized 3P contactor with 2 NO & 2 NC Auxiliary contacts |  |  |  |  |  |
|  | ON/OFF / Trip indication lamps (110V) (LED Type) |  |  |  |  |  |
|  | ON/OFF Push buttons |  |  |  |  |  |
|  | 2 Pole A/M Selector switch for BMS application |  |  |  |  |  |
|  | Suitable rated cast resin CT's for metering on each phase, of Class-1 accuracy and of suitable burden & ratio |  |  |  |  |  |
|  | Digital ammeter with inbuilt selector switch |  |  |  |  |  |
|  | ON/OFF-Trip / A/M potential free contacts for BMS |  |  |  |  |  |
|  | Control wiring for linking with pressure switch for auto operation. |  |  |  |  |  |
|  | 1 Nos. Star-Delta Starter comprising the following |  |  |  |  |  |
|  | For 60 HP. (1 Nos.) (Hydrant Pump) |  |  |  |  |  |
|  | Type-2 Co-ordination |  |  |  |  |  |
|  | 1 No. suitable rated TP MCCB, 35 KA, (Motor duty only magnetic / microprocessor based motor duty if above 250A). |  |  |  |  |  |
|  | Suitable sized 3P Contactors (Star, Delta & Run contactors) with 2 NO & 2 NC Auxiliary contacts |  |  |  |  |  |
|  | Star-Delta Timer |  |  |  |  |  |
|  | Suitable Electronic O/L motor protection relay with inbuilt SPP |  |  |  |  |  |
|  | ON/OFF / Trip indication lamps (110V) (LED Type) |  |  |  |  |  |
|  | ON/OFF Push buttons |  |  |  |  |  |
|  | 2 Pole A/M Selector switch for BMS application |  |  |  |  |  |
|  | Suitable rated cast resin CT's for metering on each phase, of Class-1 accuracy and of suitable burden & ratio |  |  |  |  |  |
|  | Digital ammeter with inbuilt selector switch |  |  |  |  |  |
|  | ON/OFF-Trip / A/M potential free contacts for BMS |  |  |  |  |  |
|  | Control wiring for linking with pressure switch for auto operation. |  |  |  |  |  |
|  | 1 No. Diesel Fire Engine Control Panel (As part of the Fire Pump Panel) |  |  |  |  |  |
|  | Battery charger system for Diesel Engine driven fire pump comprising: |  |  |  |  |  |
|  | 110V / 24V or 12V suitable rated DC Battery charger as per engine (25 Amp Battery Charger & switch for trickle / boost, auto / manual & auto test. |  |  |  |  |  |
|  | AMF DC Unit, Main switch ON/OFF |  |  |  |  |  |
|  | Control circuiting with suitable TP MPCB / SP MCB of required fault withstand capacity as of fire panel. |  |  |  |  |  |
|  | Engine Start Relay, Auxiliary contacts |  |  |  |  |  |
|  | Engine start push button |  |  |  |  |  |
|  | Engine stop push button |  |  |  |  |  |
|  | Reset & Acknowledge alarm, all lamps test |  |  |  |  |  |
|  | Main supply ON |  |  |  |  |  |
|  | Battery charger ON |  |  |  |  |  |
|  | High voltage trip |  |  |  |  |  |
|  | Spare |  |  |  |  |  |
|  | Diesel Pump Starting Logic: |  |  |  |  |  |
|  | Mode Selection: |  |  |  |  |  |
|  | Auto/Manual mode will be selected by selector switch provided on the panel. |  |  |  |  |  |
|  | Manual Mode : |  |  |  |  |  |
|  | Selector switch shall be kept in manual mode |  |  |  |  |  |
|  | Engine Start through Start Push Button |  |  |  |  |  |
|  | Engine Stop through Stop Push Button |  |  |  |  |  |
|  | Auto Mode : |  |  |  |  |  |
|  | Selector switch shall be kept in auto mode |  |  |  |  |  |
|  | Automatic start of engine at low pressure |  |  |  |  |  |
|  | Three attempt starting by engine start relay, if not started after three attempts, relay will generate 'Fail to Start' signal. |  |  |  |  |  |
|  | Engine shall be stopped manually as in case of auto mode |  |  |  |  |  |
|  | Diesel Fire Engine Control Panel shall be complete with all inter connections, internal wiring & terminal blocks etc. Control wiring for linking with pressure switch for auto operation. |  |  |  |  |  |
|  | Fire pump panel to be complete with all control wiring / terminals for linkage with flow switches / pressure sensor for auto operation of pumps and as per the requirement of Local Govt. Fire Officer. |  |  |  |  |  |
|  | Fire Pump Panel as described above. | 1 | Set |  |  |  |
| **Total Bid Price** | | | | | |  |