



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

TCN – 03

Ref: PSER:SCT:RKL-C1776:TCN-03

Date: 25-10-2016

Sub	Tender change notice (TCN) 03	
Job	Design, Supply/Delivery Including Transportation, Unloading, Storage At Site, Erection, Assembly Including Required Civil Works And Handing Over To BHEL Of Removable/Re Erectable Type Pre Engineered, Pre Fabricated Office Building With Associated Civil Works Including Foundations, Toilets, Septic Tank, Soak Pit, Water Tank, Modular Furniture Etc, Security Fencing For 1X250MW Rourkela NSPCL Project, Odisha.	
Ref	1.0	Tender No. PSER:SCT: RKL-C1776:16
	2.0	BHEL's NIT, vide reference no PSER:SCT:RKL:C1776:16:5260 Date: 13/10/16
	3.0	BHEL's TCN-01 ref PSER:SCT:RKL-C1776:TCN-01 dated 15/10/16
	4.0	BHEL's TCN-02 ref PSER:SCT:RKL-C1776:TCN-02 dated 24/10/16
	5.0	All other pertinent issues till date.

With reference to above, following points/ documents, relevant to tender, may please be noted and complied with while submitting offer.

1.0 Reply to Bidder's clarification is attached as per Annexure-A to TCN-03.

2.0 Modification /changes in respective clauses of RKL-C1776-VOL-1F-TECH SPEC document (Technical Specification) is given in Annexure-B to TCN-03. Accordingly revised RKL-C1776-VOL-1F-TECH SPEC-R01 is being issued.

However, Bidders are requested to refer to both Annexure-B to TCN -03 as well as revised tech spec RKL-C1776-VOL-1F-TECH SPEC-R01 before quoting.

3.0 Revised 'No deviation certificate' as per enclosed Annexure-2. Bidder shall submit no deviation certificate as per enclosed format only.

4.0 All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,
for BHARAT HEAVY ELECTRICALS LTD

DY MGR (SCT)

Encl : As above.

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION, DJ-9/1, SECTOR-II, SALT LAKE CITY, KOLKATA - 700 091

फैक्स/Fax : (033) 23211960

फोन/Phone : बोर्ड/EPABX : 23211691, 23211798, 23211796

FORMAT FOR NO DEVIATION CERTIFICATE
(To be submitted in the bidder's letter head)

BHARAT HEAVY ELECTRICALS LIMITED,
Power Sector - Eastern Region,
Plot no 9/1, DJ Block, Sector – II, Salt Lake City,
Kolkata – 700 091

Sub	No Deviation Certificate.	
Job	Design, Supply/Delivery Including Transportation, Unloading, Storage At Site, Erection, Assembly Including Required Civil Works And Handing Over To BHEL Of Removable/Re Erectable Type Pre Engineered, Pre Fabricated Office Building With Associated Civil Works Including Foundations, Toilets, Septic Tank, Soak Pit, Water Tank, Modular Furniture Etc, Security Fencing For 1X250MW Rourkela NSPCL Project, Odisha.	
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	4.0	BHEL's TCN-02, vide reference no PSER:SCT:RKL:C1776:TCN-02, dated 24/10/16
	5.0	BHEL's TCN-03, vide reference no PSER:SCT:RKL:C1776:TCN-03, dated 25/10/16
	6.0	All other pertinent issues till date.

Dear Sirs,

With reference to above, this is to confirm that as per tender conditions, we have visited site before submission of our offer and noted the job content & site conditions etc. We also confirm that we have not changed/ modified the tender documents as appeared in the website/ issued by you and in case of such observance at any stage, it shall be treated as null and void.

We hereby confirm that we have not taken any deviation from tender clauses together with other references as enumerated in the above referred NIT. We hereby confirm our unqualified acceptance to all terms & conditions, unqualified compliance to technical specification, integrity pact (if applicable) and acceptance to reverse auctioning process.

In the event of observance of any deviation in any part of our offer at a later date whether implicit or explicit, the deviations shall stand null & void.

We confirm to have submitted offer in accordance with tender instructions and as per aforesaid references.

Thanking you,

Yours faithfully,

(Signature, date & seal of authorized
representative of the bidder)

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION DJ-9/1, SECTOR-II, SALT LAKE CITY, KOLKATA - 700 091

फैक्स/Fax : (033) 23211960

फोन/Phone : बोर्ड/EPABX : 23211691, 23211798, 23211796

ANNEXURE A TO TCN-03

Name of Work :		DESIGN, SUPPLY/DELIVERY INCLUDING TRANSPORTATION, UNLOADING, STORAGE AT SITE, ERECTION/ASSEMBLY INCLUDING REQUIRED CIVIL WORKS AND HANDING OVER TO BHEL OF REMOVABLE/RE-ERECTABLE TYPE PRE-ENGINEERED, PRE-FABRICATED OFFICE BUILDING WITH ASSOCIATED CIVIL WORKS INCLUDING FOUNDATIONS, TOILETS/SEPTIC TANK, SODAPIT/WATER TANK, MODULAR FURNITURE ETC, SECURITY FENCING FOR 1X250 W ROURKELA NSPCL PROJECT ODISHA		
(Tender No. PSER/SCT: RKL-C1776:16)				
SL	Reference clause of tender document	Existing provision	Bidder's query	BHEL's clarification
1	VOLUME-IF-CML-REV-00	In Technical Specification Point no. 2.4-ii) Grade of PCC is 1:3:6 & in Footing Drawing it is shown 1:4:8	What should bidder follow?	PCC shall be 1:3:6 as per Technical specification. Drawing has been revised.
2	VOLUME-IF-CML-REV-00	In Technical Specification Point no. 2.4-vi) Thickness of Brick wall 250mm But in Plinth & Footing Cross sectional view at page no. 32 shows 460 mm	What should bidder follow?	Technical specification & Drawing have been revised.
3	VOLUME-IF-CML-REV-00	In Technical Specification Point no. 2.4-viii) Height of RCC wall shall be 600 mm above room GL But in Footing Drawing at page no. 1 it shows 1350 mm	What should bidder follow?	Drawing has been revised.

ANNEXURE B TO TCN-03

JOB:- DESIGN, SUPPLY/DELIVERY INCLUDING TRANSPORTATION, UNLOADING) STORAGE AT SITE, ERECTION/ASSEMBLY INCLUDING REQUIRED CIVIL WORKS AND HANDING OVER TO BHEL OF REMOVABLE/RE-ERECTABLE TYPE PRE-ENGINEERED, PRE-FABRICATED OFFICE BUILDING WITH ASSOCIATED CIVIL WORKS INCLUDING FOUNDATIONS, TOILETS/SEPTIC TANK, SOPAK PIT, WATER TANK, MODULAR FURNITURE ETC, SECURITY FENCING FOR 1X250 W ROURKELA NSPCL PROJECT ODISHA

TENDER NO:-PSER:SCT:RKL-C1776:16

SL	Clause/Point No	Existing Clause	Revised clause
1	SL NO 2.4- CIVIL WORK CL NO -ix	ADDITIONAL CLAUSE	A general layout drawing and a tentative foundation drawing are provided with this tender but bidder should check the design load and other for finalization of drawing. Approved(Vetted) drawing and design should be submitted to BHEL as per RKL-C1776-SO-VOL-1F-CML-R-0.

ANNEXURE B TO TCN-03

JOB:- DESIGN, SUPPLY/DELIVERY INCLUDING TRANSPORTATION, UNLOADING) STORAGE AT SITE, ERECTION/ASSEMBLY INCLUDING REQUIRED CIVIL WORKS AND HANDING OVER TO BHEL OF REMOVABLE/RE-ERECTABLE TYPE PRE-ENGINEERED, PRE-FABRICATED OFFICE BUILDING WITH ASSOCIATED CIVIL WORKS INCLUDING FOUNDATIONS, TOILETS/SEPTIC TANK, SOPAK PIT WATER TANK, MODULAR FURNITURE ETC, SECURITY FENCING FOR 1X250 W ROURKELA NSPCL PROJECT ODISHA

TENDER NO:-PSER:SCT:RKL-C1776:16

SL	Clause/Point No	Existing Clause	Revised clause
3	CL NO 2.5.2 –FALSE CEILING AND PARTITION	<p>False ceiling shall be provided to entire office area including corridors etc excluding toilet block. Frame works made out of anti-corrosive painted GI grid work with 250x6mm thick polymeric panels/ Galvalume panels. If Galvalume panels will be used then Galvalume shall be roll formed from nominal 0.45 mm base metal thickness of minimum yield strength of 550 MPa, coated with an aluminum /zinc alloy i.e. Galvalume, AZ150 (min 150 gm/m2 total on both side), confirms to Australian standard AS1397, Profile sheeting for Galvalume panels shall have</p> <p>1110 mm effective cover width (Panelrib) profile with nominal 3.5 mm deep ribs at pitch of nominal 48 mm center to center distance and these panels are joined together by tongue and groove using self tapping screws. Cut should be made where ever necessary for fixing of electrical fittings.</p> <p>Double side partition made up anti corrosive painted 25x50mm ms and double side paneling with polymeric section of minimum 250x6 mm thick with an air gap of minimum 4mm these panels are joined together by tongue and groove using self tapping screws. Aerocon Panel 50mm thick with proper finish is also acceptable. However before starting of work vendor should approve the above material/drawing from BHEL.</p> <p>All the material shall be manufactured by reputed manufacturer. Necessary material test certificate to be issued by the manufacturer.</p>	<p>False ceiling shall be provided to entire office area including corridors etc excluding toilet block. Frame works made out of anti corrosive painted GI grid work with 250x6mm thick polymeric panels/Bottom runners to be provided below trusses as structural support for galvalume false ceiling panels. If Galvalume panels will be used then Galvalume shall be roll formed from nominal 0.45 mm base metal thickness of minimum yield strength of 550 MPa, coated with an aluminum /zinc alloy i.e. Galvalume, AZ150 (min 150 gm/m2 total on both side), confirms to Australian standard AS1397, Profile sheeting for Galvalume panels shall have 1110 mm effective cover width (Panelrib) profile with nominal 3.5 mm deep ribs at pitch of nominal 48 mm center to center distance and these panels are joined together by tongue and groove using self tapping screws. Cut should be made where ever necessary for fixing of electrical fittings.</p> <p>Double side partition made up anti corrosive painted 25x50mm ms and double side paneling with polymeric section of minimum 250x6 mm thick with an air gap of minimum 4mm these panels are joined together by tongue and groove using self-tapping screws. Aerocon Panel 50mm thick with proper finish is also acceptable. However before starting of work vendor should approve the above material/drawing from BHEL</p> <p>All the material shall be manufactured by reputed manufacturer. Necessary material test certificate to be issued by the manufacturer</p>

ANNEXURE B TO TCN-03

JOB:- DESIGN, SUPPLY/DELIVERY INCLUDING TRANSPORTATION, UNLOADING) STORAGE AT SITE, ERECTION/ASSEMBLY INCLUDING REQUIRED CIVIL WORKS AND HANDING OVER TO BHEL OF MOVABLE/RE ERECTABLE TYPE PRE ENGINEERED, PRE FABRICATED OFFICE BUILDING WITH ASSOCIATED CIVIL WORKS INCLUDING FOUNDATIONS, TOILETS/SEPTIC TANK, SOPAK PIT WATER TANK, MODULAR FURNITURE ETC, SECURITY FENCING FOR 1X250 W ROURKELA NSPCL PROJECT ODISHA

TENDER NO:-PSER:SCT:RKL-C1776:16

SL	Clause/Point No	Existing Clause	Revised clause
4	CL 4.0 (DOORS AND WINDOWS)	Internal doors Polymeric with half paneled smog glass. All external doors with solid core PVC/wooden panel door. All doors to be provided with suitable hydraulic door closures of approved make . Windows shall be provided with aluminum type with the grill and sunshade. However suitable no. of windows shall be provided for enough ventilation & natural light.	Internal doors Polymeric/Aluminum with half paneled smog glass. All doors to be provided with suitable hydraulic door closures of approved make . Windows shall be provided with aluminum type with the grill and sunshade. However suitable no. of windows shall be provided for enough ventilation & natural light.
5	CL NO 5.0(TOILET)	Toilet : 1 No Toilet with 1 EWC , 1 Wash	Common Toilet:1 No Toilet with 1 EWC ,1 INDIAN, 1 Bath Room, 3 Urinals , 2 Stand Basin, Towel Rod, Mirror , Soap Dispenser, Soap liquid Dispenser , 1 No. Hand Air Dyer , Attached Toilet:- 5Nos. Toilets having 1EWC,Towel Rod, Mirror, Wall mounted Wash basin in each Toilet.

ANNEXURE B TO TCN-03

JOB:- DESIGN, SUPPLY/DELIVERY INCLUDING TRANSPORTATION, UNLOADING) STORAGE AT SITE, ERECTION/ASSEMBLY INCLUDING REQUIRED CIVIL WORKS AND HANDING OVER TO BHEL OF MOVABLE/RE ERECTABLE TYPE PRE ENGINEERED, PRE FABRICATED OFFICE BUILDING WITH ASSOCIATED CIVIL WORKS INCLUDING FOUNDATIONS, TOILETS/SEPTIC TANK, SOPAK PIT WATER TANK, MODULAR FURNITURE ETC, SECURITY FENCING FOR 1X250 W ROURKELA NSPCL PROJECT ODISHA

TENDER NO:-PSER:SCT:RKL-C1776:16

SL	Clause/Point No	Existing Clause	Revised clause																																	
6	CL NO 8.0 (ELECTRICAL WORKS)	<p>Bidder to supply & install electrical items like Main switch with Earth leakage protection (30A TPN), suitable sockets/switch units for required A/C points, wires, conduit, tees, bends, clamps, JB's, 5amps socket, Modular Switch boards & points for computers & telephone for each table/desk, earthing wires, Lighting system shall be designed to meet minimum 300Lux of modular type suitable for False ceilings. Also, the bidder should take care of aesthetics and energy conservation. A detailed schematic with BOM of the electrical fittings shall be submitted to BHEL for approval</p> <table><tr><td>Twin tube light 2 X 40 watts</td><td>40</td><td>No's</td></tr><tr><td>Open tube light 1 X 40W</td><td>10</td><td>No's</td></tr><tr><td>Down light</td><td>10</td><td>No's</td></tr><tr><td>PI lamp</td><td>8</td><td>No's</td></tr><tr><td>AC POINTS</td><td>20</td><td>No's</td></tr><tr><td>5 Amps points (UPS & Raw)</td><td>180</td><td>No's</td></tr><tr><td>15 Amps points</td><td>35</td><td>No's</td></tr><tr><td>12 inch exhaust fan</td><td>8</td><td>No's</td></tr><tr><td>12 inch exhaust fan with ducting</td><td>6</td><td>No's</td></tr><tr><td>Earth pit</td><td>2</td><td>No's</td></tr><tr><td>7 SEGMENT DB with ELCB</td><td>4</td><td>No's</td></tr></table>	Twin tube light 2 X 40 watts	40	No's	Open tube light 1 X 40W	10	No's	Down light	10	No's	PI lamp	8	No's	AC POINTS	20	No's	5 Amps points (UPS & Raw)	180	No's	15 Amps points	35	No's	12 inch exhaust fan	8	No's	12 inch exhaust fan with ducting	6	No's	Earth pit	2	No's	7 SEGMENT DB with ELCB	4	No's	<p>Bidder to supply & install electrical items like Main switch with Earth leakage protection (30A TPN), suitable sockets/switch units for required A/C points, wires, conduit, tees, bends, clamps, JB's, 5amps socket, Modular Switch boards & points for computers & telephone for each table/desk, earthing wires, Lighting system shall be designed to meet minimum 300Lux of modular type suitable for False ceilings. Also, the bidder should take care of aesthetics and energy conservation. A detailed schematic with BOM of the electrical fittings shall be submitted to BHEL for approval before execution.</p>
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ANNEXURE B TO TCN-03

JOB:- DESIGN, SUPPLY/DELIVERY INCLUDING TRANSPORTATION, UNLOADING) STORAGE AT SITE, ERECTION/ASSEMBLY INCLUDING REQUIRED CIVIL WORKS AND HANDING OVER TO BHEL OF MOVABLE/RE ERECTABLE TYPE PRE ENGINEERED, PRE FABRICATED OFFICE BUILDING WITH ASSOCIATED CIVIL WORKS INCLUDING FOUNDATIONS, TOILETS/SEPTIC TANK, SOPAK PIT WATER TANK, MODULAR FURNITURE ETC, SECURITY FENCING FOR 1X250 W ROURKELA NSPCL PROJECT ODISHA

TENDER NO:-PSER:SCT:RKL-C1776:16

SL	Clause/Point No	Existing Clause	Revised clause
7	CL NO 9.0 (AIR CONDITIONING)	Air Conditioning: Split Air-Conditioner shall be provided with a minimum capacity of 1 Ton an every 120Sq.ft area with complete installation including ancillary works, testing and Commissioning as per manufactures guidelines and specification. Design may be considered With combination of 1.5 Ton & 2 Ton Preferably. 1.5 Tonne AC – 8 NOS. & 2 Tonne AC -12 Nos.	Air Conditioning: Split Air-Conditioner shall be provided with a minimum capacity of 1.5 Ton and above for every 180Sq.ft area with complete installation including ancillary works, testing and commissioning as per manufactures guidelines and specification. Design may be considered with combination of 1.5 Ton & 2 Ton Preferably.
8		General Foundation drawing	Reference drawing of foundation has been revised and published with this TCN.

**[TECHNICAL SPECIFICATION SITE OFFICE AT 1X250MW NSPCL
ROURKELA, ODISHA**

**TECHNICAL SPECIFICATION
SITE OFFICE
1X250MW NSPCL ROURKELA, ODISHA**

**BAHARAT HEAVY ELECTRICAL
LIMITED
POWER SECTOR-EASTERN REGION,
SALT LAKE, KOLKATA, INDIA**

**[TECHNICAL SPECIFICATION SITE OFFICE AT 1X250MW NSPCL
ROURKELA, ODISHA**

TECHNICAL SPECIFICATION

1. SCOPE

This specification covers Design, manufacturing, supply, receipt at Site, Erection & Finishing works if any etc and Handing over to site Pre-fabricated OFFICE BUILDING including Electricals, Furniture, ,Sanitary, water tank & its supporting structure, internal & external plumbing and sewage connections all complete. This also includes guarantee/warranty for 1 year of operations for the design performance, materials supplied & erected by him covered under scope of the contract.

2.0

2.1 OFFICE SHED SIZE : 40MX10MX3M (APPROXIMATE

2.2 CLEAR HEIGHT : Between FFL & Bottom of truss (if any)/Structural Member (if any) 3m.

2.3 COLUMN SPACING: 3.0M (Recommended) on both longer & shorter side C/c . However suitable spacing can be provided as per design.

2.4 CIVIL WORK

Design & Execution of civil works shall be carried out as per latest IS codes, standard

specification and drawings as per the instruction of Engineer In-charge.

i). Grade of RCC shall be confirming to M25 & Reinforcement Steel shall be confirmed to Fe-415.

ii). Grade of PCC 1:3:6.

iii). Brick masonry using first class brick of strength 50Kg/Sq.Cm. with masonry with CM1:5, plastering with CM1:6 of min. 12mm thick.

iv). Flooring shall be vitrified floor tiles(matt finish) 600x600mm of min 8mm thick consist of concrete base of 100mm thick RCC 1:2:4 over a layer of PCC 75MM(1:4:8) and over 150mm thick sand filling.

v) All the exposed face of Masonry & concrete should be painted with cement paint.

vi). Civil works: Foundations, floors & Brick cladding up to 0.900 m X 250 mm thick brick wall height along periphery.

vii). Safe Bearing Capacity of soil considered as 15 ton per Sq.m. for design of Civil foundations.

viii) Height of RCC Column foundation shall be + 0.60 m from above existing G.L.

[TECHNICAL SPECIFICATION SITE OFFICE AT 1X250MW NSPCL ROURKELA, ODISHA

However, before starting the work the Vendor has to visit site to collect actual information.

ix). RCC/Bricks Stair to be provided at the entrance of the office

x). HDPE/GI Rain Water Down Pipe shall be provided with suitable gutters all around

XI) A general layout drawing and a tentative foundation drawing are provide with this tender but bidder should check the design load and other for finalization of drawing. Approved drawing and design should be submitted to BHEL as per TCC/CML.

2.5 MAIN STRUCTURE & WALLS :

2.5.1 Structural Members for Roof , wall and wall panels:-

The Structural walls shall be made out of **75 mm thick Aerocon Panels** (*HIL Limited or or equivalent manufacturer*). The fixture should be joined together by tongue and groove method to ensure 100% leak proof. The outer framing structure shall be fabricated with ISMC 75X40X3 mm MS”T” or Tubular section as per IS 3601 & IS 1161 or IS 4923(*Tata Structura or equivalent manufacturer*) welded for securing **Aerocon** panel with the span of 1m centre to centre . The joints of Aerovon panels should be properly finish using tape and necessary compound. The above columns will grouted to the existing PCC/RCC flooring by means of expansion fasteners. Roof truss should be made up of anti-corrosive painted 40mm square tubular section Tubular section as per IS 4923 (*Tata Structura or equivalent manufacturer*)designed to suit at roof structure with 0.45mm thick pre-coated profiled GL(Galvalume) (i.e PPGL) roof sheet fixed fasteners including gutters, rain water down pipes/spout etc. all complete. 50mm thick fibre glass insulation (FSK) having minimum density 24kg/cum to be fixed below the roof sheet above the purlins.

All accessories like noggin, lintel, screws etc. shall be used as per manufacturer recommendations.

Outer Doors shall be moulded FRP with necessary hings, handle and pad locks. The aluminum window grills shall be of sliding type, covered with float glass of 4mm thick. The entrance will be provided with 2nos-portico should have aesthetic look of size min 4mx3m. The outer framing column will be covered with polymeric sleeve for protecting from weather and liner columns end will be covered similar polymeric sleeve matching with the inferior complete.

The building shall be designed with 50 m/s wind speed or as per local wind conditions which is maximum.

All the material shall be manufactured by reputed manufacturer. Necessary material test certificate to be issued by the manufacturer.

2.5.2 False Ceiling and Partition

[TECHNICAL SPECIFICATION SITE OFFICE AT 1X250MW NSPCL ROURKELA, ODISHA

False ceiling shall be provided to entire office area including corridors etc excluding toilet block. Frame works made out of anti corrosive painted GI grid work with 250x6mm thick polymeric panels/Bottom runners to be provided below trusses as structural support for galvalume false ceiling panels. If Galvalume panels will be used then Galvalume shall be roll formed from nominal 0.45 mm base metal thickness of minimum yield strength of 550 MPa, coated with an aluminum /zinc alloy i.e. Galvalume, AZ150 (min 150 gm/m² total on both side), confirms to Australian standard AS1397, Profile sheeting for Galvalume panels shall have 1110 mm effective cover width (Panelrib) profile with nominal 3.5 mm deep ribs at pitch of nominal 48 mm center to center distance and these panels are joined together by tongue and groove using self tapping screws. Cut should be made where ever necessary for fixing of electrical fittings.

Double side partition made up anti corrosive painted 25x50mm ms and double side paneling with polymeric section of minimum 250x6 mm thick with an air gap of minimum 4mm these panels are joined together by tongue and groove using self tapping screws. Aerocon Panel 50mm thick with proper finish is also acceptable. However before starting of work vendor should approve the above material/drawing from BHEL

All the material shall be manufactured by reputed manufacturer. Necessary material test certificate to be issued by the manufacturer.

2.5.3 Trims & Flashings

All the openings and sheet terminations to be closed with appropriate factory made flashings / Trims (Ridge, Corner Flashings, Gable Ends, framed opening etc.) Finish /Color of the material will be same as roof /Wall / Liner panels.

Eave gutters, downspouts and rain water down take pipes are cold-formed from the same material (color & finish) as wall panels or approved by concern authority.

2.5.4 Fasteners

Supply of Self tapping/ drilling fasteners shall be min. 40 µm Zinc coated / min. 25 µm Zinc-Tin alloy coated, Hex head, self-drilling screw as per AS 3566-2002 Class 3 fasteners of approved make (Buildex or equivalent). The fastener size shall be calculated as per the design and recommendation of the manufacturer.

The fasteners shall be a minimum of 12 gauge, 14 threads per inch and of material AISI 1022 heat treated carbon steel. The other details are as below;

Screw Hex steel CTEKS 12-14X20 HGS (Unpainted) Wafer Head SDS

CTEKS 10-24X22 without washer

Screw Hex Steel CTEKS 10-16X16 HGS Unpainted with washer

M5X45 fully threaded bolt assembly with nut & washer fully threaded
ASTM A325M

Expansion bolt HST- M12X115/20, Anchor - 80MM Grip - 20mm

2.5.5 Protection accessories and flashings

**[TECHNICAL SPECIFICATION SITE OFFICE AT 1X250MW NSPCL
ROURKELA, ODISHA**

Special grade of silicone sealant non-hardening, neutral cure type of GE or approved equivalent make and grade shall be applied at all side laps and end laps (with flowable mastic) as per manufacturer's recommendation and as approved by the Project Management Consultant / Chief Architect/Engineer.

2.5.6 Foam closures

Providing foam closures to match the panel profile made of expanded polyurethane or similar approved material by Project Management Consultant / Chief Architect/Engineer

3. Flooring

Office flooring shall be vitrified floor tiles(matt finish) 600x600mm of min 8mm thick 1st quality of approved make in colours such as white, ivory, grey, Fume Red Brown, to be laid on 20mm thick cement mortar 1:4 including pointing the joints with white cement and matching pigment etc. all complete. Toilet and passage flooring shall be of antiskid ceramic tile of size 300x300mm of thickness(min 6mm) to be placed as mentioned above.

4. Door & Windows

Internal doors Polymeric/Aluminum with half paneled smog glass. All doors to be provided with suitable hydraulic door closures of approved make . Windows shall be provided with aluminum type with the grill and sunshade. However suitable no. of windows shall be provided for enough ventilation & natural light.

4. Toilet :

Common Toilet:1 No Toilet with 1 EWC ,1 INDIAN, 1 Bath Room, 3 Urinals , 2 Stand Basin, Towel Rod, Mirror , Soap Dispenser, Soap liquid Dispenser , 1 No. Hand Air Dyer ,

Attached Toilet:- 5Nos. Toilets having 1EWC,Towel Rod, Mirror, Wall mounted Wash basin in each Toilet.

6. Water Supply :

A separate structure shall be provided with steel sections to support 1 No. 5000 Litter water tank at a minimum height of 4m . The structure shall be designed with steel as per standard IS specification to withstand the water tank load and wind load in full & the legs of structure shall be suitable anchored to the ground.

7. Sewage Connection

Sanitary fitting along with sewage connections shall be provided up to septic tank and soak pit . All internal and external plumbing (from water tank to distribution system like toilet and pantry) shall be provided as per drawing. Construction of septic tank & Soak pit are also scope of Bidder.

8. Electrical Works:

Bidder to supply & install electrical items like Main switch with Earth leakage protection (30A TPN), suitable sockets/switch units for required A/C points, wires, conduit, tees, bends, clamps, JB's, 5amps socket, Modular Switch boards & points for computers & telephone for

**[TECHNICAL SPECIFICATION SITE OFFICE AT 1X250MW NSPCL
ROURKELA, ODISHA**

each table/desk, earthing wires, Lighting system shall be designed to meet minimum 300Lux of modular type suitable for False ceilings. Also, the bidder should take care of aesthetics and energy conservation. A detailed schematic with BOM of the electrical fittings shall be submitted to BHEL for approval before execution.

9. Networking: Fixing and commissioning of networking works required for modular office all complete as per specification & approved drawing.

1. 9U Wall mountable rack with 5Amps Horizontal Power strip	1	No's
2. 24 Port Loaded Patch Panel with 1 U Horizontal Cable Manager	3	No's
3. Telephone Junction boxes (MDF) Krone type with lock & key	1	No's
4. 10 pair krone strip	5	No's
5. 50 pair raiser cable connect EPABX	30	No's
6. Erection of LAN system equipment such as Jack/patch Cord. etc including I/O and Cat6 cable	60	No's
7. Erection of Voice line system equipment such as I/O and 2pair Telephone cable	60	No's
8. Automatic Telephone Exchange for 50 user	1 No	
9. Desk Phone	50 Nos.	

9. Air Conditioning:

Split Air-Conditioner shall be provided with a minimum capacity of 1.5 Ton and above for every 180 Sq.ft area with complete installation including ancillary works, testing and commissioning as per manufactures guidelines and specification. Design may be considered with combination of 1.5 Ton & 2 Ton Preferably.

10. Erection and installation

Installation shall be done in accordance to the standard practices as specified by the manufacturer and as approved by BHEL. All sheets and accessories must be stored and finally erected without any damage. The Vendor will be required to submit design calculations in support of the proposed profile of the sheet and standard loading etc. to the satisfaction of the design consultant and the Architect. The Vendor shall also submit methodology for fixing and also a maintenance manual for routine maintenance. Special flashing, ridge capping and trims shall be fixed as per manufacturer's recommendation. The shape and girths shall be as per design requirement.

11. Painting:- Office building shall be finished by BHEL approved colour shed as follows:-

- a) Internal:- Two or more coats of acrylic emulsion paint as per IS 5411 of approved brand, shade and manufacture over 2mm thick putty to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guideline
- b) External:- 2 or more coats of Acrylic Elastomeric Emulsion Water proof coating/ paint over primer.

12. Modular Furnishings:

- i) 2-maestro type table for Site in-charge including fixed side return table, mobile pedestal, Chair etc for GM & CM
- ii) Conference hall table-size 21'x6' of seating capacity minimum 22nos (including chairs)
- iii) Modular Office type Cubicle including part cabins-
1200mm X 750mm with necessary file storage racks, supporting pedestal, Keyboard tray, CPU trolley etc., -
 - a) 4 seater cubical :8 Nos
 - b) 2 seater cubical : 4 Nos
 - c) 1 seater cubical : 3 Nos
- iv) Part Cabin : 5 Nos
- v) Full Cabin: 6 Nos
- vi) Table for HOD's with necessary file storage racks, supporting pedestal, Keyboard tray, CPU trolley etc., - 9 No's
- vii) Cabinets for files of push-pull type in steel including channels for smooth mounting, end stoppers, label holder, proper locking arrangement etc as per

**[TECHNICAL SPECIFICATION SITE OFFICE AT 1X250MW NSPCL
ROURKELA, ODISHA**

drawing – 3 No's

- viii) Chairs for senior executives (11nos),
- ix) Chairs for executives (48nos),
- x) Chairs for visitors (18nos)
- xi) Three seater sofa (3nos),
- xii) 1no tea-poi etc required, as per schematic drawing etc all complete.

13. Fencing:- Chain link fencing 2.4m height in all around of office and bidder are also responsible supply & fixing of a MS Gate . Total length of the fencing approx. 200m

14. Salient Technical Requirements:

- All drawing/design work of prefabricated office sheds shall have to be vetted by civil design agency of Reputed Engineering institution like IITs/NITs/Jadavpur University/ IEST-Shibpur etc. or any BHEL approved consultant.
- Agency shall submit four sets of proposed drawings(Vetted) of office along with foundation , furniture arrangements, electrical, Plumbing & other fittings etc. to BHEL before commencement of work for approval within 30 days from receipt of LOI. Also a detail BOQ along with detail rate schedule in line with the BHEL rate schedule shall be submitted along with design/ drawing(vetted).

15. Specific Technical Requirement for erection at site Technical Instructions:

The material and workmanship must be of good quality and accepted standards and specifications. The site Engineer reserves the right to reject any material not up to the specification.

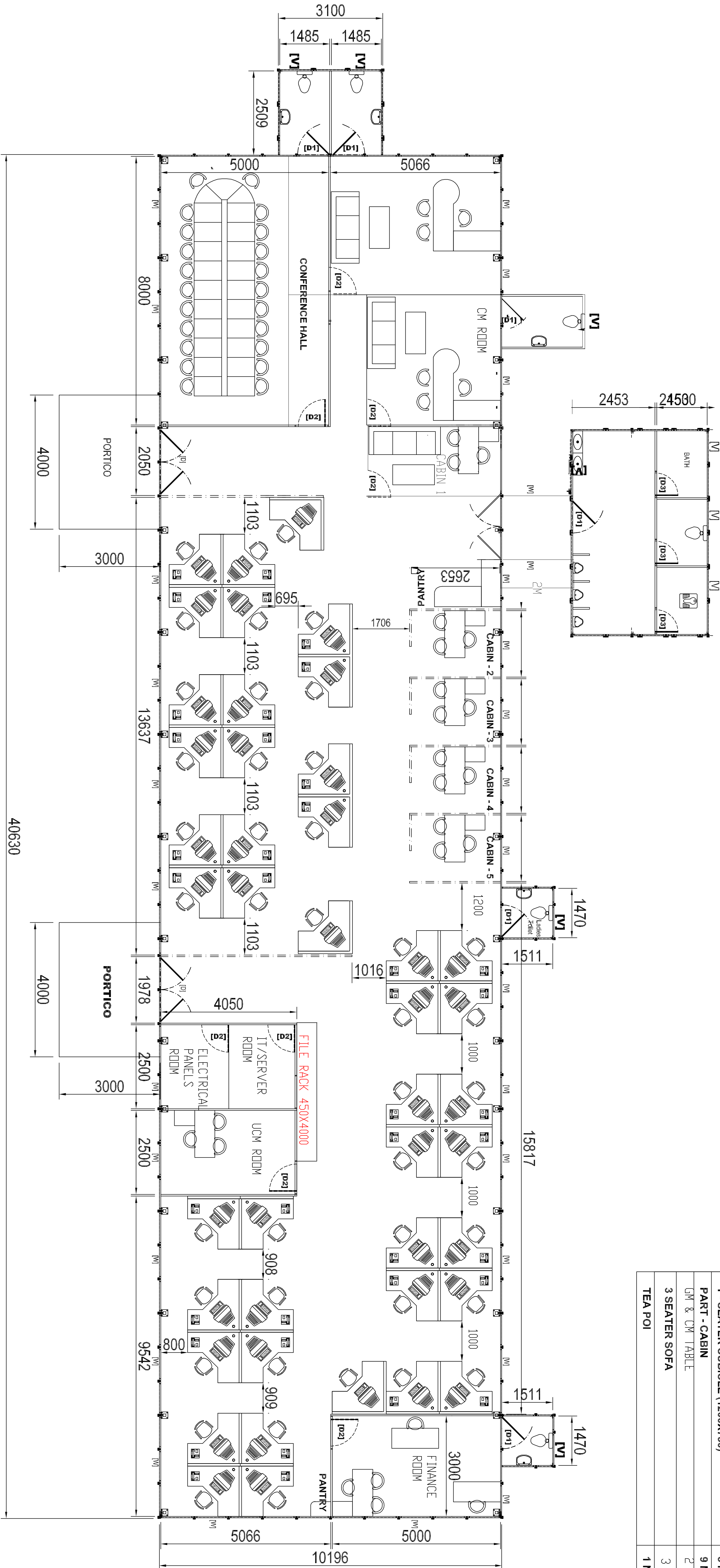
- 15. Any one of the following brand for various item to be installed**
The brand of items is as given in the table below.

Item	Brand
Cladding/Roofing sheeting & Structural	Tata Blue scope/SAIL/Lloyds sheeting or equivalent
Aerocon Panel	HIL Limited or equivalent
Toilet/Sanitary items	Hindware/Parryware/Jaquor

**[TECHNICAL SPECIFICATION SITE OFFICE AT 1X250MW NSPCL
ROURKELA, ODISHA**


AC	LG/Blue star/Voltas or equivalent
LT ACB	L&T/TM/SIEMENS/GEC ALSTOM/GE POWER CONTROLS/ or equivalent
Fuse Switch Unit	ALSTOM/SIEMENS/L&T/CGL/STANDARS/HAVELS/SCHEI NDER/C&S/GE POWER or equivalent
MCB	STANDARS/MDS/INDO KOPP/C&S/SIEMENS/ABB/VITZRO-KORPS or equivalent
MCB	STANDARS/MDS/INDO KOPP/C&S/SIEMENS/ABB or equivalent
HR Fuses	ALSTOM/SIEMENS/L&T/S&S/STANDARS/INDO ASIAN/HAVELS/VERSATRIP/BUSMAN/GE POWER or equivalent
Control switches	SIEMENS/ALSTOM/L&T/KAYCEE
Indicating lamps(LEDs)	SIEMENS/ALSTOM/L&T/TM/BINAY/TECKNIC/VAISHNO
Lighting Fittings	PHILIPS/BAJAJ/CROMPTION/CEMA/GE/MYSORE LAMPS/ or equivalent
Switch socket outlet	ALSTOM/CGL/BEST & CROMPTION/ESSEN
Piano Switch	ANCHOR/ELLORA/MAK ELECTRONIC/ALSTOM
LT POWER & CONTROL CABLES	FORT GLOSTR/ASIAN CABLES/CCI/UNIVERSAL/NICCO/DELTON CABLES/FINOLEX/INDUSTRIAL CABLES/CFI/OMEGA/RADIANT CABLES/POLYCAB/KEI/GOVIND/BRIMSON/PREMIER/PARAMO UNT/PLAZA/ or equivalent
Terminal Blocks	ESSEN/CONNECTWELL/ELMEX/PHOENIX/WAGO or equivalent
Furniture	GODREJ or equivalent

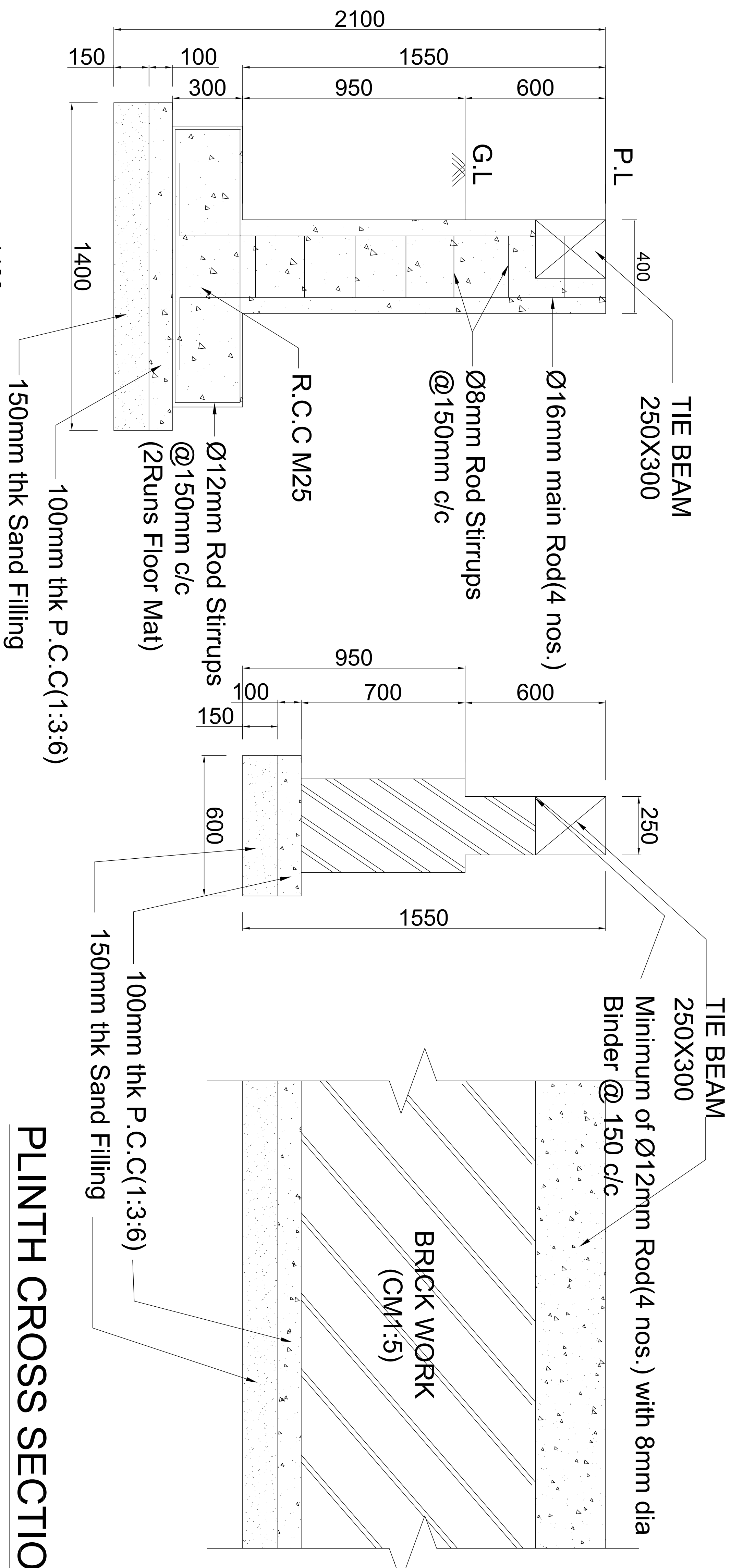
SCHEDULE OF FURNITURE	
<u>DESCRIPTION</u>	<u>QTY</u>
CHAIRS FOR SENIOR EXECUTIVES	11 NOS
CHAIRS FOR EXECUTIVE	48 NOS
CHAIRS FOR VISITORS	18 NOS
CONF. HALL CHAIR	20 NOS
CONFERENCE TABLE (21'X6')	1 NO
4 - SEATER CUBICLE (1200X750)	8 NOS
2 - SEATER CUBICLE (1200X750)	4 NOS
1 - SEATER CUBICLE (1200X750)	3 NOS
PART - CABIN	9 NOS
GM & CM TABLE	2 NOS
3 SEATER SOFA	3 NOS
TEA POI	1 NO



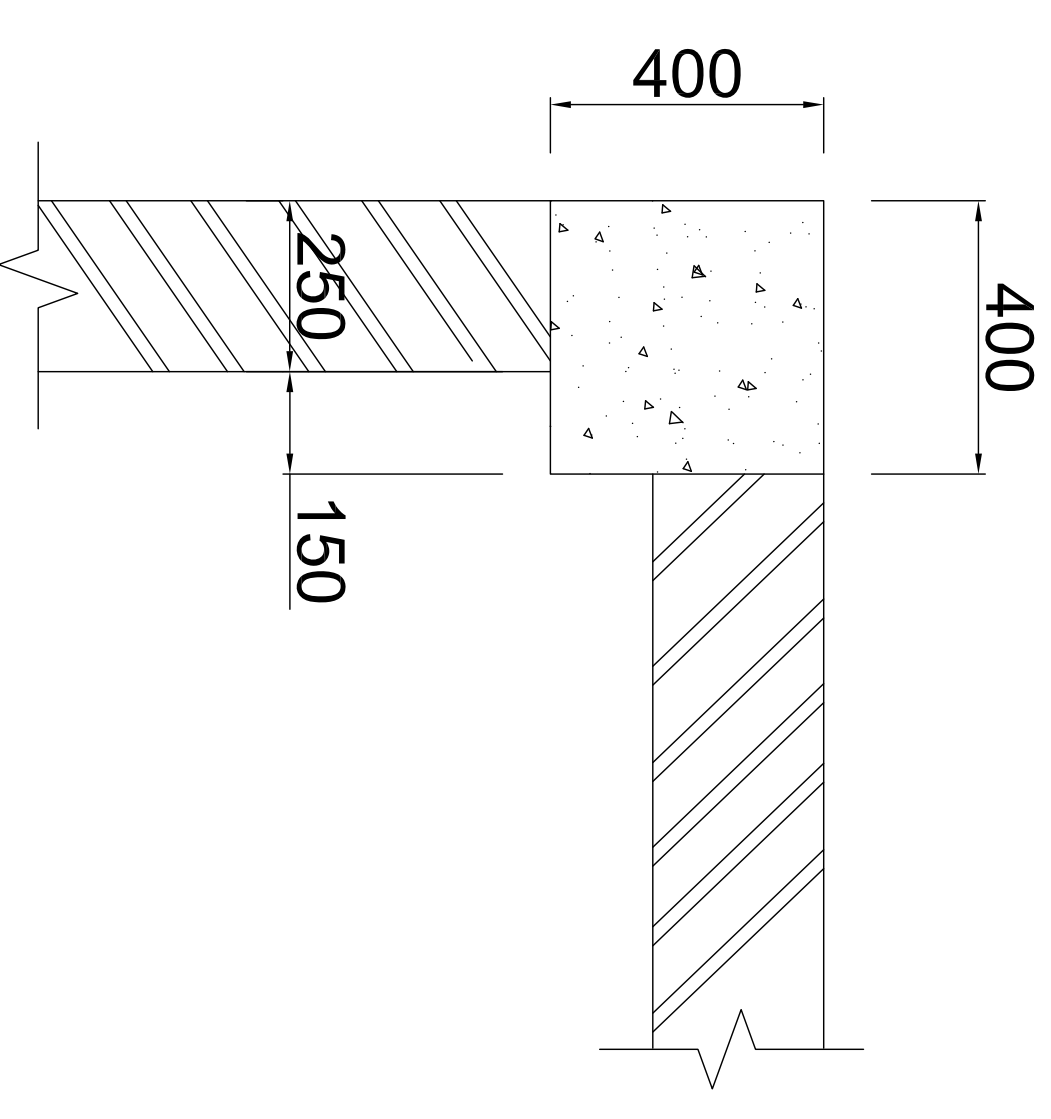
TENDER NO :PSER:SCT:RKL-C1776:16

TENDER PURPOSE ONLY

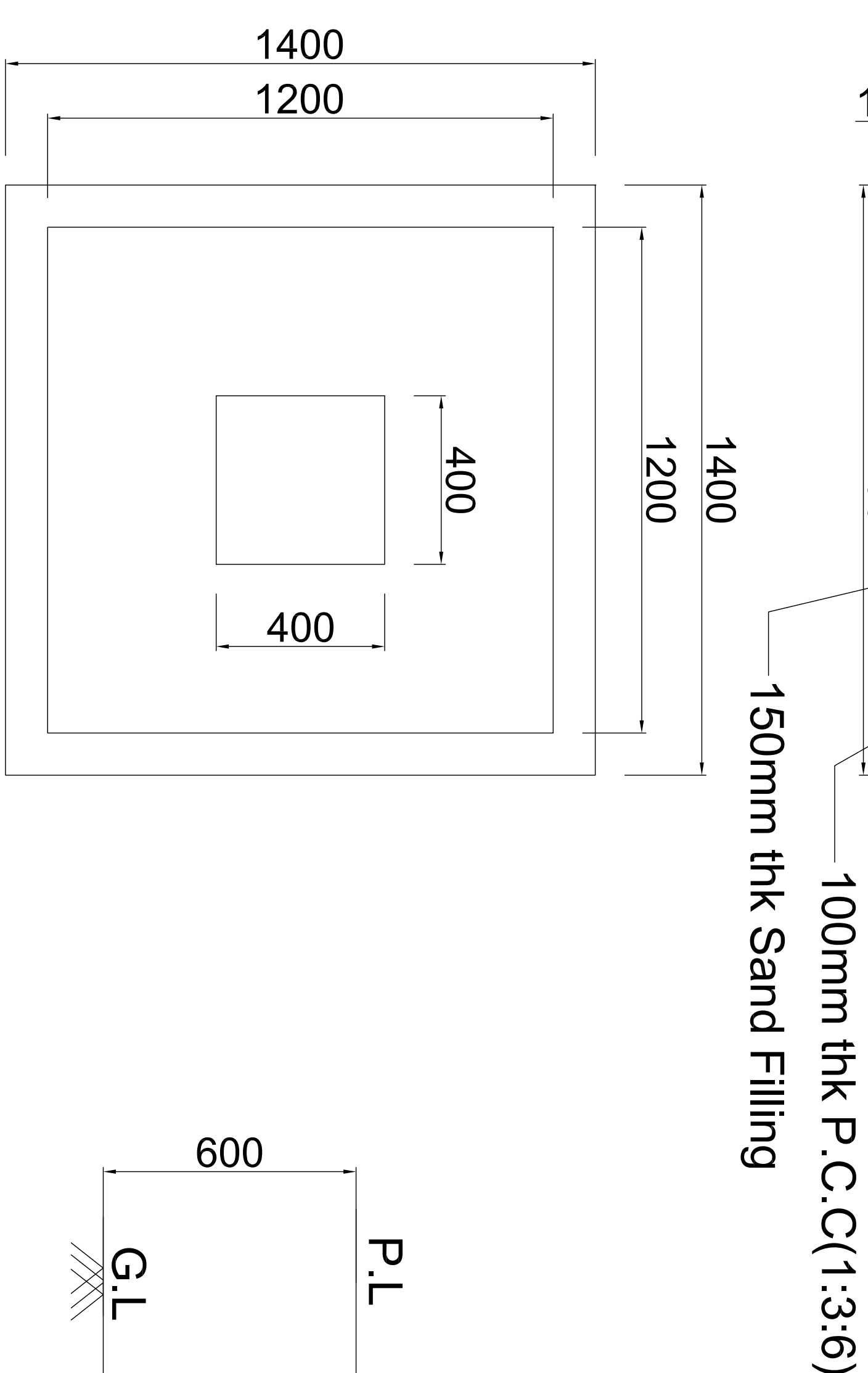
SCHEDULE OF DOOR, WINDOW & VENTILATOR				TITLE :-				Sheet :-								
TYPE	SIZE	MATERIAL	QTY	PLAN OF SITE OFFICE.				1								
DOOR - D	1950 X 1800	FIRE DOOR WITH P.V.C OUTER FRAME	3	SIZE : <table><tr><td>40.6</td><td>10.2</td><td>3 mtr.</td></tr><tr><td>Length</td><td>Width</td><td>Height</td></tr></table>				40.6	10.2	3 mtr.	Length	Width	Height	NAME	SIGN.	DATE
40.6	10.2	3 mtr.														
Length	Width	Height														
DOOR - D1	1950 X 880	FIRE DOOR WITH P.V.C OUTER FRAME	4													
DOOR - D2	1950 X 880X25	WOODEN DOOR WITH P.V.C OUTER FRAME	7	Scale NTS				PROJECTION 								
DOOR - D3	2090 X 750	PVC	3													
WINDOW - W	1200 X 935	ALUMINIUM	27	DWG NO : PM - MAY 11 - BHEL - PL 001				REVISION : 0								
VENTILATOR-V (FIXED VENT)	300 X 300	ALUMINIUM	8	PROJECT : SITE OFFICE - IX250MW ROURKELA												
				APPD												



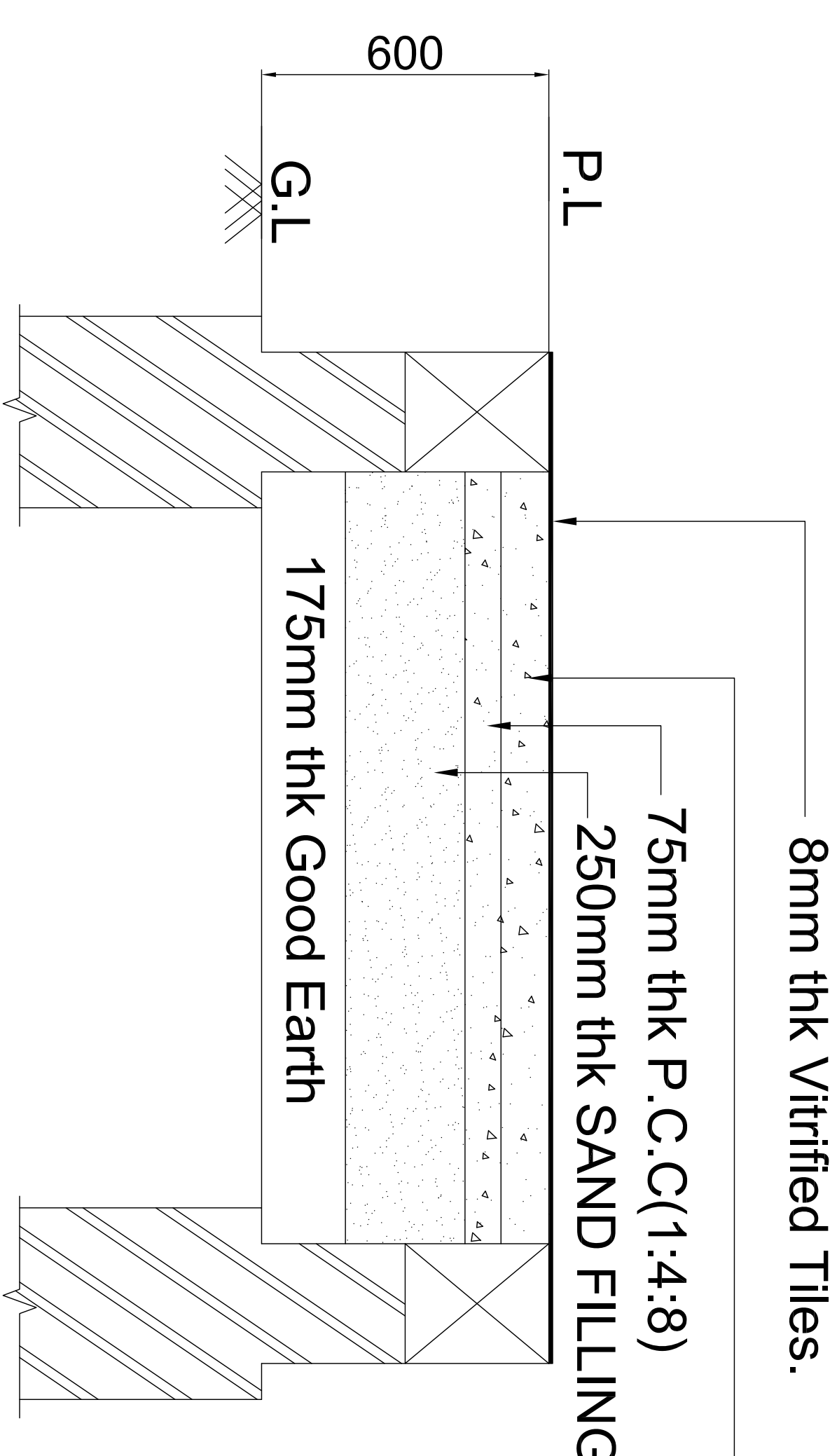
PL & FOOTING CROSS SECTION



PLINTH CROSS SECTION

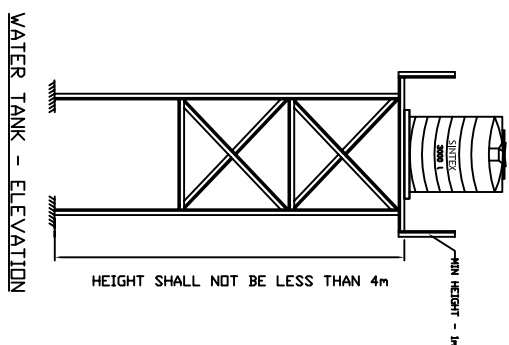
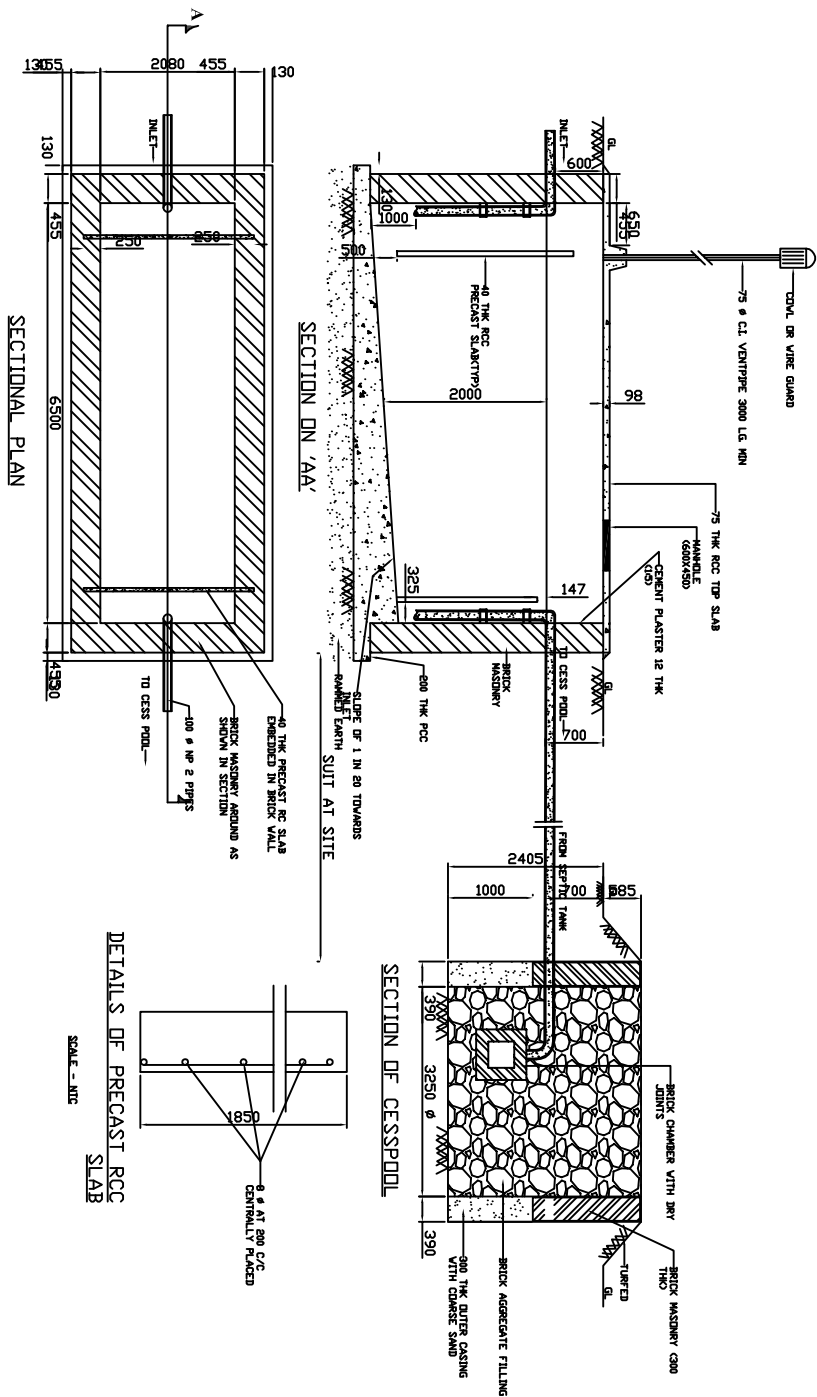


FOOTING CROSS SECTION



TENDER PURPOSE ONLY

PROJECT	CIVIL DRAWING -BHEL OFFICE					
JOB SITE LOCATION	1X250MW ROURKELA NSPCL PROJECT					
TITLE	FOUNDATION DRAWING					
Drawn By	Checked By	Job no	Drawing No	Scale	Date	Sheet no
SS			01	1:100	21.10.16	1 OF 1
						0



NOTE:

1. All Dimension are in MM.
2. Grade of Concrete is M15
3. All reinforcements are CTD bars

conforming to IS-1786

5. Use 1:5 Mortar for masonry works.

6. The inside of Septic tank shall have cement plaster 1:3 with approved water proof agent.



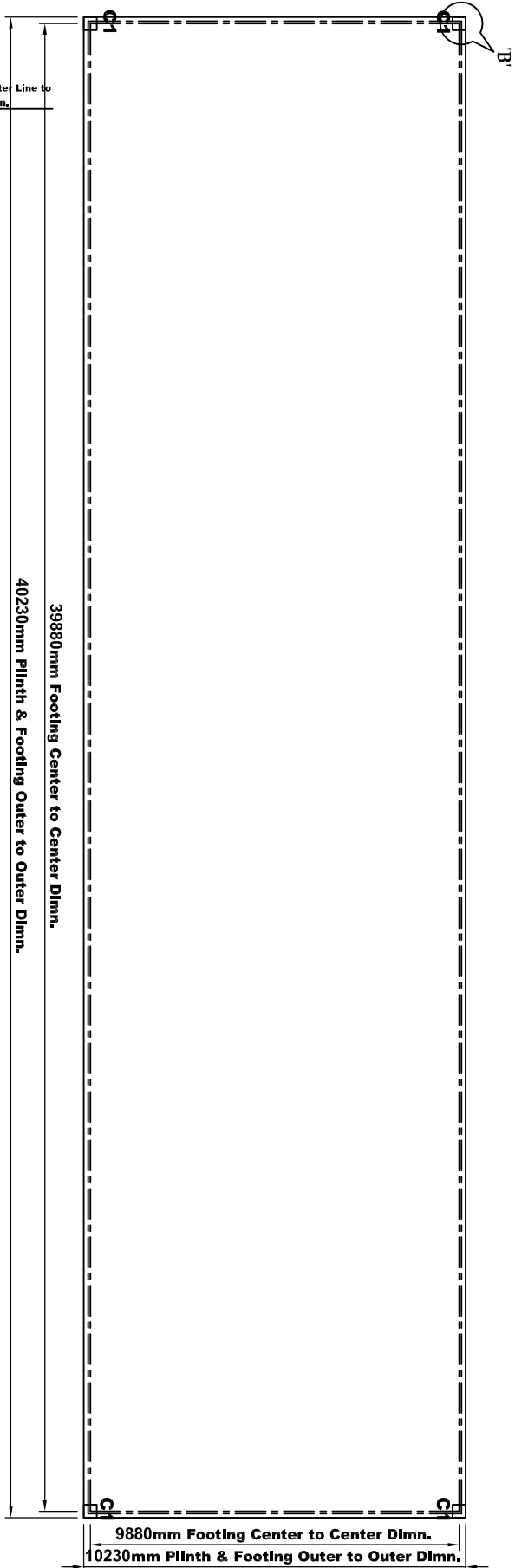
BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR - SOUTHERN REGION
CHENNAI

TITLE:

SEPTIC TANK AND WATER TANK STRUCTURE

(DETAILS FOR 50 USERS)


DEPT.	CIVIL	STRUCTURAL	BHEL	DRAWING NO.
SIGN			BHEL/PSSR/PWK/DFC/003	
DATE	26-11-2010		SHEET	1 OF 1 REV. 00

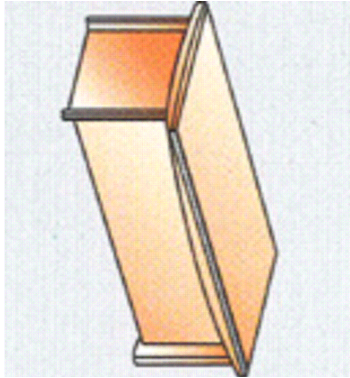


DETAILS OF FOOTING

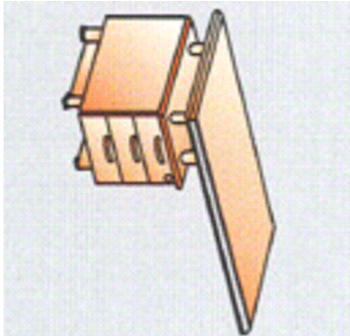
DETAILS 'B'

Note : All Dimensions are in mm

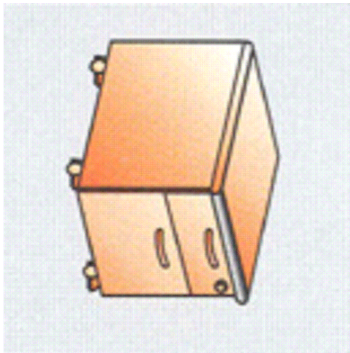
 BHARAT HEAVY ELECTRICALS LTD POWER SECTOR – SOUTHERN REGION CHENNAI			
TITLE : DETAILS OF FOOTING			
DEPT.	CIVIL	STRUCTURAL	BHEL DRAWING NO.
SIGN			BHEL/PSSC/PWK/DFC/005
DATE	26-11-2010		SHEET 1 OF 1 REV. 00



Desk-W180xD90xH75

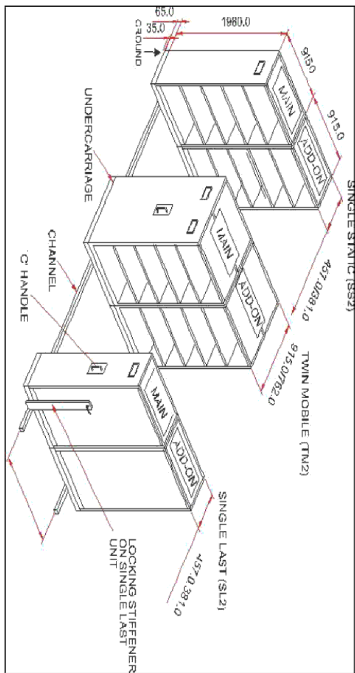


Fixed side return Desk
W120xD60xH72

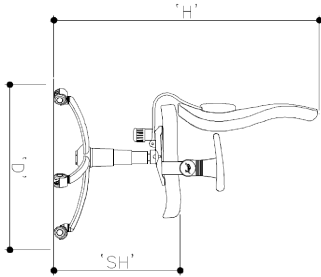


Mobile pedestal
W120xD60xH72

MAESTRO TYPE TABLE FOR SITE-INCHARGE

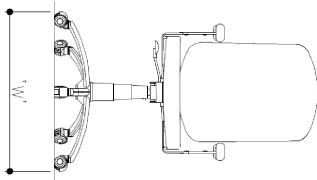


PULL - PUSH TYPE OPTIMIZER



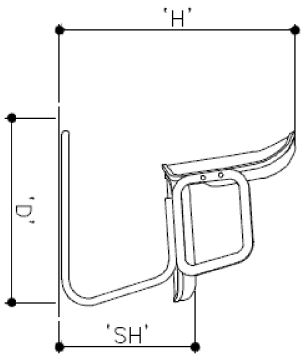
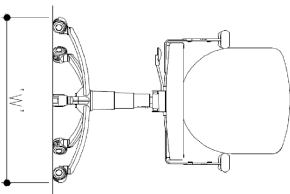
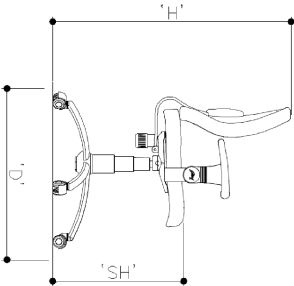
Chair for Senior executives

W-70cm,
D-70cm,
H-102 to 115cm,
SH-44 to 56.5cm
Tolerance- ± 0.5 cm



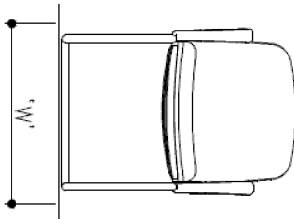
Chair for Executives & Conf. hall

W-70cm,
D-70cm,
H-90 to 102.5cm,
SH-44 to 56.5cm
Tolerance- ± 0.5 cm



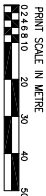
Chair for visitors:

W-55cm,
D-61cm,
H-80.5 cm,
SH-44 cm,
Tolerance- ± 0.5 cm



NOTE:-

ALL DIMENSIONS SHOWN ARE ASSUMED AND
SHOULD BE VERIFIED ACCORDINGLY



BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR SOUTHERN REGION
CHENNAI

PSSR

TITLE :

FURNITURE DRAWINGS

DEPT.	CIVIL	STRUCTURAL	BHEL DRAWING NO.
SIGN			BHEL-PSSR-PLX-0FC-008
DATE	26-11-2010		SHEET 1 OF 1 REV 00