

**TENDER FOR PROPOSED INTERIOR  
WORK OF RESTRUCTURING OF CBO1  
AT ORIENTAL HOUSE,  
2<sup>ND</sup> FLOOR ( EAST WING), 7,J.TATA ROAD,  
CHURCHGATE, MUMBAI-400020.  
FOR THE ORIENTAL INSURANCE CO.LTD. CBO1**

**: PART - II :  
: FINANCIAL BID :  
Envelope No. II : FINANCIAL BID**

Date of Pre Bid Meeting : 26.10. 2023 at 3.30 p.m.

Date of Tender Submission : 02.11. 2023 before 3.00 p.m.

ARCHITECT : **RASHMIN BHANDARE**  
Dadar,Mumbai-400 028.,

Tel : 9892067458  
Email: rashminbhandare@gmail.com

Total No. of pages : Include Technical Specifications ,BOQ ,Salvage Items :Total 37 No pages  
**PLUS** Reference Drawing 1 Nos i.e. **Total 38 No. pages**

: 1:

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**: IMPORTANT :**

The Contractor should satisfy himself that no paper or document from this Sealed Document is missing while submitting this tender consisting of 1 to 37 Plus 1 No Reference Drawings i.e. 38 Nos pages

Tender issued to

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Issued by :

The Dy. General Manager,  
The Oriental Insurance Co.Ltd.  
Corporate Business Office No.1  
Estate & Estb. Dept.  
7,J.Tata Road,Churchgate,  
Mumbai 400 023.

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**: RECOMMENDED BRANDS :**

**NOTE :**

The Contractor shall quote for the best of the materials as specified below with ISI mark wherever applicable. The Contractor shall obtain prior approval from the Employer / Consultant before placing order from the Specific materials agencies. In case of non-availability of any of the approved / specified materials / agency during / the execution of works. The owner / consultant may approve suitable equivalent brand / agency and his decision shall be final and binding on the contractor and the price variation if any shall be adjusted accordingly.

- |     |  |                                      |
|-----|--|--------------------------------------|
| 1.  | Cement (43 Grade)                                    | :ACC, L & T, Narmada / Roffe/ Ambuja |
| 2.  | Sand   | : River sand                         |
| 3.  | Epoxy resin + hardner                                | :Hindustan ciba geigy / Dr Beck      |
| 4.  | Integral Waterproofing Compound                      | :Impermo, Roffee, Pidiproff          |
| 5.  | Super Plasticiser                                    | :Supercon 100 / Conplast 211         |
| 6.  | P.V.C. Pipes & Fittings                              | :Supreme, Prince                     |
| 7.  | C.I. Pipe & Fittings                                 | :Neco                                |
| 8.  | G.I. Pipes   | :Tata / Zenith                       |
| 9.  | G.I. Fittings  | :Kirti Brand / Unik                  |
| 10. | Taps & Valves<br>Chromium plated fittings & Fixtures | : ISI Jaguar                         |
| 11. | Polysulphide sealant                                 | :Choksi Chemicals                    |
| 12. | Wall tiles   | :Kajaria / Johnson / Bell / Varmora  |
| 13. | White Cement   | :J.K. / Birla                        |
| 14. | Non slippery Vitrified Floor tiles                   | : Asian / Nitco / Johnson            |
| 15. | Toilets Fittings                                     | : Nycer / Paryware / Hindware        |
| 16. | Exterior Emulsion Paint                              | : Asian / Nerolac / 9-Flex           |

: 3 :

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|-----|---|---|--|
| 17. | Synthetic Enamel<br>Plastic emulsion/ Oil Bond<br>distemper | : | Nerolac, Berger, Asian, ICI                        |
| 18. | Exterior Paint  | : | Excel / Apex / 9 Flex                              |
| 19. | Waterproof Coating  | : | POLYALK WP of Sunanda Chemicals.                   |
| 20. | Cables ISI  | : | Polycab / Asian / CCI                              |
| 21. | MCB & DB  | : | M.D.S. / HAGER / Seimens                           |
| 22. | PVC insulated wires ISI                                     | : | V Plast / Sundeeep / Polycab /<br>Pyroflex / Vinay |
| 23. | Wooden Screws   | : | Nettlefolds  |
| 24. | S.F.U.S. with fuses (H.R.C.)                                | : | Crompton / L & T                                   |
| 25. | E.L.M.C.B. (RCCB)   | : | M.D.S. / HAGER / Seimens                           |
| 26. | Telephone wiring  | : | Delton / Finolex / Vinay                           |
| 27. | Conduits  | : | Precision (ISI) / Circle arks                      |
| 28. | Cable Luggs   | : | Dowells  |
| 29. | Cable gland   | : | Braco / Comet / H.M.I.                             |
| 30. | Spot light  | : | Geminy Global / Liberty                            |
| 31. | Fan Regulator   | : | Anchor   |
| 32. | Switch board  | : | Sunwood  |
| 33. | Switch & Sockets  | : | Anchor/ Vinay ( Corum)                             |
| 34. | Casing capping  | : | Precision  |
| 35. | Ind. Switch socket  | : | MDS / Crompton                                     |
| 36. | Fixtures, Fittings etc.                                     | : | Philips / Crompton / Wipro                         |

: 4 :

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<b>SR. NO.</b>	<b>MATERIAL</b>	<b>APPROVED MANUFACTURERS / SUPPLIERS</b>
01.	Glass	Modi guard float glass
02.	Aluminium false-ceiling	Supersil
03.	Glass wool	Fiber glass pilkington
04.	Fire Retardant Paint	Fire Tard
05.	Wood Preservative	Bison by British Paints, Termiseal by PCI
06.	Locks	Godrej, Vision, Laxmi, Vijayan.
07.	Door closer / Floor springs	Garnish, Everite, Harden.
<b>08.</b>	<b>Chairs</b>	<b>Godrej Make ONLY</b>
09.	Paint	ICI (Dulex – duco), Asian Paints, Goodless Nerolac.
<b>10.</b>	<b>Adhesive</b>	<b>Fevicol SH</b> for Woodwork ,Plywood & Laminate
11.	Hardware	Shalimar, CIEF, Vision
12.	Screws	G.K.W., Nettle fold
13.	Soft Board	Jolly Board
<b>14.</b>	<b>Laminate</b>	<b>Signature / Sunmica ( 1mm thick)</b>
<b>15.</b>	<b>Gypsum Board (false-ceiling)</b>	<b>India Gypsum Limited .</b>
16.	Teak wood based particle board	Nova Teak Super by Indian plywood Mfg Co
17.	Commercial Plywood / block board	Century , Samrat ,Anchor
18.	Teak Veneer	Century, Samrat , Anchor
<b>19.</b>	<b>Marine plywood BWR GRADE IS 303</b>	<b>Century / Samrat</b>
<b>20</b>	<b>Aluminum framework</b>	<b>Jindal</b>

: 5:

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**:TECHNICAL SPECIFICATIONS FOR ELECTRICAL WORK :**

**1.0 DISTRIBUTION BOARDS :**

- 1.1 SCOPE : This specification covers design, manufacture, testing and commissioning of the Dist. boards.
- 1.2 STANDARDS : The design, manufacture and testing of the distribution board shall comply with the latest issue of the following standards :
- a) IS : 2675 : Specification for enclosed distribution fuse boards and cut-out for voltages not exceeding 1000 volts.
  - b) IS : 4237 : General requirements for switch-gear and control gear for voltages not exceeding 7000 Volts.
  - c) IS : 4047 : Specification for heavy duty air break switches and composite units of air break switches.
  - d) IS : 2208 : Specification for HRC fuse links upto 650 Volts.
  - e) IS : 375 : Specification for marking and general arrangement for switch-gear , busbar, main connection and auxiliary wiring
  - f) IS : 1897 : Specification for copper bus bars.
  - g) IS : 2147 : Degree of protection provided by enclosure for low voltage switch-gear
- 1.3 CONSTRUCTION :
- a) Distribution boards shall be metal cubicle type wall / floor mounting type. It shall be totally enclosed, completely dust-proof and vermin-proof.
  - b) Sheet steel work shall be of high quality and shall be free from burrs.
  - c) The sheet steel used for the body and doors shall be at least 1.6mm thick.
  - d) The design shall be based on modular construction. Barriers shall be provided between the modules as well as between vertical and horizontal busbars and the modules.
  - e) Distribution board shall be extensible on both the sides and shall be uniform in height.
  - f) The distribution board shall have a covering at the bottom and top so that entry of dust and vermin is prevented.
  - g) Each module shall have an independent hinged door with concealed type hinges. Each door shall be provided with gasket to make the equipment dust tight. Each door shall be provided with insulated quick turn.
  - h) Adequate space shall be provided in each module for termination of cables.
  - i) The design shall be dead front type. No live components shall be mounted on the door. All the components such as switches, fuses etc. shall be mounted on the rear plate of the module, or with suitable mounting brackets as required.
  - j) Door interlock shall be provided with every door so that it shall not be possible to open the door with the switch in closed position.
- 1.4 BUSBARS :
- a) Three phase and neutral copper busbars of hard drawn high conductivity tinned copper shall be provided. The current density in the busbars shall not be more than 160A/Cm<sup>2</sup>. Neutral busbars rating shall not be less than 50% of the phase busbar.
  - b) The busbar chamber shall have screwed on sheet steel removable covers with gaskets.
  - c) Copper earth bus, to suit the system fault level shall be provided for entire length of distribution board.
  - d) The copper busbars shall be run, one set for each panel.
  - e) The busbars supports shall be non-hygroscopic ant tracking material. Busbar supports shall be provided at every 300mm. apart on as directed by Engineer in charge.
  - f) Bolted joints shall be provided with couch screws, spring washers, lock nuts etc. for ant vibration. The bolts shall either be of Brass or cadmium plated type.

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1.5 WIRING AND TERMINALS :

- a) Flexible copper wires of suitable current rating and of 1100/600 V. grade shall be used for internal wiring. Lugs shall be used for terminating these wires. The lugs shall be fitted by crimping method only.
- b) Elmex type terminals blocks shall be provided where upto 35 mm<sup>2</sup> cables are to be terminated.
- c) For termination of cables of sizes higher than 35 mm<sup>2</sup> terminals in the form of copper busbar pieces shall be provided.

1.6 WIRE-WAYS :

- a) Vertical wire-ways of adequate capacity shall be provided for clamping and accommodating all outgoing cables including provision for future requirements.
- b) The wire-ways shall have hinged door with concealed type hinges and non-aging material gasket. The door shall have insulated quick term screws.
- c) Clamping facility shall be provided in the wire-ways for clamping outgoing cables.
- d) Adequate shrouds shall be provided to prevent accidental contact with outgoing terminals.

1.7 CABLE ENTRY :

- a) Cable entry for all the feeders shall be from top / bottom. Cables and base of adequate size to be provided wherever required.
- b) Removable sheet steel gland plates shall be provided. Holes for appropriate sizes of cables glands shall be made at site.
- c) Compression type brass plated cable glands shall be provided.

1.8 SWITCHES :

- a) The switches shall be heavy duty type and shall be suitable for heavy duty / motor duty.
- b) The switches shall be 3 pole and neutral units / triple pole as required.
- c) Shrouds shall be provided for the incoming live terminals.
- d) The terminals shall have spring washers.
- e) ON - OFF mechanical indicators / switch position marking shall be provided.
- f) Locking facility shall be provided.
- g) The switches shall be operable from front.

1.9 FUSES :

- a) The fuse links shall be per relevant ISI standards.
- b) Two nos. fuse pullers shall be supplied at each panel location and suitably mounted on wall.

1.10 INSPECTION AND TESTING :

a) Inspection :

The inspection shall consist of following, but shall not be limited to the same :

- i) Appearance and construction
- ii) Dimensions mounting details etc.
- iii) Feeder arrangement and feeder details
- iv) Door alignment, gaskets etc.
- v) Alignment of switch drive and handle.

b) Tests :

The following tests shall be carried out :

- i) Insulation resistance.

The insulation resistance shall be measured between phases, between phases & neutral and between phases and earth.

The insulation resistance shall be measured with 10000 Volts megger., both before and after the high voltage power frequency test. The insulation resistance shall not be less than (three) megaohm in any case.

- ii) High Voltage Power frequency test :

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This test shall be carried out by applying a Voltage of 2.5 K V for one minute.

- a) between all the three phases and earth.
- b) Between the phases.
- c) between phases and neutral

iii) If the results of inspection and tests are not satisfactory, the defects shall be rectified and tests shall be repeated to entire satisfaction of Engineer-In-charge without, any extra charge to Engineer-in-charge / owner. The inspection and test results shall be submitted, in quadruplicate for Engineer-in-charge approval.

#### 1.11 DRAWINGS & GUARANTEED TECHNICAL PARTICULARS

The following shall be submitted, in quadruplicate for Architects approval, before taking up the fabrication.

##### a) Guaranteed technical particulars for :

- i) Switches
- ii) HRC fuses & fuse bases
- iii) All insulations such as busbar supports.

##### b) Drawings :

- i) Assembly drawing - This should incorporate dimensions, weight and feeder arrangement.
- ii) Foundation Drawing.
- iii) Insulation instructions
- iv) Maintenance instructions, spare parts catalogues for components.

#### 1.12 PAINTING :

All steel work shall undergo a process of degreasing pickling in acid bath, phosphatising. This shall be followed by two coats of primer and two coats of final finish paint, both applied with spray. The colour shade shall be got approved before painting.

#### 1.13 LABELS :

Engraved PVC / Black Anodised labels shall be provided on all the incoming and outgoing feeders.

#### 2.0 FUSE, DISTRIBUTION BOARDS & ISOLATORS.

##### 2.1 SCOPE :

The scope of work shall cover the supply, installation, testing and commissioning of fuse, distribution boards and isolators. Associate minor civil work required for the erection of the DB's and isolators are included in the scope of this contract.

##### 2.2 STANDARDS :

The following standards and rules shall be applicable -

- IS - 2675 : Enclosed distribution fuse boards and cutouts for voltages not exceeding 1000 V.
  - IS - 2607 : Air-break isolators for voltages not exceeding 1000 V.
  - IS - 375 : Marking and arrangements of switch-gear, busbars, main connections and auxiliary wiring.
- Indian Electricity Act 1910 and rules issued there under.

##### 2.3 CONSTRUCTION :

- a) Fuse distribution Board along with the controlling switch fuse unit or isolator shall be fixed in an M.S. box with hinged lockable door suitable for wall mounting. Distribution boards shall be made of 16 SWG sheet steel. Three phase boards shall be made of 16 SWG sheet steel... Three phase boards shall have phase barriers and a wire channel on three sides. Conduits knockouts shall be rendered dust and vermin proof with necessary sealing gaskets.
- b) Fuses shall be HRC link type only with necessary fuse carriers and with a minimum short circuit rating at 25 KVA.
- c) Isolators shall be fixed on self-supported angle iron frame or mounted inside a recessed mounted sheet steel enclosing with hinged front cover as required, and as directed by Engineer-in-charge.
- d) Painting, earthing and labels shall be provided as indicated for power panels as shown on drawings.

: 8 :

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**2.4 INSTALLATION & TESTING :**

- a) All distribution Boards and Isolators shall be mounted on necessary angle iron frame work. All mounting frames shall be prime coated with two finish coats after the completion of work. All distribution boards shall be touched up for damaged printing.
- b) All boards shall meggered phase to phase and to neutral and phase to earth using a 1000 V. megger with all switch-gear in closed position. The megger values should not be less than 25 megohms between phases and 15 megohms between phase and neutral, and between phases and earth.
- c) Fabrication drawings of all the boards shall be approved by the Engineer-in-charge before the fabrication.

**2.5 MODE OF MEASUREMENT :**

- a) The distribution board / isolator complete with the various components specified including supporting frame, erection etc. will be treated as one unit for purpose of measurement and payment.
- b) Earthing of the boards from the equipment earthing system will not be a part of the unit for purpose of measurement.

**3.0 LIGHTING DISTRIBUTION BOARD :**

**3.1 SCOPE :**

The specification covers design, manufacture, testing and commissioning of lighting distribution boards.

**3.2 STANDARDS :**

- IS - 2675 : Specification for enclosed distribution fuse boards and cut-outs for voltage not exceeding 1000 V.
- IS - 4237 : General requirements for switch-gear and control gear for voltages not exceeding 1000 V.
- IS - 375 : Specification for marking and general arrangement for switch-gear busbars, main connection and auxiliary wiring.
- IS - 2147 : Degree of protection provided by enclosure for low voltage switch-gear.
- IS - 4064 : Heavy duty fuse switch units
- IS - 8828 : Miniature Circuit Breakers
- IS - 9224 : High Rupturing Capacity fuse links.
- (BS - 3871 - pl) : Specification for Miniature Circuit Breakers

**3.3 CONSTRUCTION :**

- a) Lighting distribution board shall be cubical type suitable for wall mounting or recessed mounting. It shall be totally enclosed, completely dust-proof and vermin proof.
- b) Sheet steel work shall be of high quality and shall be free from burrs.
- c) Sheet steel used for the body and door shall be at least 2 mm. thick, while the base angle / sheet shall be at least 3mm. thick.
- d) Lighting distribution board shall have one hinged door which will cover the entire front portion. The door shall be provided with gasket, to make the equipment dust, tight and also with insulated quick turn screws.
- e) Design shall be dead front type. No live components shall be mounted on the door.
- f) Adequate space shall be provided for termination of aluminium / copper cables and wires.

**3.4 BUSBARS :**

- a) Phase and neutral copper busbars shall be provided at the top, for the entire length of the lighting distribution board.

**3.5 WIRING & TERMINAL :**

- a) The Lighting distribution board shall be factory wired.
- b) Flexible copper wires shall be used for internal wiring.
- c) El mex type terminal blocks shall be provided for all the outgoing phase wires.
- d) For neutral terminals brass neutral terminal block shall be provided. It should have spare capacity of at least 10%

: 9 :

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3.6 CABLE ENTRY

- a) Cable entry for in-comer shall be from bottom / top but entry for outgoing circuits shall be from top.
- b) Removable sheet steel plated shall be provided for conduit entry / cable entry.
- c) Compression type plated brass cable gland shall be provided for the incoming / outgoing cables.

3.7 MINIATURE CIRCUIT BREAKERS :

- a) Bakelite shrouds shall be provided for all the live terminals and only dollies shall project outside for operation.
- b) The dollies shall be made of phenolic material. The dollies made of nylon material shall not be accepted.
- c) The MCB housing shall be made of melamine powder.

3.8 EARTHING :

Two non earthing terminals shall be provided, on either side of the lighting distribution board.

3.9 INSPECTION AND TESTING

a) Inspection :

The Inspection shall consist of following, but not limited to the same :

- i) Appearance and construction
- ii) Dimension, mounting details etc.
- iii) In-comer and outgoing circuits details
- iv) Door alignment, gasket etc.

b) Testing :

The following test shall be carried out

i) Insulation resistance :

The Insulation resistance shall be measured between phases, between phases and neutral and between phases and earth. The insulation resistance shall be measured with 1000 Volt meggar, both before and after the high voltage power frequency test. The Insulation resistance shall not be than two megaohms in any case.

ii) High voltage power frequency test :

This test shall be carried out by applying a voltage of 2.5 KV for a minute.

- a) between all three phases and earth
- b) between phases
- c) between phases and neutral

3.10 DRAWINGS & GUARANTEED TECHNICAL PARTICULARS :

The followings shall be submitted for consultants approval

- a) Guaranteed technical particulars for Miniature Circuit Breakers.
- b) Assembly drawing - This should incorporate dimensions weight and MCB arrangement.
- c) Mounting details

3.11 PAINTING :

All steel work shall undergo a process of degreasing, pickling in acid bath, phosphatising. This shall be followed by a coat of primer and two coats of final finish paint, both applied with spray.

3.12 LABELS :

Engraved PVC/Black Anodised labels shall be provided on all the incomer and outgoing circuits.

: 10 :

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**4.0 CABLING :**

**4.1 SCOPE :**

This specification covers supply, testing, erection and commissioning of cables as detailed under Bill of Materials.

**4.2 CABLING :**

a) Power Cables :

The L. T. Power Cables shall conform to I.S. 1554. The conductor shall be of copper / aluminum PVC insulated , PVC sheathed steel armoured. The cables shall be suitable for grounded neutral system and shall be of 1100 volts grade. The conductor size and no. of cores shall be as specified.

b) Control Cables :

The control Cables shall conform to I.S. 1554. The conductor shall be of copper, PVC insulated, PVC sheathed 1100 volts grade, the conductor size shall not be less than 2.5 sq mm. unless otherwise specified. The number of cores shall be as specified.

**4.3 CABLE ACCESSORIES :**

a) The cable glands shall be compression type plated brass. They shall be complete with neoprene rubber rings, two nos. galvanized M.S. washers, lock nuts etc.

b) Cable Terminator :

Cable lugs shall be used for stranded conductors, cable lugs shall be fitted by Crimping method only. The oxide inhibiting compound shall be used for removal of oxide film on the conductor. Tinned copper lugs shall be used for cables upto 35 mm<sup>2</sup> and aluminium lugs shall be used for higher sizes.

c) 25mm x 3 mm G.I. / Aluminium strips, galvanised nuts, bolts and flat washers shall be used for cable clamping.

d) G.I. / Aluminium cable tag markers shall be used for identification of the cables. The cable nos. shall be punched on the tag markers. 16 SWG G.I. wires shall be used for fixing the cables tag markers.

**4.4 ERECTION**

a) Before cable erection, phase to phase. phase to neutral and phase to earth insulation and continuity of the conductor shall be ascertained.

b) Sharp bends shall be avoided. The bending radius shall not be less than 12 X diameter of the cables for L.T. cables.

c) The cables shall be clamped at every 600mm.

d) The cable tag markers shall be fixed at every 10m. and at strategic locations, as directed by the Engineer in charge.

e) Holes of appropriate sizes shall be drilled on cable glands plates of the D.B. for cable / conduct entry and exit. The paint around the holes shall be scraped before fixing the cable glands. The amounring strands shall be cut, bent and clamped between G.I. washers, after glanding the cable shall not slip.

f) Solid conductor shall be tinned before terminations.

g) The workmanship in end termination and glanding shall be excellent.

h) Cables shall be laid in the routes marked in the drawings. Where the route is not marked, the contractor shall mark it out on the drawings and also on the site and obtain the approval of the Architect / Consultants before laying the cable.

Procurement of cables shall be on the basis of actual site measurements.

**4.5 UNDERGROUND CABLES :**

Cables shall so laid that they will not interfere with other underground structure / services. L.T. cables shall be laid after excavating a trench of uniform depth of 750mm. and wide enough for laying the number of cables. A layer of bricks shall be laid on the sides of the cables and then the trench shall be refilled with sand and earth 1/2" thick cast iron galvanised a RCC pipe of 150mm. dia. shall be provided. The pipe shall be laid to a depth of 1 Mt. below the surface of the road. The pipe shall be laid to prevent choking.

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#### 4.6 SITE TESTS :

The following tests shall be carried out :-

a) Continuity Test :-

The continuity shall be established with multimeter.

b) Insulation Resistance Test :-

The insulation resistance shall be measured between phases, phase to neutral and phase to earth before and after high voltage power frequency test.

c) High voltage power Frequency Test :-

This test shall be carried out for providing phase to phase insulation, phase to neutral and phase to earth insulation. The cables should withstand the appropriate voltage for one minute.

#### 5.0 EARTHING :

5.1 SCOPE : The scope of work under this section covers the earthing of various panels, DB's and utilisation equipments.

#### 5.2 STANDARDS :

The following standards and rules shall be applicable :-

- a) IS - 3043 / 1966 Code of Practice for earthing.
- b) Indian Electricity Act. 1910 and rules issued there under.

#### 5.3 PLATE ELECTRODES :

Plate type earth electrodes shall be provided at the location shown on drawing. The plate size shall be 600 x 600 x 3mm. tinned copper plate. The minimum depth, type of electrodes, soil treatment shall be in accordance with I.S. Code 304 / 1966 complete with masonry watering pipe, G.I. cover etc. The number of earthing stations shall be as shown on the drawings, and as directed Engineer-in-charge.

#### 5.4 EQUIPMENT EARTHING :

- a) 3 phase motors and other 3 phase apparatus shall have two distinct earth connections of size equal to 50% of the connecting cables.
- b) For 1hp. motors and 1hp. apparatus, the single earth connections shall be provided. For all light fittings and fans a single earth connection with 1.5 mm<sup>2</sup> copper shall be provided.

#### 5.5 EARTH CONTINUITY CONDUCTORS :

- a) Metallic conduit shall not be accented as an earth continuity conductor. A separate copper earth continuity conductor of size of 50% of phase conductor or 16 SWG copper wire whichever is more shall be provided.
- b) The earth continuity conductor shall be clamped to the conduit at one meter intervals using approved copper earth clamps. Binding wire is not accepted as a sub.....for earth clamps.

#### 5.6 SIZE OF COPPER STRIPS / WIRES FOR EARTHING :

Earthing of cable boxes shall be carries out as under :

S.No.	Size of Cable	Size of copper strip / wire
1.	a) 10 Sq. mm/4 core b) 16 Sq. mm/4 core c) 25 Sq. mm/3 core d) 35 Sq. mm/3 core	2 Nos. of 8 SWG copper
2.	a) 50 Sq. mm/3 core b) 70 Sq. mm/3 core c) 95 Sq. mm/3 core	2 Nos. of 4 SWG copper
3.	a) 100 Sq. mm/3 core b) 150 Sq. mm/3 core c) 185 Sq. mm/3 core	2 Nos. of 25 x 3 mm copper

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4.       a) 225 Sq. mm/ 3core  
          b) 300 Sq. mm/3 core  
          c) 400 Sq. mm/3 core  
          d) 500 Sq. mm/3 core
- 2 Nos. of 25 x 6 mm copper  
or as directed by Architects.

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Earthing of following equipments shall be done with two number copper strips of size specified in schedule from Ring Main earthing tapped at different places.  
HT Switch-gears, LT Switch-gears & Panels and Transformers.

Ground equipments :

Ground wire / strip shall either terminate on ground lugs provided on the equipments or shall be fastened to the foundation bold and the frame of equipment.

All conduits shall be grounded with approved proper size certain flexibility in its connection to the equipment.

Suitable size of sleeves required in the wall column etc. taking earth strips across them shall be provided by the electrical contractor during the civil construction. After laying the earth strip, the sleeve shall be properly sealed.

5.7 ERECTION :

a) Joints : The joints of earthing conductors shall be brazed, bolted or welded. Welded surface shall be painted with red oxide and then aluminium painted.

b) Termination : Where the diameter of the bold, at the joints, exceeds one quarter of the width of the earth continuity, the connection shall be made with a wider piece sandwiched between the two conductors.

c) Cable / Earthing conductors supports :

i) Cables / earthing conductors shall be fixed on walls / cable racks.

ii) Cable racks shall be fabricated from folded section (40 x 40 x 5 angles and 25 x 3 flats) and they shall rest and be supported on steel supports, located approx. at 3 M. apart and at salient points. The cable racks shall be painted with two coats of red oxide primer and two coats of paint of deep battleship gray colour.

iii) If the cables / earthing conductors are run along the wall, M.S. galvanised or Aluminium of suitable size spacer (25mm x 30 mm thick) shall be provided at every 600mm. The spacer shall be fixed with good quality rawl plugs and G.I. screws.

5.8 SITE TEST :

The following earth resistance values shall be measured with an approved earth meggar and recorded : -

1. Each earthing station.
2. Earthing system as a whole.
3. Earth continuity conductors.

5.9 MODE OF MEASUREMENT :

a) Providing an earthing station, complete with excavation electrode watering pipe, soil treatment, chamber etc. shall be treated as one unit of measurement.

b) The following item of work shall be measured and paid at unit rates covering the cost of the earth wires / strips clamps, labour etc. :-

i) Main equipment earthing grid and connections to earthing stations.

ii) Connection to the power panels, distribution boards etc.

c) The cost of earthing the following items shall become part of the cost of the item itself and no separate payment for earthing shall be made.

i) Motors - earthing forming part of the cabling / wiring for the motors.

ii) Isolating switches and starters - should form part of mounting frame, switch starter etc.

iii) Light Fittings - form part of installation of light fittings.

iv) Conduit wiring and cabling - should form part of the wiring of cabling.

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6.0 **LIGHTING INSTALLATION :**

6.1 **SCOPE :** The specification covers supply, erection, testing and commissioning of lighting fixture plug point etc. as detailed under bill of materials.

6.2 **STANDARDS & CODES :**

The design, manufacture, erection, testing and commissioning shall comply with, but not limited to the latest issue of the following :

- IS - 1937 (Part - III) : Specification for rigid PVC conduit for Electrical wiring.
- IS - 694 (Part - I) : PVC insulated cables with copper conductors for voltages upto 1100 V.
- IS - 732 : Code of Practice for wiring installation (voltage not exceeding 650V
- IS - 1646 : General code of practice for fire safety of building - electrical installation
- IS - 3043 : Code of Practice for Earthing, Indian Electricity rules and Fire Insurance Regulations.

6.3 **CONDUIT WIRING :-**

- a) All conduits and wiring shall be completely open. Outlet junction boxes, inspection boxes shall be provided on the surface.
- b) All conduits wiring shall conform to IS - 9537 (Part III) and shall be rigid PVC conduit accessories shall be PVC grip type. No. PVC conduit less than 20mm dia shall be used.
- c) Conduit pipe shall be jointed by means of couplers and accessories only. In long distance straight runs of conduit, inspection boxes at reasonable intervals shall be provided.
- d) The outer surface of the conduit pipes including all bends, unions, tees, junction boxes etc. forming part of the conduit system, shall be adequately supported.
- e) All necessary bend in the system shall be done by bending pipes or by using standards bends, for diversion purpose pipes shall be bent.
- f) At least 18 SWG G.I. wire shall be laid through the conduit to enable to pull the wires through the conduit.
- g) The conduits for concealed wiring in slab or in R.C.C. wall shall be tied to the reinforcement bars by M.S. Galvanised wires at suitable places to give the conduits rigidity. Before installing conduits junction boxes and inspection boxes in the brick-wall, a chase shall be made. This work is done before plastering of the walls is done and shall be co-ordinating with the other agency. After installing the conduits the chase shall be closed and shall be finished flush with the wall.
- h) The junction boxes and inspection boxes and switch boxes shall be temporarily blocked by jute, before the concreting is done and shall be co-ordinating with Architects. After concreting is over, all the boxes shall be cleaned if they are choked up by concrete.
- i) Separate earth wire of 14 SWG copper shall run along with each conduit for earthing externally. Conduit shall not be used as a earth medium.
- j) The conduit of each circuit or section be completed before conductors are drawn in. The entire system of conduit after erection shall be tested for mechanical and electrical continuity throughout and permanently connected to earth.

6.4 **WIRE AND FLEXIBLE :**

- a) Single core PVC insulated 630 volts grade copper wire shall be used for wiring. The size of the conductor shall be as specified in the drawings but in no case it shall be less than 15 mm<sup>2</sup> for lighting circuit and 2.5mm<sup>2</sup> for power circuit. Three core PVC insulated and PVC sheathed flexible shall be used from junction box to lighting fittings / fan. The minimum size of flexible wire shall be 16/0.20mm. copper conductor. Black color insulated wire shall be used for neutral conductors. Coloured insulated wires of respective colours shall be used for phase conductor.
- b) The wiring shall be done in looping system. The phase conductor shall be loped at the switch-box for sub-circuit. The neutral conductor for sub-circuit can be looped either from switch box or from the light / fan / socket point. Twisted joints for looping are not acceptable.
- c) Straight through joints shall not be permitted on single core wires and flexible.
- d) Colored insulated wires of respective color shall be used for phase conductors and black colours insulated wires shall be used for neutral conductors.

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6.5 FITTINGS & ACCESSORIES :

a) Lighting Fixture - The lighting fixtures shall be as per the specifications enclosed. The lighting fixtures shall be of the type specified in the drawing. The mounting height and location shall be as specified in the drawing. The mounting height and location shall be as specified in the drawing. Unless otherwise specified, the mounting height shall not be less than 2.5m. The lighting fixtures shall be either supported vertically or mounted on bracket or suspended by a hook, as required.

b) Plug Points - ( 10 amp/20 amp metal clad type ) only three pin socket outlets as per the specification enclosed shall be used. Every socket shall be controlled by a switch which shall be located adjacent to it at operable height and wiring for socket outlet on switch box shall also be included. The switch controlling the socket outlet shall be on the live side. The mounting and location shall be as specified in the drawing. Unless and otherwise specified, the mounting height shall not be more than 1.5 m. above floor level.

c) Switches - The switches shall be 5 amps. rating for lighting sub-circuit. The switches shall be single pole, plate type.

d) Switch Boxes - The switch boxes shall be totally enclosed made of sheet steel concealed type.

e) Attachment of fitting and Accessories - All the necessary materials for the mounting and operation of lighting fixtures, sockets, outlets etc. such as M.S. painted down rods brackets, ball and socket of approved make, M.S. painted down rods brackets ball and socket of approved make, M.S. painted junction boxes, terminals strips etc. shall be used.

6.6 INTER CHANGEABILITY :

Similar part of all the switches, pendants, brackets, conduits and accessories etc. of the same type shall be interchangeable.

6.7 EARTHING :

The earth shall conform to IS 3043 - 14 SWG copper wire shall be used for earthing and the conduit. The earthing wire shall be run continuously along the conduit. All the earthing wires shall be connected to the earth bus provided near the distribution board.

6.8 TESTING OF INSTALLATION :

Before the installation is put into service, the following tests shall be completed with :-

a) Insulation Resistance - The insulation resistance shall be measured by applying between earth and whole system of conductors or any section thereof. 500 volt D.C. for single phase system by means of a megger. The insulation resistance shall not be less than one megaohm.

b) Testing Earth Continuity Path - The earthing conductors shall be tested for electrical continuity. The electrical resistance of the same along with earthing lead from the connection with the earth electrode to any point, in any point in the earth continuity conductor in the complete installation shall be less than one ohm.

c) Testing of Polarity of single pole Switch - The test shall be made to verify that all single pole switches have been fitted between the phase conductors and light / fan / socket outlet.

6.9 MODE OF MEASUREMENTS :

a) Mains / Sub. Main Wires - Conduit wiring from lighting D.B. upto switch board and looping the phase conductor from one switchboard to other as mentioned in the single line diagram shall be treated as main / sub-mains wiring respectively. This shall be run in a conduit separate from that of point wiring. The estimated length of the conduits for the circuits wiring has given in the schedule of quantities. This includes the length of conduits with different no. of wire viz. 2,4,6,8 etc.

: 15 :

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b) Point Wiring -

i) Point wiring shall include all work necessary to complete wiring of any length from the tapping point of distribution circuit to the following via. switch bell push :-

- \* Junction box / ceiling rose for light / fan points.
- \* Plug points
- \* Lumi-sound indicator bell / bujjer.

ii) The following shall be deemed to be include in the point wiring :-

- \* Switch / bell push and switch box (for switch fan regulator, bell push etc.).
- \* Conduit and accessories such as bends, inspection bends, tees, junction boxes etc.
- \* All fixing accessories for conduits and conduit accessories such as clamps, spacers, rawl plug, G.I. screw etc.
- \* Wiring between switch / bell push and junction box / ceiling rose / plug point / lumisound indicator and wiring necessary between switch boards other than mains wiring shown in the drawing.
- \* 14 SWG copper earth wire all along the conduit including clamps for the same.

c) Primary & Secondary Points - Where the lighting fixture are controlled from LDB directly, the entire wiring from LDB to the first fixture shall be treated as a primary point and with continuation of circuit from one point to another shall be treated as secondary point.

6.10

NOS. OF WIRES IN A CONDUIT :-

The maximum number of wires that may be laid in any conduit for circuit wiring or point wiring is given below :-

<u>Size of Wires</u>	<u>Size of conduits mm.</u>		
1.5sq. mm.	19	25.4	31.8
2.5sq. mm.	6	8	12
	4	6	10

6.11 MAKE OF ITEM :-

All the materials used in electrical works covered in this contract shall be as per the list of preferred makes. The contractor shall submit the list of items and their manufacture for Architect approval.

: 16 :

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## : TECHNICAL SPECIFICATIONS:

: 17 :

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**Note :**

- a) Rate is inclusive of Scaffolding & carting away the debris from the site totally. Also all relevant permissions from Mumbai Municipal Corporation , Chief Fire Officer ( CFO) , BEST for higher capacity meter or any other statutory bodies.
- b) Contractor to refer Technical Specifications thoroughly & visit the site before quoting all the following tender items in Bill of quantities. Contractor is requested to take photographs of existing premises before demolition & after completion of the work
- c) Only official Receipts payments will be made by the OICL .Any loss or damage to the Company's property during the progress of work shall be borne by the Contractor.
- d) CBO1 Toilets are in working condition shall be used. Beside existing electrical / telephone & computer / Lan cabling ,water connection shall not be disconnected till the handing over the site without any extra charges.this please be noted
- e) Rate to include Removal of Existing partition ,existing electrical fittings & fixtures ,shifting of existing furniture, steel cabinets, cupboards or any other loose furniture which are required to be shifted on temporary basis on the same floor till the completion of the work and handing over the complete furnish premises to OICL

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**A) : Furniture Work:**

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**1) Demolition :** Removing existing flooring ,skirting, wall plaster ,loose concrete , full height fixed / low height wooden partition / , electrical wiring , & fixtures doors and also all other items which are to be removed as well as not to be reused again to be taken away from the site ( Salvage to be paid separately Kindly quote in the summary) .All loose furniture ,chairs, electrical fittings & fixtures, cables etc. are to be stack on site as per the instructions.

**2) New Full Height Partition :-** ( Including the door shutter)

**a) Partition with both side laminate ,Glazing & texture finish( include Door shutter):**

Providing & fixing partition made out of 2" x2" 18 Guage Alum framework @ 24" c/c both ways **OR** 2" x 1.5" @ 18" c/c bothways firmly fitted to the floor & ceiling . with Alum. L section 40 x40 mm .Entire Frame work to be covered with 9mm thick Marine Plywood on both sides and finish with 1mm thick laminate on both side of approved shade & colour.in pattern design and texture paint of Asian make within the pattern inside the cabins as per instructions. Laminate to be fixed to the Marine Plywood with Fevicol SH ,

Hi-per / Marine grade and as per the manufacturer's instructions.

Partition shall also have 40mm thick solid core flush door with 4" x2" t.w. framework & side lipping of 40 x 12mm thick all around . Outside finish of the door shutter will be 1mm thick laminate of approved colour & shade. Door shall include all brass hinges, approved make 6 lever lock & matt finish s/s handles, & powder coated brass stopper and also heavy duty door closure / floor spring with necessary civil work . Door frame work & shutter edges to be finish with 3 coats of french polish of approved colour & shade with necessary surface preparation etc. complete.

**b) Glazed & both side laminate ,Glazed finish ( include Door shutter):**

...do... as item 1a above but partition shall have both side laminate and glazing of 8mm thick of Modiguard make with ground glass pattern fitted to the glass with Approved Itching Pattern as per the design & instructions. Glass is fitted in t.w.beading of 30 x 12mm with step down continuous groove all side finish with 3 coats of french polish of approved colour & shade with necessary surface preparation etc. complete.

**c) Laminate finish outside & Luster paint inside ( include Door shutter):**

...do... as item no.1 a above but partition shall be finish with 1mm thick laminate of approved shade & colour from outside and 2 coats of Luster paint over a coat of cement primer ,putty & necessary surface preparation etc. complete.

**d) Fully Glazed Partition ( including of the door shutter) ...do. as item 1a above but using 12mm thick full height toughen glass with ground glass pattern fitted to the glass with itching pattern as per the design & instructions Glass is fitted in t.w.beading of 30 x 12mm with step down continuous groove on all sides finish with 3 coats of french polish of approved colour & shade with necessary surface preparation etc. complete.**

: 18:

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**3) New Low Height Glazed laminated partition 4'-0" high**

Providing & fixing Low Height Partition made out of made out of 18 Gauge Alum .framework of size 2" x2" @ 24" c/c both ways

**OR** 2" x 1.5" @ 18" c/c both ways firmly fitted to the floor with Alum. L section 40 x40 mm Entire Frame work to be covered with 8mm thick Bisen Board on both sides and finish with 1mm thick laminate on both side of approved shade & colour.in pattern design and texture paint of Asian make Laminate to be fixed to the 9mm Thick Marine Plywood with Fevicol SH, Hi-per / Marine grade and as per the manufacturer's instructions. Partition shall also have 12mm thick Modi make semicircular glass as per design & location ,size & shape with machine polish edges on all sides with **APPROVED ITCHING PATTERN**. Glass is fitted in Brass s/s D brackets Partition shall have pin board made out of 12mm thick soft board duly treated with wood preservative in semicircular shape as per design size & shape duly covered with fabric of Rs.250/Mtr fitted to the partition with t.w.beading all around finish with 3coats of french polish of approved shade & colour in workmanship like manner Top of the frame work to be of 3" x1" t.w .runner with step down continuous groove finish with melamine polish of approved colour & shade.

**4) Wall Paneling with Laminate /Texture :-**

Providing & fixing paneling over the wall out of 18 Gauge Alum .framework of size 2"x1" @ 18" c/c both ways **OR** 2" x 1.5" @ 18" c/c both ways Frame work to be covered with 9mm thick Marine Plywood of approved grade & make finish with 1mm thick laminate upto 4' high of approved shade & colour Laminate to be fixed to the marine plywood with Fevicol Hi-per / Marine grade

and as per the manufacturer's instructions. and above the laminate & texture with side t.w.moulding of 3" x1" t.w.around with step down continuous groove finish with Applying 2 coats Texture paint of Asian / Nerolac make to walls over a coat primer with necessary surface preparation with pop,putty etc. complete in workmanship like manner. Paint to be applied as per the manufacturer's instructions.

**5) Running counter with low height partition :-**Providing & fixing 24" wide 1mm thick laminated top running counter made out of made out of 18 mm thick Marine plywood BWR IS 303 of approved Grade & make . Counter shall have storage unit with 4" high drawer , one openable shutter with one shelf in between. Beside this wire manager, key board drawer, & CPU stand trolley to be provided to each member. Drawer to be made out of 19mm thick marine front& 12mm thick sides & 6mm thick bottom. Drawers are running on Twin Telescopic Drawer channels of Earl- Bihari make, approved stainless steel brush finish handles, Single lock arrangement for Drawer unit. Finish with 3 coats of French polish from inside & 1mm thick laminate on all visible sides for top & storage units. Rate also to include low height partition as per item no.3 above Partition shall also have 12mm thick Modi make semicircular toughen glass as per design & location ,size & shape with machine polish edges on all sides with **APPROVED ITCHING PATTERN**. Glass is fitted in Brass s/s D brackets

**6) Work Station for Admin .officers with low height partition in open office area which include:**

a) 4'-0" Low Height partition same as item no.3 above and also include

Writing Desk & Storage cabinet which comprising of :-

a) 24' to27" wide Writing desk in size & shape 25mm mm thick marine plywood top with 1mm thick laminate.

b) Providing & fixing 12mm thick pin board made out of 12mm thick soft duly treated with wood preservative in semicircular shape as per design size & shape duly covered with fabric of Rs.350/Mtr fitted to the partition with t.w.beading all around finish with 3coats of French polish of approved shade & colour in workmanship like manner to match existing

d) Storage Cabinets 18" deep with 6" high one pull out drawer and storage below with one in between Made out of 18 mm thick Marine plywood of approved Grade & make Finish with 3 coats of French polish from inside & 1mm thick laminate on all visible sides where as 1mm thick laminate on front & top Drawers are running on Twin Telescopic Drawer channels of **Earl-Bihari** make, approved stainless steel brush finish handles, Single lock arrangement for Drawer unit Drawer to be made out of 18mm thick marine front& 12mm thick sides & 6mm thick bottom. as per the design & instructions.

e) Wire manager, key board drawer, CPU stand & removable type stand of 18 gauge s/s rods properly welded for keeping files in position.

f)Work station shall also have 12mm thick Modi make semicircular toughen glass as per design & location ,size & shape with machine polish edges on all sides with **APPROVED ITCHING PATTERN**. Glass is fitted in Brass s/s D brackets

:19:

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### 7) Reception Counter:

Providing & fixing Reception counter 24" x42" high

Writing Desk & Storage cabinet which comprising of :-

- a) 24' wide Writing desk at 30" level in size & shape 25mm mm thick marine plywood top with 1mm thick laminate.
- b) Storage Cabinets 18" deep with one 6" high pull out drawer and storage below with one one shelf in between .Made out of 19 mm thick Marine plywood of approved Grade & make Finish with 3 coats of French polish from inside & 1mm thick laminate on all visible sides where as 1mm thick laminate on front & top Drawers are running on Twin Telescopic Drawer channels of **Earl- Bihari** make, approved stainless steel brush finish handles, Single lock arrangement for Drawer unit to be made out of 18mm thick marine plywood front& 12mm thick plywood sides & 6mm thick marine plywood bottom. as per the design & instructions.
- c) Wire manager, key board drawer, CPU stand & removable type stand of 18 guage s/s rods properly welded for keeping files in position.
- d) Counter top shall have 12 thick polish edge glass top .
- e) Counter front shall have also 12mm thick polish edge glass top ,front & sides fitted with brass s/s studs

### 8) Low height & Full height storage units : ( 16" /18" deep of various heights )

Entire storage unit to be made out of 19 mm thick Marine plywood of approved BWR Grade IS 303 & approved make for cabinets with 6mm thick plywood on rear side and verticals if necessary .Finish with 3 coats of French polish from inside & 1mm thick laminate on all visible sides also on top & front of the openable shutters with 18mm thick plywood with edge lipping shelves in between @ 16' c/c .rested on t.w.battens of 1" x1/2" cabinet shall have all brass hardware & satin finish ,4" & 6" high brass cp handle Magnetic ball catches with locking arrangement etc. complete.

### 9) Revolving Chairs for entire office area including the Meeting Room of Approved Make only :

As per approved design & shape Basic cost of fabric Rs.450/- meter **Supplying** Low Back/ Medium back / High Back & high back with head rest revolving chairs \_as per basic specifications stated below:-

- |  |  |
|--|--|
| a) 14 gauge powder coated M S stand              | b) 5 star legs with nylon castor with gripper                        |
| c) PU ( Polyurethane foam ) arms                 | d) Gas lift with height arrangement & 1 <sup>st</sup> position lock. |
| e) 40 density Polyurethane foam moulded for seat | f) 32 density Polyurethane foam moulded for back                     |
| g) Seat height 19 "                              | h) Seat width : 17" / 18"      i) Back height : Varies for each type |

:20:

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**11) Glass top common meeting room Table: ( 2'-3' dia )**

Supplying 30 mm thick clear Toughen glass top with beveled edges round table with rested over 2Nos  
50mm dia s/s pipe supports with bracing and 12mm thick base plate of size 24" x24"

**12) Table with side table and rear side credenza : ( with 12mm thick clear glass top with polish edge & hole for wire manager )**

- a) **RM / MGR** :- 2'6" x5'6"      b) **DYM** :-2'3"x5'6"      c) **AM** :- 2-3" x 4'6"  
Side table :1'6" x3'6"      Side table :1'6" x3'6"      Side table :1'4" x 3'  
Rear side Credenza as per width of the cabin.

Providing & fixing Table with side table storage unit of size 18" x 42" made out 19mm thick marine plywood with 2Nos self standing mobile unit including 6" high one drawer with storage with open able shutter below with one shelf in between on other side , wire manager, key board drawer, & CPU stand and side table Storage unit with drawer & open able shutter below with one shelf in between is made out of 18mm/12mm & 6mm thick marine plywood finish with French polish from inside & 1mm laminate finish on all exposed sides. Drawers are running on channels with one single lever lock. below Entire unit is finish with 1mm thick laminate from all visible side and other areas with 2 coats of French polish including necessary surface preparation etc. complete .Rate is inclusive of placing the 12mm thick glass top with polish edges

**13) Fully Glazed Entrance Door**

Main Frame work 4" x2" t.w. framework on all sides using 12mm thick with edge polish full height toughen glass with itching pattern Company LOGO, floor spring & other fittings & fixtures as per the design & instructions .

**14) Running counter for sub staff :-**

Providing & fixing 24" wide 1mm thick laminated top running counter made out of made out of 18 mm thick Marine plywood of approved Grade & make . Counter shall have storage unit with 4" high drawer , one open able shutter with one shelf in between. Beside this wire manager, key board drawer, & CPU stand trolley to be provided to each member. Drawer to be made out of 18mm thick marine front& 12mm thick sides & 6mm thick bottom. Drawers are running on Twin Telescopic Drawer channels of Earl- Bihari make, approved stainless steel brush finish handles, Single lock arrangement for Drawer unit. Finish with 3 coats of French polish from inside & 1mm thick laminate on all visible sides for top & storage units.

**15) Two seater Sofa :**

Providing & supplying 2 seater / single seater sofa with handrest made out of t.w. framework with 4" & 3" pencil hole rubber foam for seat & back with 25mm yellow mm foam to give proper & 12mm rubber lining and cover with white cloth lining over finish with tapestry ( Basic cost of the fabric Rs.450/-per Meter) above the lining cloth with the satisfaction of Architect.

**16) ) Centre Table / Corner table :**

Supplying 12mm thick all side polish glass top centre table of size 2' x 2' over t.w. framework of 3" x 1 1/2" with cross bracing finish with melamine polish with necessary surface preparation etc.

**17) Abstract painting photo frame:**

Providing & fixing Abstract picture painting with polish t.w.framing all around with photoframe of size

- a) 18 " x 24"

- b) 24" x 30"

Basic Rate Rs.1000 /- to Rs.2000/-

**18) Artificial plants in ceramic pots:**

Supplying artificial plants in pots of various height & shape upto 4'-6" high Aa per the Selection / approval of Architect. ( Basic Rate Rs.2500/- includes foam, marble pebbles & round wooden bucket )

: 21:

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**B) Flooring ,False Ceiling & Painting work**

**1) Gypsum Board False Ceiling :** Providing & fixing in position step down Gyp board false ceiling using Gypsum India Ltd. frame work which include g.i.perimeter / intermediate channel ,suspenders ,g.i. cleats steel expansion fastener fixed to RCC ceiling, portion in grid pattern as per manufacturers instructions. 12.5 mm thick Gypsum board sheets are fitted to the g.i.frame work with 4" high POP molding all around Rate to include 2 coats of plastic emulsion paint over a coat of primer with necessary surface preparation & also opening for electrical fittings & fixtures., Access doors for cassette & split a.c., Speaker, Fire alarms gadgets, cctv camera gadgets as per the requirements for A.C. purpose to be provided at intervals for maintenance purposes. Entire work to be carried out as per manufacturer's instructions.

**2) Armstrong ceiling :** Providing & fixing in position 2'x2' Armstrong false ceiling using anodized alum. frame work which include g.i.perimeter / intermediate channel ,suspenders ,g.i. cleats steel expansion fastener fixed to RCC ceiling, portion in grid pattern as per manufacturers instructions. 12 mm thick 2'x2' square panel of Armstrong make are placed over g.i.frame work & also opening for electrical fittings & fixtures., Access doors for cassette & split a.c., Speaker, Fire alarms gadgets, cctv camera gadgets as per the requirements for A.C. purpose to be provided at intervals for maintenance purposes. Entire work to be carried out as per manufacturer's instructions.

**3) Vitrified tile flooring & skirting :** Providing & fixing Johnson ,Asian / Nitco make 800mm x 800mm Vitrified tile flooring & 4" high skirting (Basic rate is Rs.100 /- Sft including GST ) of approved shade & colour in required position and pattern as directed by Architect and as per drawing Tiles are to fitted after removing the existing mosaic flooring in required position and pattern as directed by Architect and as per drawing, laid on a bed of minimum 20mm to 30mm of cement mortar 1:4 including neat cement float, pointing, filling the joints with white cement with approved coloured pigments, curing and filling complete upto the satisfaction of the Architect .Rate is inclusive of skirting 4 " high with single coat plaster of 1:4 Skirting to be fitted to be fitted on cement paste including neat cement float, pointing, filling up the joints with white cement with approved coloured pigments, curing and filling complete upto the satisfaction of the architect. & single coat plaster 1:4

**4) Roller blinds :** Providing & fixing Full widow width Roller blinds of heavy quality fabric & of approved colour & shade ( Vista/Mac/ Aeroflex make) fitted as per Manufacturers instructions including its fittings & fixtures

**5) POP Punning :** Providing & applying 12mm thick POP leveling in line & level on the wall & ceiling surface in workmanship like manner Etc. complete.

**6) Plastic Emulsion Paint:** Applying 2 coats of plastic emulsion paint of Asian / Nerolac make to walls & ceiling over a coat of primer with necessary surface preparation with pop / Birla ,putty etc. complete in workmanship like manner.

**7) Synthetic Enamel painting:** Providing & applying 2 coats of enamel paint over a coat of red oxide/ anti rust primer to steel cabinets , steel cupboards Slotted angle racks & wooden surfaces etc. .with necessary surface preparation scrapping etc. .

**8) Texture paint :** Applying 2 coats Texture paint of Asian / Nerolac make to walls over a coat primer with necessary surface preparation with pop

**9) Kitchen Platform :** Constructing 27" wide 20mm granite Galaxy Black Granite top L type top\_platform sandwich between single polish kadapa stone with single bowl s/s sink of size 18" x 21" ( Nirali make) and Jaguar make s/s long head 2turn tap with s/s flange behind. Platform made out with both side polish kadapa stone verticals duly embedded in walls & floor. Platform shall also have 4" high granite fascia in the front and both side polish 2nos kadapa shelves as per the locations & instructions.

**Rate to include :- a)** Providing & fixing 2'x2' vitrified tile flooring below the platform. Flooring is fitted over the cement sand bedding 1:4 and cement slurry & joints are fill up with white cement **b)** Raised platform for New heavy duty PVC Nahani trap with its connection of Prince make waterproofing below on cement sand mortar.1:3 **c)** 6" wide projected Marble shelves of size 6" x 18" just below the sink for keeping Liquid soap, harpic ,detol etc. **d)** 2 Coats of Plastic emulsion paint below the platform where wall tiles are not fitted and also above the platform where top of the wall ties are fitted including Birla putty surface preparation

:22:

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## **B) ELECTRICAL WORK**

### **1) Main Distribution Board with MCB & Isolators**

Supply Installation, Testing & commissioning of Distribution Boards complete with MCBs /Isolators / Bus bars and interconnections. No fabricated DBs shall be allowed .Only DBs with specified makes as the list of materials shall be used ( DOUBLE DOOR IP42)

#### **1) ( Lighting D.B.)**

TPN 4 way as follows

Incomer 25 A / 100A / 4PELCB ----> 1No

Outgoing 10A / 16A / 20 A SPMCBs-> 12 Nos

#### **2) ( A.C. D.B.)**

SPN as follows

Incomer 40A /2PELCB /100A -> 1No

Outgoing 10A SPMCBs --> 8 Nos

#### **3) (UPS DB)**

SPN as follows

Incomer 40 A DPMCB ( 1No

Outgoing 10A/16 A SPMCBs-( 6Nos

### **2) Cables with Lugs.**

Supply and installation of Aluminium /copper armoured cabled fixed to walls, ceiling or laid in trench / duct as follows

a) 4 core 6sqmm Armoured copper cable with bare 12 swg. G.I..earth wire with copper lugs

b) 3 core 10 sqmm Armoured Copper cable with bare 12 swg. G.I.earth wire ( For UPS ) with copper lugs

c) 2core 6sqmm Armoured Copper cable with bare 12 swg. G.I.earth wire with copper lugs

### **3) Computer Point wiring with Lan Cabling & Raceways and raw power point :**

Providing Computer Socket point wiring for a cluster of 3 Nos. 6 A socket outlets on below work station on 8module plate & 1 No.16 A SP switch with indicator above workstation for Computer point from UPS DB using 3 x 2.5sq. mm. PVC insulated copper conductor wires in under floor conduit. With 2.5 Sqmm x2 wire & 1.5 sq.mm as earth wire & Max. 4 Nos. clusters to be connected on same circuit. Switch and sockets to be mounted on PVC boards on partitions of furniture or on hot dipped GI boxes concealed in wall with interconnections complete as per finals approval of Architect / Consultant  
25mm dia. Rigid medium guage PVC conduits to be used for wiring from floor junction box to power points on partitions./wall.  
Rate to include :-

CAT-6 + 4 pair LAN cable ( D Link make with 0.5sq. mm. Copper conductor in under floor trunking & through partition of cabins / cubicles in a 25mm rigid medium guage PVC conduit of 25mm dia. ISI mark with complete accessories upto modem jack for computers including RJ-45 I/O outlets with face plates, Cat-6+ E mounting chords 2 Mtr.of Dlink make with required accessories and mounting PVC surface box for computers to be fixed on partitions of cabins & cubicles. And also crimping from computer point to the main server..Also supply & installation of under floor ALUM. 2way Race way of size 80 x 40 mm 1.6mm thick Raceways to be installed after cutting existing flooring & redo the same with matching vitrified tile flooring in workmanship like manner including the sand ,cement etc and also supply & installation of 14 SWG G.I. junction boxes of size 300 x 300 x 50mm / 600 x600 x50mm as per location & instructions with s/s mat finish Cover

Also Providing wiring for Raw power 5 pin 6 A switch socket outlet from Main DB to the primary point using 2.5sq. mm. x & 1.5sqmm as earth wire circuit Copper conductor wires in under floor conduit up to 6 A socket outlet mounted on PVC board complete with 6 A single pole switch of approved make on partitions of cubicles / cabin / wall, above table top areas per the approval of the Architect. Max. 4 points to be looped in one circuit 2.5sq. mm. x 2 & 1.5sqmm as earth wire 25mm dia. Rigid 16 gauge PVC conduits to be used for wiring under from floor junction box to power points on partitions / wall. Make MDS Crabtree

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**Lighting Points**

**1) Temporary Wiring :**

Providing & testing commissioning of Temporary wiring / lan cabling & Telephone wiring with necessary connections etc. complete

During the progress of work till the completion and handing over the project to NIA MROIII

**2) Primary light point wiring**

Supplying ,installation ,testing & commissioning of Light Point wiring using 2 Nos of 2.5 sqmm & 1no1.5 sqmm circuit wire through of 25/20mm PVC conduit with necessary accessories. All wires below the false ceiling must be concealed. Rate quoted must include the cost of switches ,concealed m.s outlet box, face plate and required accessories etc.  
( Make MK/ ANCHOR ROMA /NORTH WEST)i)

**3) Secondary Light point wiring**

...do .. as item no.2 above but secondary light points are looped from single primary point i.e.on sigle point maximum 3 light will be looped together.

**4) Call Bell with point wiring :**

P & F bell point wiring using 3 x 1.5 sqmm in casing capping patty with bell point with bell push & bell buzzer with indicator.

**5) 12" dia Exhaust fan , 48" dia Ceiling fan & 1x40w side choke LED tube light fitting with point wiring :**

- a) Supply, installation ,testing &commissioning of 12" dia frame type exhaust fan 230 v single phase with fan point wiring using 2 Nos of 2.5 sqmm & 1no1.5 sqmm circuit wire through of 25/20mm PVC conduit with necessary accessories
- b) Supply, installation ,testing &commissioning of 48" dia Ceiling fan with 600 w electronic regulators suspended from ceiling on m.s.rod with ball & socket arrangement.. Rate to include necessary fan hook arrangement with anchor fastner and necessary civil work in workmanship like manner.
- c) Supply, installation ,testing &commissioning of 18" dia wall mounting fan of Crompton make with 6A point wiring
- d) Supply, installation ,testing &commissioning of 1 x40 w side choke LED tube light fittings with copper ballast with complete switch connections

**6) 15A Power point wiring :**

P & F 15 A power point wiring using 2 x 4 sqmm in 1no1.5 sqmm circuit wire through of 25/20mm PVC conduit from power D.B. including earthing & circuit.

**7) 6 A Plug point wiring :**

Providing wiring for 5 pin 6 A switch socket outlet from Main DB to the primary point using 3 x 2.5sq. mm. Copper conductor wires in underfloor conduit upto 6 A socket outlet mounted on concealed m.s.outlets complete with 6 A single pole switch of approved make on partitions of cubicles / cabin / wall, above table top areas per the approval of the Architect. Max. 6 points to be looped in one circuit 25mm dia. rigid medium guage PVC conduits to be used for wiring from floor junction box to power points on partitions.

**8) 5/15 plug pont wiring**

Providing wiring for 5/15 A switch socket outlet from Main DB using 3 x 2.5sq. mm. PVC insulated copper wires upto 5/15 A socket outlet in underfloor trunking / rigid PVC conduit of 25mm dia. medium gauge ISI concealed in wall or & through partition of cubicles with 5/15 single pole switch & socket mounted on concealed m.s.outlets complete

**9) A.C. Point wiring :**

Providing & fixing a.c.point wiring with 20A ray Rolled Socket ( industrial Type) 20 ASPMCB in enclosure of ISI make including plug top . rate is inclusive of cable of 4core x2sqmm from main D.B. to a.c.point including brass cable glands



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**Light Fittings & Fixture :**

Supply, installation, testing & commissioning of light fixture of their standard accessories and complete with connections '

1) 2 x 36 w LED 2' x 2' LED Light Fixtures consists of Electronic Ballast Crescent Recess mounted Mirror optic fitting with paralite louvers of Wipro / Crompton make with 4nos LED 36w lamps suspended from ceiling on m.s. rod with ball & socket arrangement.

2) 2 x 18 W Recess mounted down lighter fittings 8"x8" Low depth square down lighter with satin finish reflector and ribbed diffuser with 2 nos 18w LED lamps and required accessories.

**Telephone point wiring :**

Supply, installation, testing and commissioning of telephone point RJ 11 Socket one module plate & module box to be fixed on PVC board for cubicles / cabins. / Wall Make : Finolex / Delton / Polycab

(a) Using 20 pair 0.5 sq.mm telephone Armored cable under floor trunking / 25mm dia. Medium gauge PVC conduit PVC conduit on wall / partitions of cabins / cubicles with complete accessories

(b) Using 10 pair 0.5sq. mm Telephone Armored cable under floor trunking / 25mm dia Medium gauge PVC conduit on wall / partitions of cabins / cubicles with complete accessories

(c) Using 5 pair 0.5sqmm telephone cable from EPABX / Junction box to independent socket outlet

(d) Supply, installation, testing and commissioning of 50 pair krone type telephone tag-block and 100 pair module with termination & crimping etc. complete. and terminating the cable into 20 pair Tag block tag block. & crimping etc. complete.

**Rate to include all connectivity, crimping to all equipments including I Phone**

**Fire Alarm System work:**

**4 Zone Control panel :** Supplying, Installation, connection, testing & commissioning of Conventional Fire Control panel FOUR Zone of make-Ravel. Rate to include integrating to main Fire Room in building as per manufacturer's instructions.

**Optical Control panel with base :** Supplying, Installation, connection, testing & commissioning the following :SMOKE DETECTOR ( Optical type system Sensor/ Apollo 65 series make)

**Convention Hooters :** Complete with wall mounting arrangement. Electronic hooter with flasher ( 30M range) in suitable box ( Approved Brand as per BIS ) The LED of the above detectors should constantly blink when system is ON and should constantly glow when actuated.

**Convention manual call point complete with back box:** Supplying, Installation, Connection, testing and commissioning of MANUAL CALL pushes with hammer in suitable M.S .Box as required ( as per relevant BIS)

**2 core 1.5sqmm armoured copper cable :** Providing & fixing wiring of cu. armoured cable of Polycab make fixed on the ceiling/wall from floor panel to detectors including fixing of boxes in surface /recesses as per requirements.

:25:

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**OFFICERS ,GENTS & LADIES TOILETS CIVIL,ELECTRICAL & OTHER RELATED WORKS**

**1) Demolition :**

Removing existing window shutters without frame work ,toilet flooring , skirting , wall tiles of entire proposed toilet area ,plastering, loose electrical wires ,toilet fittings & fixture And all other related works which are mentioned in the enclosed tender items and carting away the debris away from the premises ..

**2) Plastering to walls for fixing of wall tiles :**

Applying 20mm cement plaster in single coat in cement mortar 1:4 waterproofing compound including curing & p finish wherever required to receive the paint as per the directions of the Architect complete  
Removing existing loose plaster of the wall and providing & applying 2coats of plaster in cement mortar 1: 4 with waterproofing compound of Roffe liquid and finish with birla white cement putty to receive the paint.

**3) 6" thick Brick Masonary wall :**

Constructing 6" thick brick or 100 mm thick hollow concrete siporex masonry wall with locally best available conventional I.S type bricks in cement mortar 1:4 including raking out joints & watering complete with plastering on both sides 20mm cement plaster in two coats in cement mortar 1:6 including curing & Birla Putty finish wherever required as per the directions of the Architect complete

**4) Polymer plaster to structural members in 3 toilets**

- a) Chipping off loose cover of the concrete in damaged areas or honeycombed areas and exposing the reinforcement
- b) Applying two coats of Alkaline rust converting primer, Fevert on the reinforcement bars, including cleaning the reinforcement ,  
wire brushing to remove loose rust spalls with time intervals of one hour between the coat.
- c) Providing additional steel in distress areas including drilling & fixing it in desire position.
- d) Applying IPNET-RB to the Reinforcement in two coats with time interval of minimum 4 hours between each coat . 1st coat to be  
applied after 10 minutes of application of dry quartz sand over second coat of IPNET-RB when freshly applied.
- f) Applying epoxy latex based bonding agent EL Monobond on concrete as well as reinforcement before application of mortar.
- g) Applying polymer modified mortar in CM ( 1:3) With river sand with addition of 15% Monobond by weight of cement per bag.  
In layers not more than 15mm in one application of mortar including curing etc.complete.
- g) Applying polymer modified plaster with addition of 10% polymer in creating smooth surfaces.
- h) Erecting scaffolding / Props to carry out the above Polymer Plaster work

**5) Waterproofing of toilet flooring:**

Removing the toilet flooring up to the slab level and applying 2 coats of POLY-EK-WP chemicals of Sunanda chemicals

- a) The RCC slab top should be cleaned of all foreign material and shall be hacked to removed loose scaling and roughened . Cleaned with wire brushed and washed thoroughly with water.
- b) The brick bat of required size and shape are then laid to proper level and shape max.100 mm thick over cement bedding of min. 30 to 50mm thickness in cm 1:4 with waterproofing compound. This is so laid should be allowed to set for atleast 3 days and kept under colour water if any seepage is there at this stage should be treated again.
- c) The finishing layer shall be of cement mortar 1:3 with waterproofing compound laid to desirous slope with min. thickness of 25mm
- d) The treatments shall be continued along the inner side of wall upto a height of 250mm The average thickness of the treatment shall be 115mm with a minimum of 50mm around the nahani trap.
- e) The flooring shall tested for water tightness after the treatment is completed by ponding water to ascertain the water tightness of the treatment.

**6) Injection Grouting in structural members in toilets**

- a) Drilling the holes in the RCC members where loose concrete is found upto 2" inside the concrete .
- b) Providing & fixing PVC nozzles inside the holes.
- c) External periphery of the hoies to be sealed by Polymer modified mortar
- d) Inject the cement slurry with waterproofing /polymer compound inside of RCC members
- e) After next day the nozzles upto the slab level to be cut gently.

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**7) 18"x18" anti skid tile flooring in Toilets :**

P & F bell, kajaria, johnson 12" x12" anti skid tile flooring (basic rate Rs.100 /- Sft) ISI mark of approved shade & colour in toilet areas in required position and pattern as directed by Architect and as per drawing, laid on a bed of minimum 20mm to 30mm of cement mortar 1:4 including neat cement float, pointing, filling the joints with white cement with approved coloured pigments, curing and filling complete upto the satisfaction of the Architect

**8) Wall tiles dado of 12" x18" :**

P & F Glazed tiles on walls ( Basic rate Rs.85/-Sft ) on wall of regency, bell, kajaria, Johnson make of approved shade & colour in required position and pattern as directed by Architect tiles to be fitted with cement paste including neat cement float, pointing, filling up the joints with white cement with approved coloured pigments, curing and filling complete upto the satisfaction of the architect. Rate is inclusive of single coat plaster 1:4 on wall behind the new wall tile dado.

**9) Laminated Flush door shutter :**

Providing and fixing 40mm thick door shutters finished with 1mm thick laminate on either side of approved shade and colour .Edges are lipped with t.w.beading all around of size 12mm x 40mm to be finish with 2 coats of french polish and using railway type brass heavy hinges, 6 Lever lock, door stop, heavy duty door closure etc. to the satisfaction of the Architect

**10) Bakelite door shutter with step down baroda green marble door frame in toilets**

Providing & fixing toilet door shutter using Bakelite panel of approved color , shade & make fitted in powder coated aluminum framework of approved shade & color with necessary hinges, handles ,latches etc.

Rate to include Providing & fixing 20mm thick step down Baroda Green Marble door frame with door sill to the width of wall thickness with edge molding / edge polish on either side fitted on cement paste and necessary cement sand plaster on walls & filling the joints with white cement with approved colored pigments, curing and filling complete up to the satisfaction of the architect.

**11) Louvre windows with step down baroda green marble window frame in toilets**

Providing & fixing 20mm thick step down Baroda Green Marble door frame with window sill to the width of wall thickness with edge molding / edge polish on either side fitted on cement paste and necessary cement sand plaster on walls & filling the joints with white cement with approved colored pigments, curing and filling complete up to the satisfaction of the architect. Rate to include powder coated aluminum adjustable louvre window frame with auto locking system using 4mm bajari glass Also making provision for Exhaust fan within the framework by fixing 12mm thick plywood with opening of size of exhaust fan in workmanship like manner upto the satisfaction of the architect.

**12) Concealed plumbing / under floor / external drainage work including Nahani Trap with cover :**

Concealed / open type plumbing work for **w.c., urinal & wash basin** by fixing plumbing and sanitation material concealed and flushing pipes of all sizes alongwith waste and soil water line PVC pipes with fittings, chasing in the wall, flooring, ceiling restoring the same to all types of Cocks ( Stop Cock , Sink cock etc) plumbing work as per instructions and directions of architect. Providing, laying and fixing heavy type CPVC pipe for water supply with screwed sockets, joints and necessary CPVC fittings such as sockets, check nuts, elbows, bends, tees, reduces, enlargers, plugs, clamps etc. Working the all waste, soil and water pipelines with FRP tape, Husain cloth, smoke tests, waste pipe to be connected to Heavy duty Prince make New Nahani trap & existing down take waste and water supply pipe to toilets as well & CPVC water supply line inside/ outside the building including the scaffolding for external drainage connectivity to the existing drainage pipe line in workmanship like manner.

**13)Toilet Accessories for 3 toilets :**

Jaguar make Toilet paper holder , jet spray, towel ring 6" dia, towel rod 24" long, soap dish, push type soap dispenser, tubler holder, double coat hook, glass shelf 18" above wash hand basin, Tissue dispenser and automatic air freshener machine.

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**14) European w.c. / Asian w.c. with Auto Flushing tank including waterproofing work to floor :**

Providing & Fixing European type China ware pedestal type water closet Parry ware / Hind ware make Asian w.c. pan including

P or S trap of approved deluxe colour with approved colored PVC seat & lid with chromium plated brass hinges and rubber buffers including cast iron soil and vent pipes up to the outside face of the wall 1:2:4 cement concrete with 10 litre commander or equivalent make low level flushing cistern tank with fittings, chromium plated working handle inlet pipe with stop tap, brackets for fixing cistern 32mm dia stainless steel flush pipe with fittings and clamps, 20mm dia g.i. overflow pipe with special mosquito proof couplings, painting of exposed pipes, cutting making good of walls complete upto the satisfaction of the architect.

**15) Jumbo size flat back urinals with both side polish Baroda green marble partition :**

Providing & Fixing European type China ware **WALL HUNGJUMBO SIZE FLAT BACK URINALS** of deluxe colour Hind ware / Parry ware make including fittings, spreader, stop cock, waste coupling and making good the wall and soil / waste pipe connection, etc. complete to the satisfaction of the Architect. Rate is also inclusive of Providing & fixing 20mm thick both side polish Baroda green marble urinal partition with edge moulding / edge polish fitted on cement paste and necessary cement sand plaster on walls & filling the joints with white cement with approved coloured pigments, curing and filling complete upto the satisfaction of the architect

**16) Granite top wash hand basin counter :**

Providing and Fixing colour glazed oval shape vitreous china Parry ware / Hind ware make wash hand basin 22" x 16" size in Jet Black granite top counter with edge moulding including cold water taps of Jaguar make, brackets, rubber plug and chromium plated brass chain, stop cock, pillar cock, c.p. connector waste pipe and necessary pipe connections including lead waste pipe and tap up to the outside face of the wall complete with cutting and making good of wall, oil painting of exposed pipes and fittings and as per instructions and satisfaction of the architect. Wash basin to sandwich in one side polish kadapa stone slab.

**17) Toilet Accessories for 3 toilets :**

Jaguar make Toilet paper holder, jet spray, towel ring 6" dia, towel rod 24" long, soap dish, push type soap dispenser, tubler holder, double coat hook, glass shelf 18" above wash hand basin, Tissue dispenser and automatic air freshener machine.

**18) Mirror paneling in front of wash basin :**

Providing and Fixing 6mm thick Decorative mirror of Modi guard float glass, pilkington make with polish edges fitted to the front wall of the basin over 40 mm projected s/s studs on 4 sides in workmanship like manner.

**19) 12" dia Exhaust fan / 48" dia ceiling fan & 4' long tube light patty fitting with point wiring :**

- a) Supply, installation, testing & commissioning of 12" dia frame type exhaust fan 230 v single phase with fan point wiring using 2 Nos of 2.5 sqmm & 1no 1.5 sqmm circuit wire through of 25/20mm PVC conduit with necessary accessories
- b) Supply, installation, testing & commissioning of 48" dia Ceiling fan with 600 w electronic regulators suspended from ceiling on m.s.rod with ball & socket arrangement.. Rate to include necessary fan hook arrangement with anchor fastner and necessary civil work in workmanship like manner.
- c) Supply, installation, testing & commissioning of 1 x40 w side choke LED tube light fittings with copper ballast with complete switch connections

**20) Synthetic Enamel painting work above tiles:**

Providing & applying 2 coats of enamel paint of Asian / Nerolac over a coat of cement primer to wall above the wall tiles & ceiling with scrapping necessary surface preparation with Birla putty etc. complete.

: 28: Seal & Signature of the contractor

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Architect

## **: SALVAGE ITEMS:**

: 29 :

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Rashmin Bhandare Architect		
Proposed Interior Refurbishing work of Oriental house ( East wing) ,7,J. Tata Road, Churchgate, Mumbai <b>Note :</b> Contractor is requested to visit & inspect the following salvage items carefully before quoting the following salvage items.		
Item	Particulars	Amount ( Rs.)
<b>A</b>	<b>On Second Floor</b>	
1	Pedestal Fan / wall fans	
2	2'x2'Tube light fitting with louvre And single /double and wall fittings	
3	Ceiling light in false ceiling	
4	Four /Two Drawers cabinet	
5	Writing table with side table	
6	Revolving Chairs with & without hand rest	
7	Table with Side table and rear side credenza	
8	Wooden storages of various deep & heights	
9	Veneer Partitions & Paneling	
10	Sofa ( single / double /three seater	
11.	Window, Split A.C.. and its accessories	
<b>B</b>	<b>General</b>	
a	Flush doors ( both side laminate/ full glazed )	
b	Old partitions with t.w. frame works, vertical blinds, electrical wires,	
c.	False ceiling switches with switch boards, false ceiling frame work, flush doors workstations with low height partitions & storages in open office tube light single patty fittings, loose furniture	

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## : REFERENCE DRAWING :

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:31 : Seal & Signature of the contractor

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## : BILL OF QUANTITIES :

:32:Seal & Signature of the contractor

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<b>RASHMIN BHANDARE ARCHITECT</b>					
TENDER FOR INTERIOR WORK OF RESTRUCTING OF MRO 1 ,AT ORIENTAL HOUSE,2ND FLOOR ( EAST WING )					
7, J.TATA ROAD, CHURCHGATE,MUMBAI -400 020					
Page 1/5					
SrNo	PARTICULARS	QTY	UNIT	RATE (RS.)	AMT. ( RS.)
<b>A</b>	<b>Furniture ,Partition and other related works</b>				
1	Demolition which include removing loose electrical wiring ,toilet wall tiles ,fittings & fixtures etc also carting away the debries .rate also to include Liasonsng work for getting permission from BMC / Mathadi union/. & other statutory bodies.	LS			
2	<b>Full Height partition</b>				
a	Both side laminate finish with door ,fittings & fixtures	761	SFT		
b	One side laminate / partly glazed finish with door ,fittings & fixtures	653	SFT		
c	One side laminate / Texture paint finish with door ,fittings & fixtures	374	SFT		
d	Fully glazed with door using 12mm toughen glass with itching pattern of garware with fittings & fixtures	617	SFT		
3	<b>RM's</b> table of size 3' x6' & side table :1'-6" x 3'-6" table attached to partition Table top ,12mm thick glass top with polish moulded edges	5	No		
4	<b>Mgr's</b> table :2'6"x5' & side table :1'-4" x 3'-0" with attached 4' high partition	5	No		
5	<b>Dym's</b> table :2'6" x4'-9" & side table :1'-4" x 3'-0" with attached 4' high partition	15	No		
6	<b>AO's</b> table :2'3" x4'-6" & side table :1'-4" x 3'-0" with attached 4' high partition	20	No		
7	<b>Sub staff / RC</b> table :2' x4' & side table :1'-4" x 3'-0" with attached 4' high partition	2	No		
8	<b>Meeting Room Table</b>				
	24" dia 12mm thick toughen glass top with side polish rested om 50mm dia s/s pipe supports with bracing and 12mm thk.16 gauge 10mm thick s/s base plate	2	NOS		
9	<b>Low Height partition</b>				
a	One side laminate / partly glazed with t.w.beadng all around	158	SFT		
b	One side laminate / texture paint finish partly glazed with t.w.beadng all around	140	SFT		
c	Fully glazed using 12mm toughen glass with itching pattern of garware film without t.w.beadng all around	320	SFT		
10	Low height & Full height storages	2210	SFT		
11	<b>Wall Panelling</b>				
a	Full Laminate with t.w.beadng all around	437	SFT		
b	One side laminate / Texture paint finish with t.w.beadng all around	320	SFT		
c	Paint finish Bisen board panelling with alum.frame work	185	SFT		
11.a	Pr& F Abstract Painting photo frame of 12"x12" ,18"x18" , 18"x24" Three Each	9	NOS		
11.b	Supplying Artificial plant upto 4'high in wooden pots	5	NOS		

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<b>RASHMIN BHANDARE ARCHITECT</b>					
ESTIMATE FOR INTERIOR WORK OF RESTRUCTING OF MRO 1 ,AT ORIENTAL HOUSE,2ND FLOOR ( EAST WING )					
7, J.TATA ROAD, CHURCHGATE,MUMBAI -400 020					
					<b>Page 2/5</b>
SrNo	PARTICULARS	QTY	UNIT	RATE (RS.)	3172462.00
12	12 mm Thick glass top Centre Table / Corner table	4	NOS		
13	Single seater Sofa	2	NOS		
14	Heavy duty 2 seater sofa	4	NOS		
15	Fully Glazed Entrance partition with door using 12mm toughen glass,co.Logo with itching pattern of Garware film with floor spring & other heavyduty fittings.	28	SFT		
16	Revolving chairs for entire staff / visitors & also in Meeting Rooms ( Low back ,Mid back ,High back , High back with head rest ) <b>(Approved make only)</b>				
	High back with head rest for RM	5	NO		
	Visitors for RM	15	NO		
	Medium back for visitor for Mgr/Dym	25	NO		
	Visitors for AM /AO ( Low back )	38	NO		
	Low back for Assts /RC & sub staff ( low back )	23	NO		
	Medium back for meeting room	8	NO		
17	Repairs to Existing Alum. windows	248	SFT		
<b>Total of Furniture ,Partition and other related works</b>					
<b>B</b>	<b>Flooring ,False ceiling &amp; Painting work</b>				
1	Gypsum board false ceiling	3740	SFT		
2	2'x2' Armstrong false ceiling	1580	SFT		
3	2' x2' vitrafied flooring & 4" high skirting	5540	SFT		
4	Roller blinds	248	SFT		
6	Plastic emulsion paint to walls & ceiling	5270	SFT		
7	Enamel paint to wooden surafaces	860	SFT		
<b>Total of Section B ( Flooring, False ceiling &amp; Painting works ) Rs.</b>					

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<b>RASHMIN BHANDARE ARCHITECT</b> <b>TENDER FOR INTERIOR WORK OF RESTRUCTING OF MRO 1 ,AT ORIENTAL HOUSE,2ND FLOOR ( EAST WING )</b> <b>7, J.TATA ROAD, CHURCHGATE,MUMBAI -400 020</b>					
<b>Page 3/5</b>					
SrNo	PARTICULARS	QTY	UNIT	RATE (RS.)	AMT. ( RS.)
<b>C</b>	<b>Officers ,Gents &amp; Ladies Toilets civil work</b>				
1	Removing existing loose concrete over the structural members	284	SFT		
2	Polymer treatment to existing structural members including waterproof plaster	284	SFT		
3	Removing existing loose plaster over the brick masonry work & carry out cement plaster 1:4	185	SFT		
4	Applying 1: 4 plastering behind the wall tiles	1850	SFT		
5	Constructing 6" brick wall with both side single coat plastering to receive tiles	167	SFT		
6	18" x12" glazed wall tiles including plastering	1850	SFT		
7	Brick bat coba waterproofing to toilets	320	SFT		
8	12"x 12" anti skid tile flooring to toilets	320	SFT		
9	Bakalite panel shutters in marble framework	7	NOS		
10	Under floor & water supply CPVC Plumbing work for toilets	3	TOILETS		
11	European w.c. with flushing tank	4	NOS		
12	Jumbo urinals with marble partitions	6	NOS		
13	Wash basin counter	14	RFT		
14	Toilet accessories which include jet spray, towel rod, towel rod, paper holder , soap dispenser , coat hooks ,glass shelves etc.	3	NO Toilets		
15	Paneling with mirror fitted over s/s studs	50	SFT		
16	Nahani traps	5	NOS		
	<b>Total of Section C ( Officers , Gents &amp; Ladies Toilets Civil work ) Rs.</b>				
<b>D</b>	<b>Electrical work</b>				
<b>I</b>	<b>Distribution Boards &amp; Cables with Lugs</b>				
1	Lighting / Raw main Distribution Board with MCB	2	NOS		
2	UPS Power Distribution board with MCB	2	NOS		
3	A.C. Distribution Board with MCB	2	NOS		
4	125MCCB BOX ( one in meter room & one in elect. cabin	2	NOS		
5	3.5 Core x 70 sqmm armoured alum cable	41	Mtrs		
6	4core 6 sq.mm armoured cu.cable with Lugs	230	Mtrs		
7	3 core 10 sqmm aoured cu.cable	221	Mtrs		
8	2 core 6sqmm armoured cu.cable for lighting & power	185	Mtrs		
9	20 KVR AFC panel	1	NOS		
10	2 core 1.5 sqmm armoured copper cable for Fire Alarm System work	590	MTRS		
	<b>Total of D.B.&amp; Cables ( Rs.)</b>				

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<b>RASHMIN BHANDARE ARCHITECT</b> <b>TENDER FOR INTERIOR WORK OF RESTRUCTING OF MRO 1 ,AT ORIENTAL HOUSE,2ND FLOOR ( EAST WING )</b> <b>7, J.TATA ROAD, CHURCHGATE,MUMBAI -400 020</b>					
<b>Page 4/5</b>					
SrNo	PARTICULARS	QTY	UNIT	RATE (RS.)	Amt.( Rs.)
<b>II</b>	<b>Light Points &amp; Computer points</b>				
1	Computer points include under floor 3nos separate Alum raceways ( Telephone Lan and raw point wiring ) with Lan Cabling & connectivity	47	NOS		
2	Primary points	32	NOS		
3	Secondary points	50	NOS		
4	Half socket point on lighting boards	23	NOS		
5	Point wiring for UPS points	5	NOS		
6	15 Plug point wiring	14	NOS		
7	6APlug point wiring	16	NOS		
8	5/15 plug point wiring	18	NOS		
	<b>Total of Lighting ,Power &amp; UPS and Computer points</b>				
<b>III</b>	<b>Fittings &amp; Fixtures</b>				
1	2 x 36 w LED 2'x2' Mirror optic fixtures	23	NOS		
2	2 x18w LED recess mounted down lighter	50	NOS		
3	1x40 w side choke tube light fitting	14	NOS		
4	Zero watts continuous strip lighting in False ceilig & around the photoframes	284	RFT		
5	100pair tag block	1	NOS		
6	Telephone pointswith 20 pair wires	5	NOS		
7	Telephone points with 10 pair wires	5	NOS		
8	Telephone points with 5 pair wires	30	NOS		
	<b>Total of Fittings &amp; fixtures Rs.</b>				
	<b>Total of Section D ( Electrical work Section I to III ) Rs.</b>				
<b>E</b>	<b>Air conditioning work</b>				
1	Supply, Installation & commissioning of split/cassette a.c. with all accessories ,fittings & m.s. fabrication work				
a	1Tr Split a.c.	7	NOS		
b	2.5Tr Split cassette a.c	5	NOS		
c	A.C. point wiring	12	NOS		
	<b>Total of Section E ( Air conditioning work ) Rs.</b>				

:36: Seal & Signature of the contractor

**RASHMIN BHANDARE ARCHITECT**

TENDER FOR INTERIOR WORK OF RESTRUCTING OF MRO 1 ,AT ORIENTAL HOUSE,2ND FLOOR ( EAST WING )  
7, J.TATA ROAD, CHURCHGATE,MUMBAI -400 020

**Page 5/5**

	<b>SUMMARY</b>	Amount (Rs.)
<b>A</b>	Furniture ,partition & other related works	
<b>B</b>	Flooring ,false ceiling & painting work	
<b>C</b>	Officers, Gents & Ladies Toilets Civil work	
<b>D</b>	Electrical work	
<b>E</b>	Air conditioning work	
	<b>TOTAL AMOUNT ( RS.)</b>	
	Less: Salvage ( Rs.)	
	<b><u>GRAND TOTAL AMOUNT :</u></b> ( Rupees .....only) ( CGST & MGST will be extra as applicable )	

;37:Seal & Signature of the contractor

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