



**TITLE:**

**PRE-FABRICATED OFFICE BUILDING  
INCLUDING FOUNDATION,  
ELECTRICAL, FURNITURE, TOILET &  
OTHER ALLIED ITEMS AT BHEL SITE**

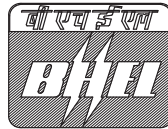
SPECIFICATION NO. PSSR-PMX-OFC-001-

VOLUME - II

REV.NO. 01 DATE 31/10/2014

SHEET 1 OF 9

## TECHNICAL SPECIFICATION



**Bharat Heavy Electricals Limited**

**Project Management Department**

**Power Sector – Southern Region**

**690, Anna Salai, Nandanam**

**Chennai – 600 035**



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## 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 using PLASTOCRETE PANELS including Foundation, Electricals, Furniture, Sanitary, Septic tank, water tank & its supporting structure, internal & external plumbing & sewage connections all complete. This also includes guarantee for **1 year** of operations for the design performance, materials supplied & erected by him covered under the scope of the contract.

### 2. DETAILED SPECIFICATION

#### 2.1. OFFICE SHED

**SIZE:** 10M C/c x 40 M C/c x 3.0M (approximate).

**CLEAR HEIGHT:** Between FFL & Bottom of truss (if any)/ Structural Member (if any) – 3.0 M.

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

**MAIN STRUCTURE&WALLS:** The Structural walls shall be made out of 25mm thick Plastocrete, concrete filled, Polymeric section filled with high density cellular concrete. The fixture should be joined together by tongue and groove method to ensure 100% leak proof. The Outer framing structure shall be fabricated with ISMC75x40x3mm MS "T" welded for securing plastocrete panel with the span of 1m centre to centre. The above

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columns will be grouted to the exiting PCC flooring by means of expansion fasteners. Outer Doors shall be of moulded FRP with necessary hinges, handle and pad locks. The aluminium windows with grills shall be of sliding type, covered with float glass of 4mm thick. The entrance will be provided with 2nos -portico should have an aesthetic look of size min 4m X 3m. The outer framing column will be covered with polymeric sleeve for protecting from weather and inner columns end will be covered similar polymeric sleeve matching with the interior complete

**ROOF:**

Roof truss should be made up of anti corrosive painted 40mm square tubular section designed to suit at roof structure with 0.47mm thick pre-coated profiled GI (i.e., PPGI) roof sheet fixed with fasteners including gutters, rain water down pipes/spouts etc. all complete.

**FLOORING:**

Office flooring shall be of ceramic floor tiles (matt finish) 600x600mm of (min 8mm thick) 1st quality conforming to IS: 15622 of approved make in colours such as White, Ivory, Grey, Fume Red Brown, to be laid on 20mm thick cement mortar 1:4 (1 cement: 4 coarse sand) 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.

**FALSE CEILING:**

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 250 x 6mm thick polymeric panels and these panels are joined together by tongue and groove using self tapping screws. Cut-outs



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should be made where ever necessary for Fixing of electrical fittings.

**PARTITION:**

Double side partition made up of anti corrosive painted 25 x 50mm MS and double side panelling with polymeric section of minimum 250x6 mm thick with an air gap of minimum 4 mm these panels are joined together by tongue and groove using self-tapping screws.

**MODULAR FURNISHINGS:** (a) 1-maestro type table for Site in-charge including fixed side return table, mobile pedestal,

(b). Conference hall table-size 18'x6' of seating capacity minimum 20nos (including chairs),

(c). Modular Office type Cubicle including part cabins- 1200mm X 750mm with necessary file storage racks, supporting pedestal, Keyboard tray, CPU trolley etc.,

(d). Cabinets for files of push-pull type in steel including channels for smooth mounting, end stoppers, label holder, proper locking arrangement etc as per drawing

(e). Chairs for senior executives (11nos),

(f). Chairs for executives (48nos),

(g).Chairs for visitors (18nos)

(h). Three seater sofa (2nos),

(i). 1no tea-poi etc required, as per schematic drawing etc all complete.



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**DOOR & WINDOWS:** Internal doors Polymeric with half panelled smog glass. All external doors with Solid core PVC panel door. All doors to be provided with suitable hydraulic door closures of approved make. Windows shall be provided with aluminium type with grill and sunshade. However suitable no of Windows shall be provided for enough ventilation & natural light.

**TOILET:** 1 no's – Toilet with 1 EWC, 1 Wash Basin with required Towel rod, soap dispenser, Glazed mirror for Site-in-charge room. 1 no's Toilet with 1 EWC, 1-urinal, 1 Wash basin shall be provided for conference hall. A toilet Block consisting 4 urinals, 2 EWC, 1 IWC & 2 Wash basin shall be provided. All toilets should have required towel rods, soap dispensers, glazed mirrors etc with automatic flushing System including total required plumbing.

**WATER SUPPLY:** A separate structure shall be provided with steel sections to support 1 no. 5000litre 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 suitably anchored to the ground.

**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 enclosed drawing.



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**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, JBs, 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.

**AIR CONDITIONING:** Split Air-conditioner shall be provided for every 100Sq.ft area with complete installation including ancillary works, testing and commissioning as per manufacturers guidelines and specification. Design may be considered with a combination of 1.5 Ton & 2 Ton preferably.

### **3.0 SALIENT TECHNICAL REQUIREMENTS:**

- All design work of prefabricated office sheds shall have to be vetted by civil design agency of repute/ Civil Engineering department of reputed engineering college like IITs/ Madras Institute of Technology.
- Agency shall submit two 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 seven days from the receipt of LOI. Also a detail BOQ along with detail rate schedule in line with the BHEL rate schedule shall be submitted along with the design drawing(Vetted).



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- Typical foundation drawing is enclosed. However, foundation should be designed for actual site conditions. Before starting the work the Vendor has to visit site to collect actual information. Bidder to take care of all Indian soil conditions while designing foundation. No extra cost shall be paid for any change in foundation.
- All designs have to be carried out as per relevant IS/International codes.
- Since these are detachable sheds & to be in repetitive use at other locations, proper marking (permanent) shall be made for identification to ease re-erection. The shed shall be so designed that it can be dismantled at any time and may be transported to be re-erected at other location.
- The roof truss should have bolted joints at crown /at both ends. Both roof and side cladding are to be made "Water Tight".
- The bidder should submit a guarantee for 1 year of operations for the materials supplied and erected by him.
- Bidder shall submit five sets of proposed drawings of the shed to BHEL before commencement of work. Five sets of final drawings, along with one soft copy in CD and one reproducible, shall be handed over to BHEL immediately after finalization of design.
- Bidders should take care of all Indian site conditions, prevailing local laws etc. No claim shall be entertained to lack of knowledge of site condition.
- After completion of work, the building and areas around it should be cleared of all rubbish, debris etc. and handed over in fit condition for occupation.
- 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.



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**4.0. SPECIFIC TECHNICAL REQUIREMENT FOR ERECTION AT SITE TECHNICAL INSTRUCTIONS**

The materials 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.

**5.0. DRAWINGS/BOQ**

The following drawings/BOQ are enclosed strictly for the guidance of the bidder.

- Schematic sketch of OFFICE BUILDING (BHEL:PSSR:PMX:OFC:001)
- Water supply and Sanitary system- Layout(BHEL:PSSR:PMX:OFC:002)
- Septic tank & water tank structure-(BHEL:PSSR:PMX:OFC:003)
- Details of plinth-(BHEL:PSSR:PMX:OFC:004)
- Details of footing-(BHEL:PSSR:PMX:OFC:005)
- Footing cross sectional view-C1-(BHEL:PSSR:PMX:OFC:006)
- Plinth and footing cross sectional view-A-(BHEL:PSSR:PMX:OFC:007)
- Furniture Drawing-(BHEL:PSSR:PMX:OFC:008)

**6.0. Any one of the following brand for various items to be installed:**

The brand of items is as given in the table below.

Item	Brand
Cladding/Roof Sheeting & Structural	Tata Blue scope/SAIL/Lloyds sheeting.
Toilet/Sanitary Items	Hindware / Parryware/ Jaquor
AC	LG, Blue Star, Voltas



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<b>Electrical Component</b>	<b>Brand</b>
LT ACB	L&T /TM/SIEMENS/GEC ALSTOM/GE POWER CONTROLS / SCHNEIDER / C&S / SPACEAGE HYUNDAI
Fuse Switch Unit	ALSTOM / SIEMENS / L&T / CGL / STANDARDS / HAVELS / SCHNEIDER / C&S / GE POWER
MCB	STANDARD / MDS / INDO KOPP / C&S / SIEMENS / ABB
MCCB	STANDARD / MDS / INDO KOPP / C&S / SIEMENS / ABB
HRC Fuses	SIEMENS / L & T / ALSTOM / S & S / STANDARD / INDO ASIAN / HAVELS / VERSATRIP / BUSMAN / GE POWER
Control switches	SIEMENS / ALSTOM / L & T / KAYCEE
Indicating lamps (LEDs)	SIEMENS / L & T / ALSTOM / TM / BINAY / TECKNIC / VAISHNO
Lighting Fittings	PHILIPS / BAJAJ / CROMPTON / CEMA / GE / MYSORE LAMPS equivalent.
Switch Socket outlet	ALSTOM / CGL / BEST & CROMPTON / ESSEN
Piano switch	ANCHOR / ELLORA / MAK ELECTRIC / ALSTOM
LT Power & Control Cables	FORT GLOSTER / ASIAN CABLES / CCI / UNIVERSAL / NICCO / DELTON CABLES / FINOLEX / INDUSTRIAL CABLES / CMI / OMEGA / RADIANT CABLES / POLYCAB / KEI/GOVIND / BRIMSON / PREMIER / PARAMOUNT / PLAZA
Terminal Blocks	ESSEN / CONNECT WELL / ELMEX / PHOENIX / WAGO



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CLOSED SHED**

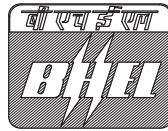
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## **TECHNICAL SPECIFICATION FOR STORAGE CLOSED SHED**



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**Project Management Department**

**Power Sector – Southern Region**

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## TECHNICAL SPECIFICATION

### 1.0 SCOPE

This specification covers the following for the Rate Contract:

Design, Manufacturing, Supply, Receipt at Site, Erection, Site Painting etc. including Civil and Handing over of Removable/Re-erectable type Pre-Engineered, Pre-fabricated Steel Storage Sheds.

This also includes guarantee for **12 months** of operations for the design performance, materials supplied & erected by him covered under the scope of the contract.

### 2.0 DESIGN CONSIDERATIONS FOR CLOSED STORAGE SHED.

1. Size of Closed Shed – **15Mc/cX60Mc/cX6.0M** (approximate).
2. Clear Height of closed Shed (between FFL & Bottom of truss/ Structural Member) – 6.0M.
3. Columns shall be spanning – 6.0M c/c long span & 5.0M c/c short span.
4. All design work of sheds shall be of pressed steel sections & have to be vetted by civil design agency of repute/ Civil Engineering department of reputed engineering college like IITs/SERC.
5. All side cladding/ roof sheets shall be fitted in such a way that they can be removed at any point of time.
6. Sliding doors (4.65 M Width x 5 M Height) shall be provided at front entrance of each covered shed at centre location. Suitable arrangement shall be made for easy operation of gates (gear operated).
7. One man-entry gate to be provided on at one side of each shed (front entrance by the side of sliding door).
8. For local site conditions, bidder to refer to enclosed write up (refer SCC).



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9. The bidder should submit a guarantee for 12 months of operations for the materials supplied and erected by him.

10. All designs have to be carried out as per relevant IS code

## **2.1 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.

1. Grade of RCC shall be confirming to M25 & Reinforcement Steel shall be confirmed to Fe-415.
2. Grade of PCC 1:4:8.
3. Brick masonry using first class brick of strength 50Kg/Sq.Cm. with masonry with CM1:5, plastering with CM1:6 of min. 12mm thick.
4. Flooring shall consist of concrete base of 100mm thick PCC 1:2:4 over a layer of 150mm thick sand filling.
5. All the exposed face of Masonry & concrete should be painted with cement paint.
6. Civil works: Foundations, floors & Brick cladding up to 0.900 m X 250 mm thick brick wall height along periphery.
7. Safe Bearing Capacity of soil considered as 15 ton per Sq.m. for design of Civil foundations.
8. Height of RCC Column foundation shall be + 0.60 m from above existing G.L. However, before starting the work the Vendor has to visit site to collect actual information.
9. RCC Ramp to be provided at the entrance of each shed.
10. HDPE Rain Water Down Pipe shall be provided with suitable gutters all around.



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## **2.2 STRUCTURAL STEEL WORK**

Design of structural steel work shall be carried out as per latest IS codes, standard Specification and drawings as per the instruction of Engineer In-charge.

All materials for structural steel works have to be supplied by the contractor and necessary test certificates of the materials procured for this work has to be submitted for scrutiny. All fabrication and erection of structures must be executed according to the specification and drawings. Erection of trusses is true to line and level and aligned properly, as per drawing and instruction of Engineer In-charge.

1. Structural/ steel members will have 1 coat of Zinc Chromate primer (surface preparation of the section as per the standards to suit the climatic conditions) followed by 2 coats of synthetic enamel paint, if not pre-coated. The roof truss should have bolted joints at crown and at both ends.
2. All accessories like G.I. bolts, EPDM washers and nuts complete from reputed manufacturer shall be included in the scope. All bolts, nuts (IS 4759) shall be galvanised (hot dip) min. 270gm/m<sup>2</sup>. Galvanised spring/ plain washer shall be as per IS 1573.
3. Since these are detachable sheds & to be in repetitive use at other locations, proper marking (permanent) shall be made for identification to ease re-erection. The stores shed shall be so designed that it can be dismantled at any time and may be transported to be re-erected at other location.
4. Cladding : Roof and Side Cladding with Galvalume Sheet confirming to ASTM A 792 of thickness 0.47mm with zinc coating not less than 150gm/Sq.m (both side mass) of 550Mpa (min) of approved make. Translucent (Poly Carbonate) sheet of approved make shall be provided for alternative bays ( 10% of the sheeting area ). Both roof and side cladding are to be made " Water Tight. ". Purlins for wall & roof cladding shall be 'z' shape made-up with pressed steel.

## **2.3 OTHER WORKS**

1. Providing ventilators 900 mm (W) x 600 mm (H) – 16 no's should be at a height of 4.5m from FFL, made of suitable Aluminium section with wired glass open-able type for closed shed only.



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2. Store in-charge room :

It shall be of 50 mm Thick PUF insulated sandwich panels. These panels are made out of 0.47 thick colour coated G.I. Sheet as exterior on both sides with PU Foam of density 38 kg/Cu.Mtr and tensile strength of 4 kg/Sq.Cm inside. Compressive strength(10 % deformation ) 2.1 Kg/Sq.Cm. Thermal conductivity at 10 Deg 0.02 W/M Deg k Temperature Range - 80 Deg C to + 100 Deg C The PU Foam thickness is 60 mm.

False ceiling shall be provided with sandwich panels of thickness 30mm thick.

1nos. table of 1200m width X 600mm depth X 750mm height consisting 3 drawer unit left side, should also have CPU & keyboard provision(table in beech / black colour), 1nos executive chair(Width - 70.0 Cm, Depth - 70 Cm, Height -84.0 Cm- 96.5 Cm Seat Height - 46.5 - 59.0 Cm) & 3nos visitor chairs (Width - 52.5 Cm, Depth - 61 Cm, Height -80 Cm- 119.0 Cm Seat Height - 43.0 Cm)

1nos. file cabinet consisting 4 drawers of size 470mm width X 1320mm height X 620mm depth and 1nos. single side steel file/book rake consisting of 3 rakes of size 900mm width X1850mm height X316mm depth and mobile unit containing of 3 drawers shall be provided.

Electrical: 1nos Flush mounted tube light with fitting & 1nos ceiling fan.

3. Suitable long span shelve system shall be provided throughout the length of both opposite longitudinal spans of closed sheds. It should have two shelves with one shorter top & one wider middle rack at height of 600mm from floor adding to a total height of 1200mm. The shelves shall be design to with stand SKU loading (not less than 125 Kg/Sq.M) with suitable angle section. The width of top shelf shall be of 600mm & intermediate/middle shelf is 750mm.

## **2.4 ELECTRICAL WORK**

Supply & installation of electrical items are to be carried out strictly as per approved drawings and executed through licensed electricians.



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1. Bidder to supply & install electrical items like Main switch (30A TPN), ELCB, wires, conduit, tees, bends, clamps, JB's, Switch boards, earthing wires etc. for 18 nos. Medium Bay HPSV lamps with fittings. The same will be as per BHEL site Engineer's approval. 2nos. EXHAUST FAN of size 600mm of suitable capacity on both sides on the gable ends to be supplied and fitted.
2. Outside the shed 1nos sodium vapour lamp shall be provided at the entrance.
3. Electrical cables shall confirm to Finolex / Havells / Universal / Delton / Paramount and fixtures/fittings shall be of Havells / Crompton/ Bajaj / Philips or any other approved make.

## **5.0 GENERAL**

All works shall be carried out in proper workmen like manner. Items of works covered by the following specification shall be carried out as per the best practices and according to the direction of the Engineer In-charge / BHEL, Site Engineer and to his satisfaction. Unless otherwise specified in this section or in the description of item, the cost of stage of works mentioned here under shall be deemed to have been included in the rates of items provided in the schedule.

### **Bidders may take note of the following points while sending their offers:**

1. The design for shed shall be submitted by the bidder within 7 days of the receipt of the LOI. The design must be vetted by civil design agency of repute/ Civil Engineering department of reputed engineering college like IITs/SERC. Also a detail BOQ along with detail rate schedule in line with the BHEL rate schedule shall be submitted along with the design drawing and that must also be vetted by civil design agency of repute/ Civil Engineering department of reputed engineering college like IITs/SERC.
2. The quoted prices shall include transit freight, handling at site, assembly and erection and all Taxes, duties, local taxes including Works Contract Tax (if any).
3. Agency shall submit two sets of proposed drawings of the shed to BHEL before commencement of work for approval for all sites. Five sets of final drawings, along with one soft copy in CD and one reproducible, shall be handed over to BHEL immediately after finalization of design.



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4. While executing the work at site, if there is any increase or decrease in the depth of the foundation because of the soil condition at site, the new quantities will be reworked and submitted for approval to BHEL. Accordingly the rates will be reworked and the extra amount will be paid.

5. Similarly BHEL reserves the right to modify the size of the shed in line with the requirement and space constraint at site. In such special cases, in line with the BOQ submitted by the bidder, the quantities for the shed can be re worked and the amount can be revised.

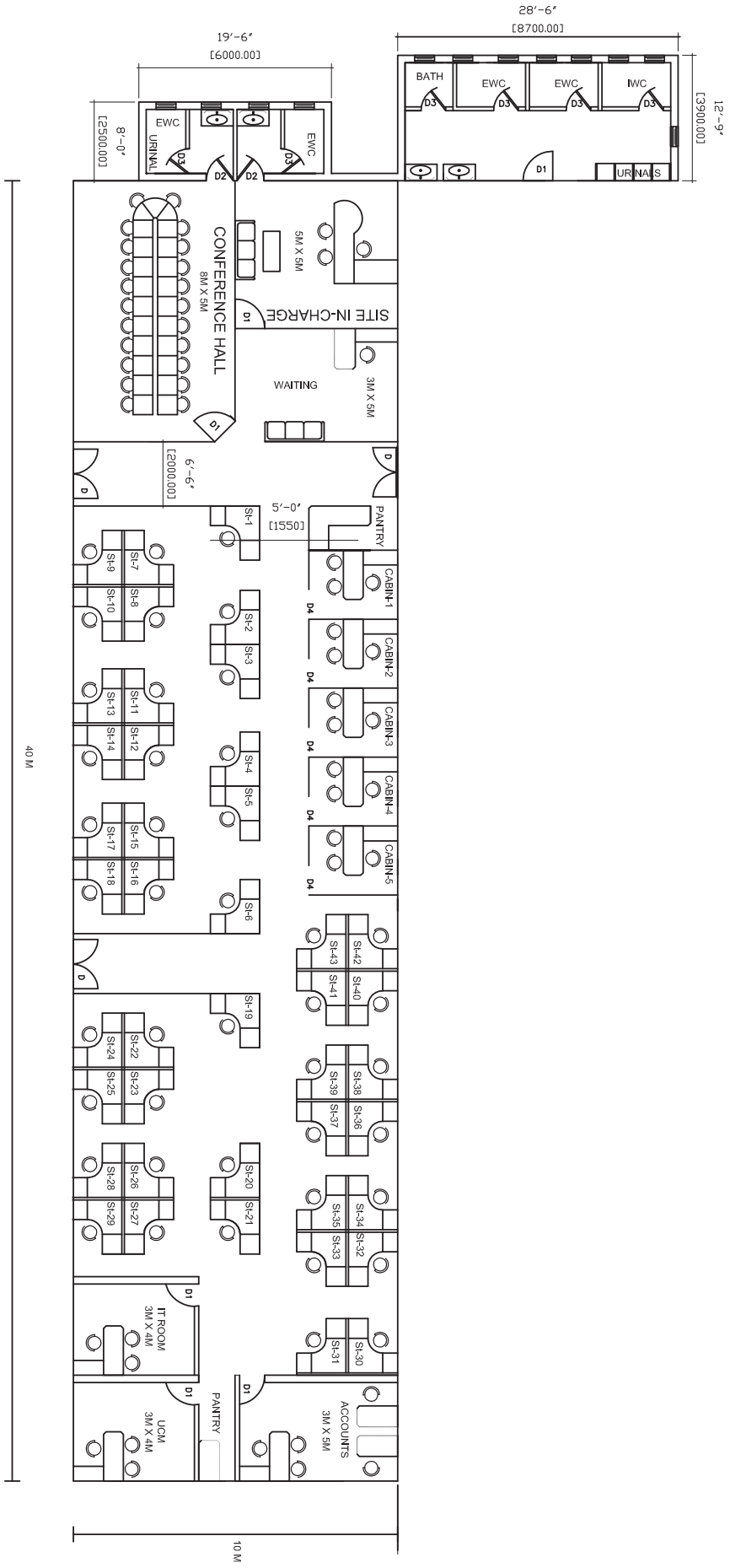
6. Quoted Price shall be inclusive of all the above.

7. The materials 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. All taxes, levies and duties on construction materials will be on contractor's account. After completion of work, the building and areas around them should be cleared of all rubbish, debris etc. and handed over in fit condition for occupation.

## **6.0 DRAWINGS**

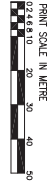
Following drawings are enclosed strictly for the guidance of the Bidders:

1. Typical cross section of the closed store shed.
2. Typical Civil foundation drawing for closed storage shed.
3. Schematic diagram of Electrical closed storage shed.

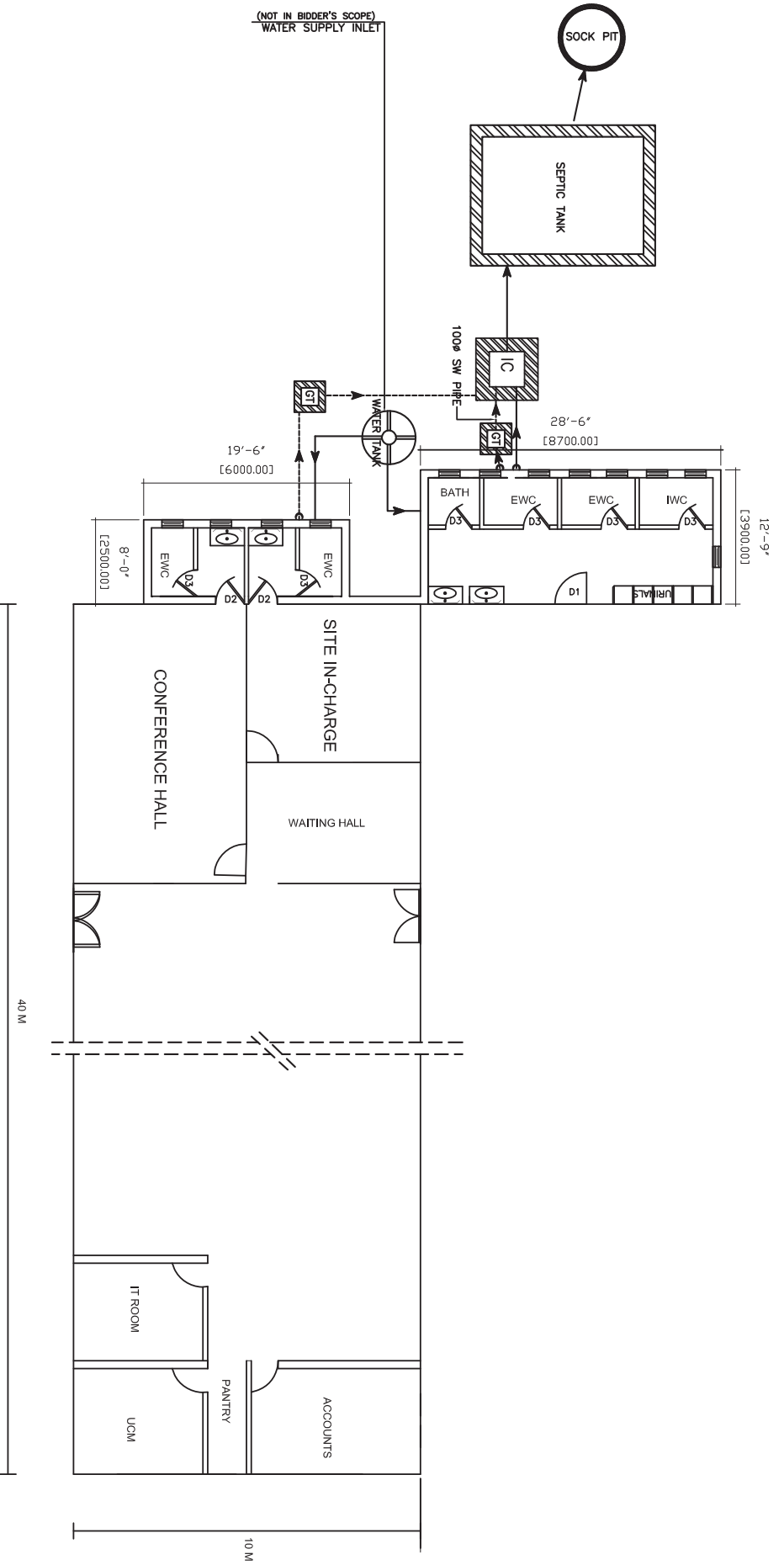


- LEGEND
- CHAIRS FOR SENIOR EXECUTIVES -11 NOS
  - CHAIRS FOR EXECUTIVES -18 NOS
  - CHAIRS FOR VISITORS -20 NOS
  - CONF. HALL CHAIR -1 NOS
  - CONF. HALL TABLE -1 NOS
  - 4-SEATER CABINETS -4 NOS
  - 2-SEATER CABINETS -3 NOS
  - PANTRY TABLE -1 NOS
  - SITE M.CHARGE TABLE -1 NOS
  - SEVERER SOAP -2 NOS
  - FILE CABINET OPTIMIZER -1 NOS

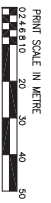
NOTE:-  
ALL DIMENSIONS SHOWN ARE ASSUMED AND SHOULD BE VERIFIED ACCORDINGLY




		<b>BHARAT HEAVY ELECTRICALS LTD</b> POWER SECTOR - SOUTHERN REGION CHENNAI	
<b>TITLE:</b> SCHEMATIC SKETCH OF OFFICE BUILDING			
DEPT.	CIVIL	STRUCTURAL	
DATE	26-11-2010		
BHEL DRAWING NO. BHEL-PSSR:PMK-07C-001		SHEET 1 OF 1 REV 00	



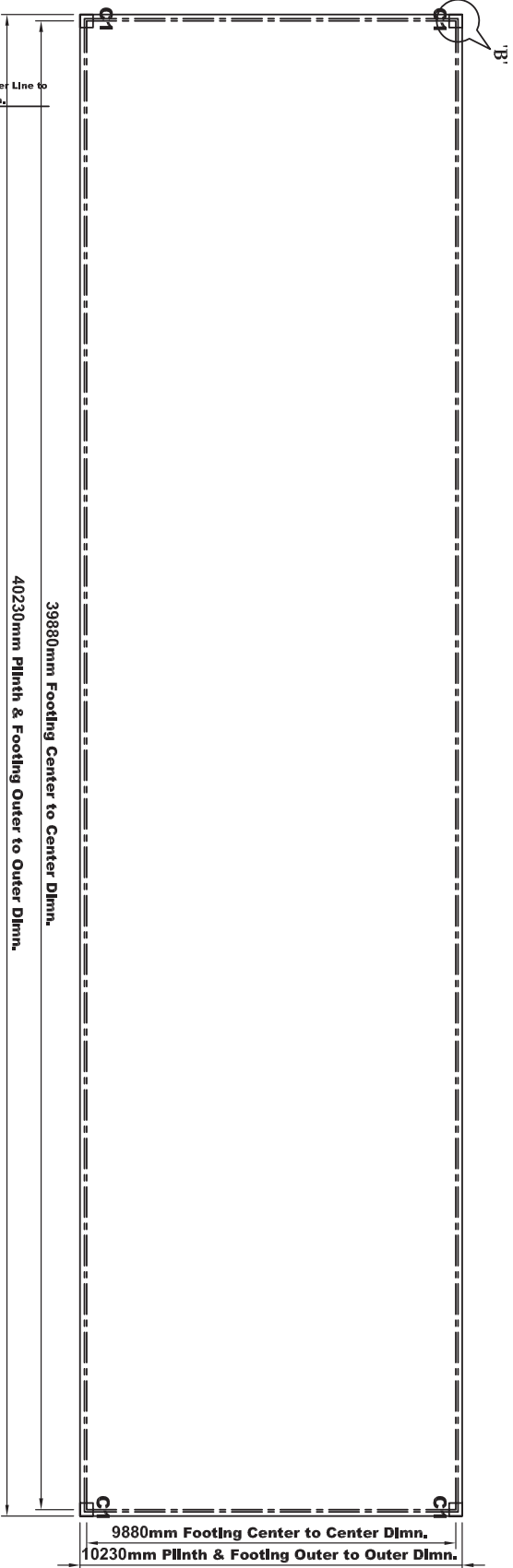
NOTE:-  
ALL DIMENSIONS SHOWN ARE ASSUMED AND SHOULD BE VERIFIED ACCORDINGLY



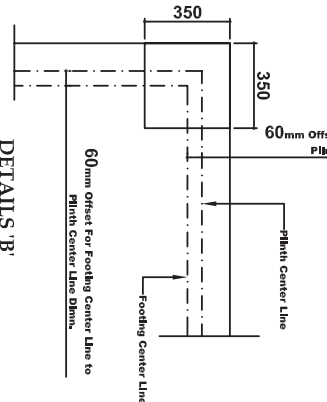
		<b>BHARAT HEAVY ELECTRICALS LTD</b> POWER SECTOR - SOUTHERN REGION CHENNAI	
<b>TITLE :</b> <b>WATER SUPPLY &amp; SANITARY SYSTEM-LAYOUT</b>			
DEPT.	CIVIL	STRUCTURAL	
SIGN			
DATE	26-11-2010		
<b>BHEL DRAWING NO.</b> BHEL.PSSR.PMx.OFC.002		SHEET 1 OF 1 REV. 00	







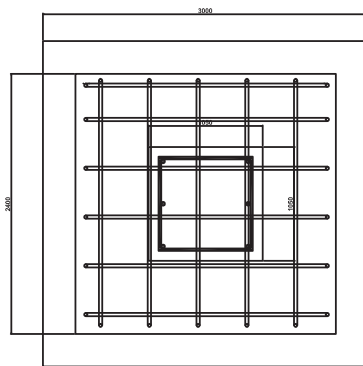
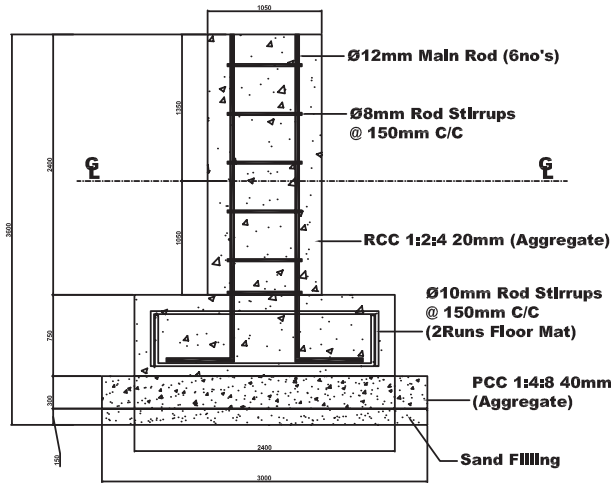
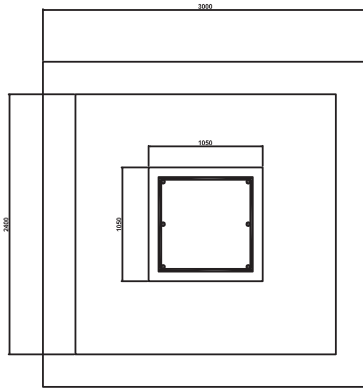
**DETAILS OF FOOTING**



**DETAILS 'B'**

**Note : All Dimensions are In mm**

		<b>BHARAT HEAVY ELECTRICALS LTD</b> POWER SECTOR – SOUTHERN REGION CHENNAI	
<b>TITLE :</b> DETAILS OF FOOTING			
DEPT. SIGN	CIVIL	STRUCTURAL	
DATE	26-11-2010		
<b>BHEL DRAWING NO</b> BHEL/PSR/PAK/CR/005		SHEET 1 OF 1 REV. 00	



**C1**

ALL DIMENSION ARE IN MM



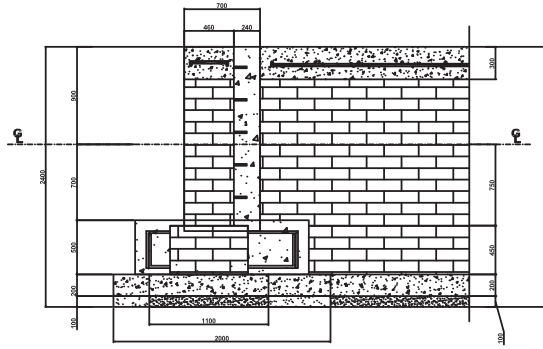
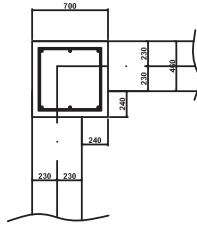
PSSR

**BHARAT HEAVY ELECTRICALS LTD**

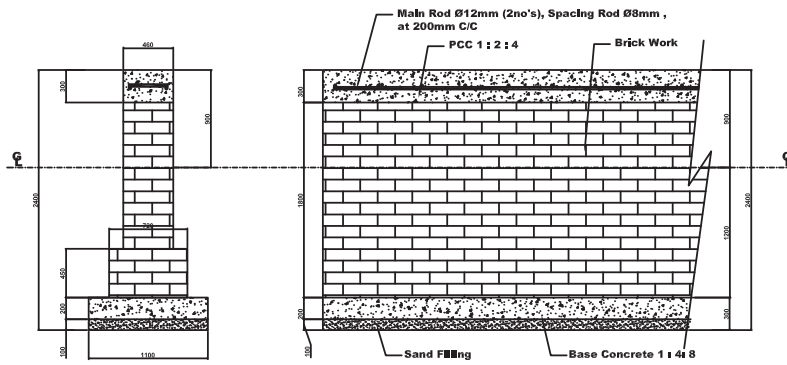
POWER SECTOR – SOUTHERN REGION  
CHENNAI

**TITLE :**  
**FOOTING CROSS SECTIONAL VIEW - C1**

DEPT.	CIVIL	STRUCTURAL		BHEL DRAWING NO.	
SIGN				BHEL: PSSR: PMX: OFC: 006	
DATE	26-11-2010		SHEET	1 OF 1	REV. 00



VIEW 'A'



PLINTH CROSS SECTIONAL VIEW

ALL DIMENSION ARE IN MM



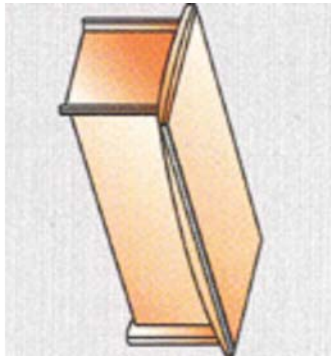
PSSR

**BHARAT HEAVY ELECTRICALS LTD**

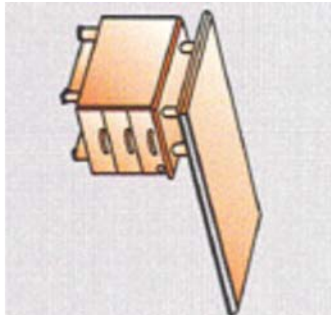
POWER SECTOR – SOUTHERN REGION  
CHENNAI

**TITLE :**  
**PLINTH & FOOTING CROSS SECTIONAL VIEW - A**

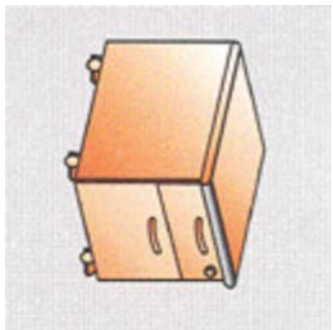
DEPT.	CIVIL	STRUCTURAL		BHEL DRAWING NO.	
SIGN				BHEL: PSSR: PMX: OFC: 007	
DATE	26-11-2010			SHEET	1 OF 1



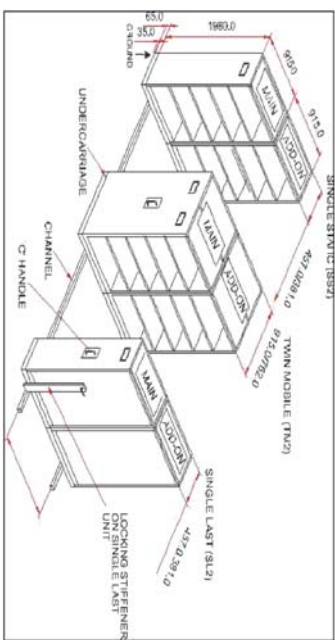
Desk-W180xD90xH75



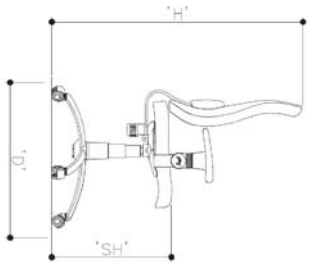
Fixed side return Desk  
W120xD60xH72



Mobile pedestal  
W120xD60xH72

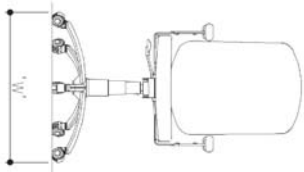


**PULL - PUSH TYPE OPTIMIZER**



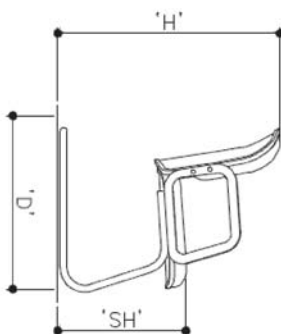
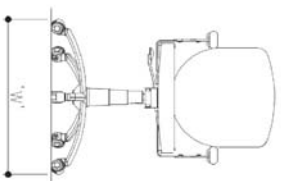
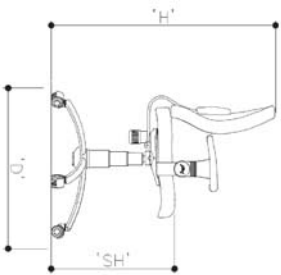
**Chair for Senior executives**

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



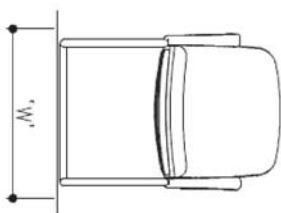
**Chair for Executives & Conf. hall**

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



**Chair for visitors:**

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



NOTE:-

ALL DIMENSIONS SHOWN ARE ASSUMED AND SHOULD BE VERIFIED ACCORDINGLY



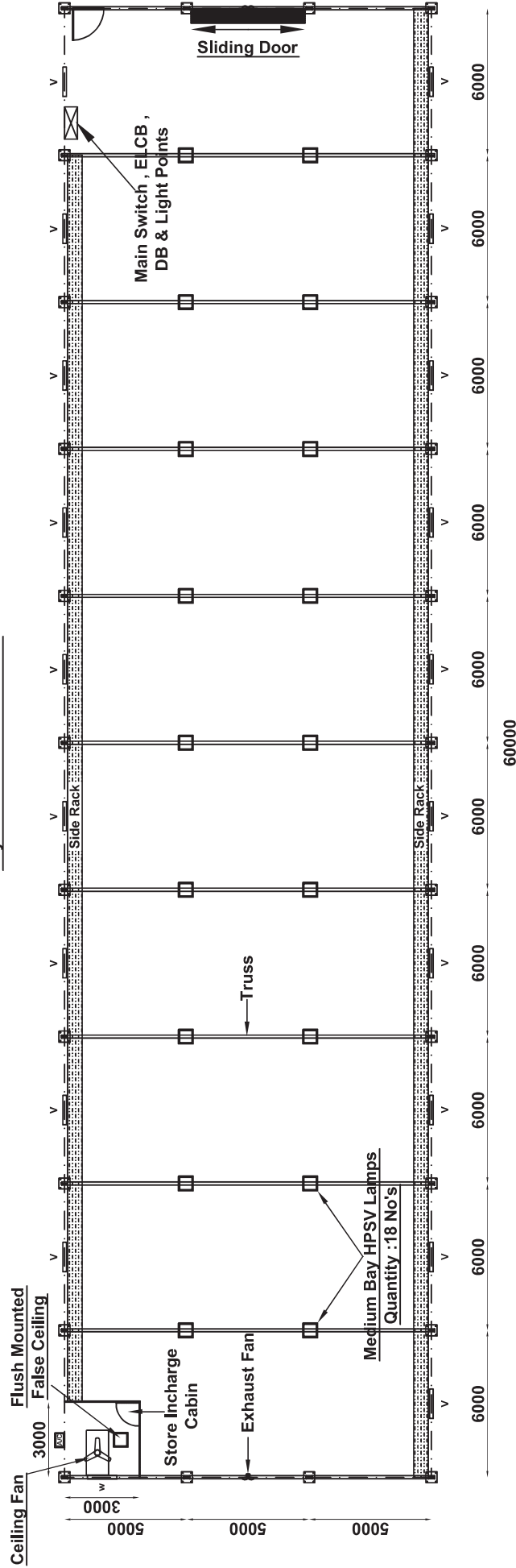
**BHARAT HEAVY ELECTRICALS LTD**  
POWER SECTOR - SOUTHERN REGION  
CHENNAI

TITLE :

**FURNITURE DRAWINGS**

DEPT.	CIVIL	STRUCTURAL		<b>BHEL DRAWING NO.</b> BHEL-PSSR-PMK-0FC-008
SIGN				
DATE	26-11-2010			REV. 00

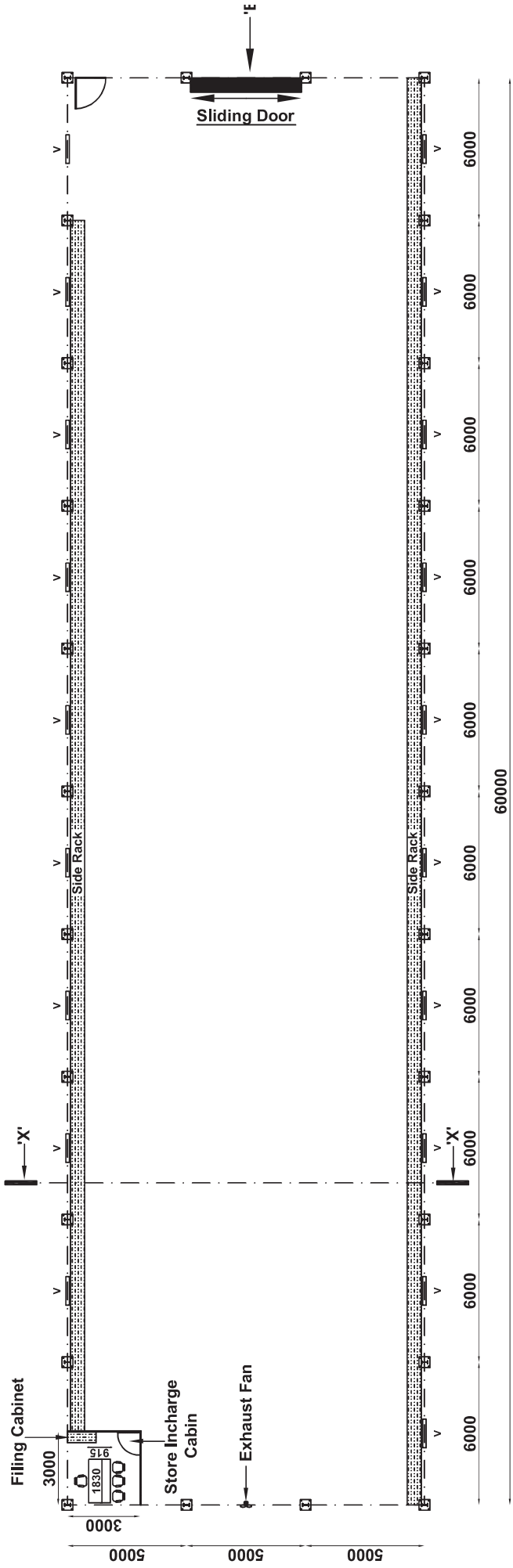
Layout of Closed Store Shed



Electrical Layout

CLIENT : <b>BHEL ( PSSR )</b> PROJECT : CLOSED STORE SHED	DRAWN BY :	CHECKED BY :	DWG NO : BHEL/PSSR/PROJ/CVL/PEB/005	SCALE : NTS
	DESIGNED BY :	SIZE : 60 X 15 X 6M HT.	DATE : 08.04.2010	PROJECTION : 
			REV. NO : 0	

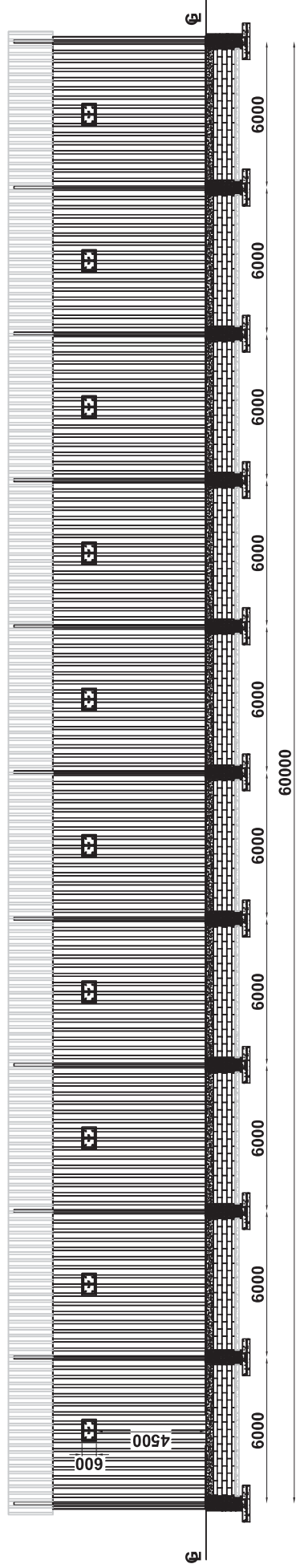
Layout of Closed Store Shed



↑ 'A'

PLAN

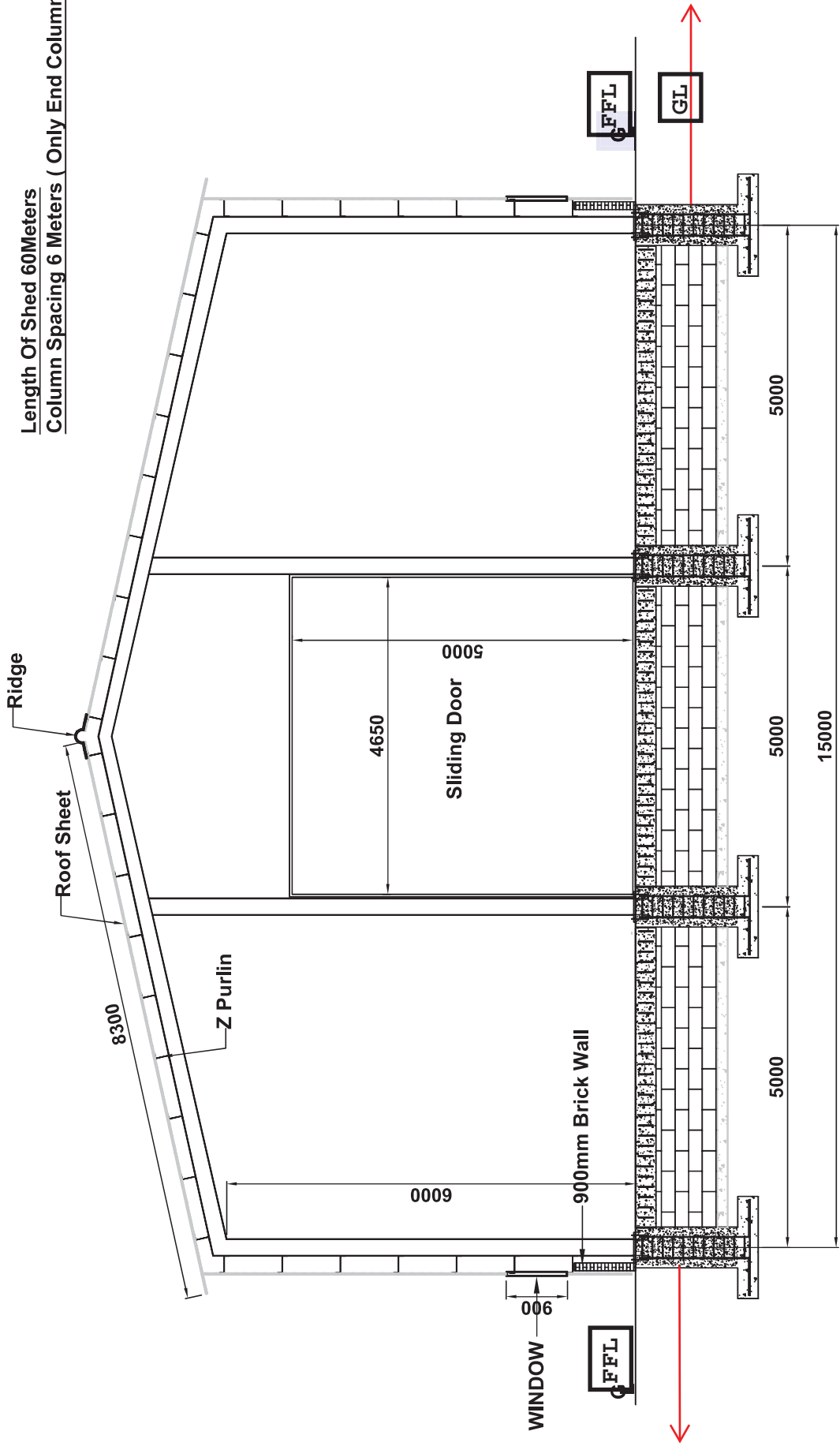
CLIENT : <b>BHEL ( PSSR )</b> PROJECT : CLOSED STORE SHED	DRAWN BY :	CHECKED BY :	DWG NO : BHEL/PSSR/PROJ/CVL/PEB/006	SCALE : NTS
	DESIGNED BY :	SIZE : 60 X 15 X 6M HT.	DATE : 08.04.2010	PROJECTION : 
			REV. NO : 0	



VIEW 'A'

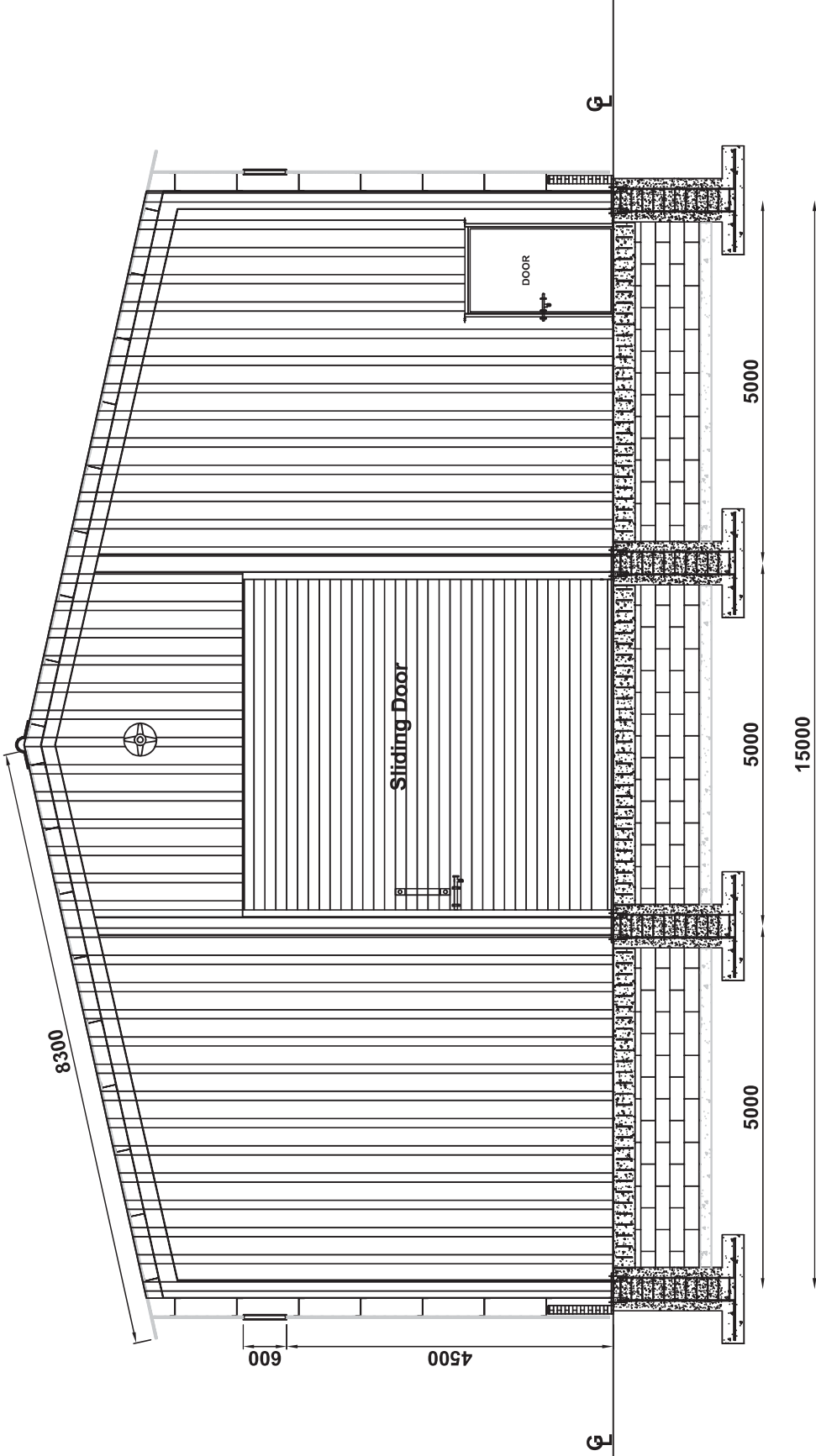
CLIENT : BHEL ( PSSR ) PROJECT : CLOSED STORE SHED	DRAWN BY :	CHECKED BY :	DWG NO : BHEL/PSSR/PROJ/CVL/PEB/007	SCALE : NTS
	DESIGNED BY :	SIZE : 60 X 15 X 6M HT.	DATE : 08.04.2010	PROJECTION : 
			REV. NO : 0	

Length Of Shed 60Meters  
 Column Spacing 6 Meters ( Only End Columns )



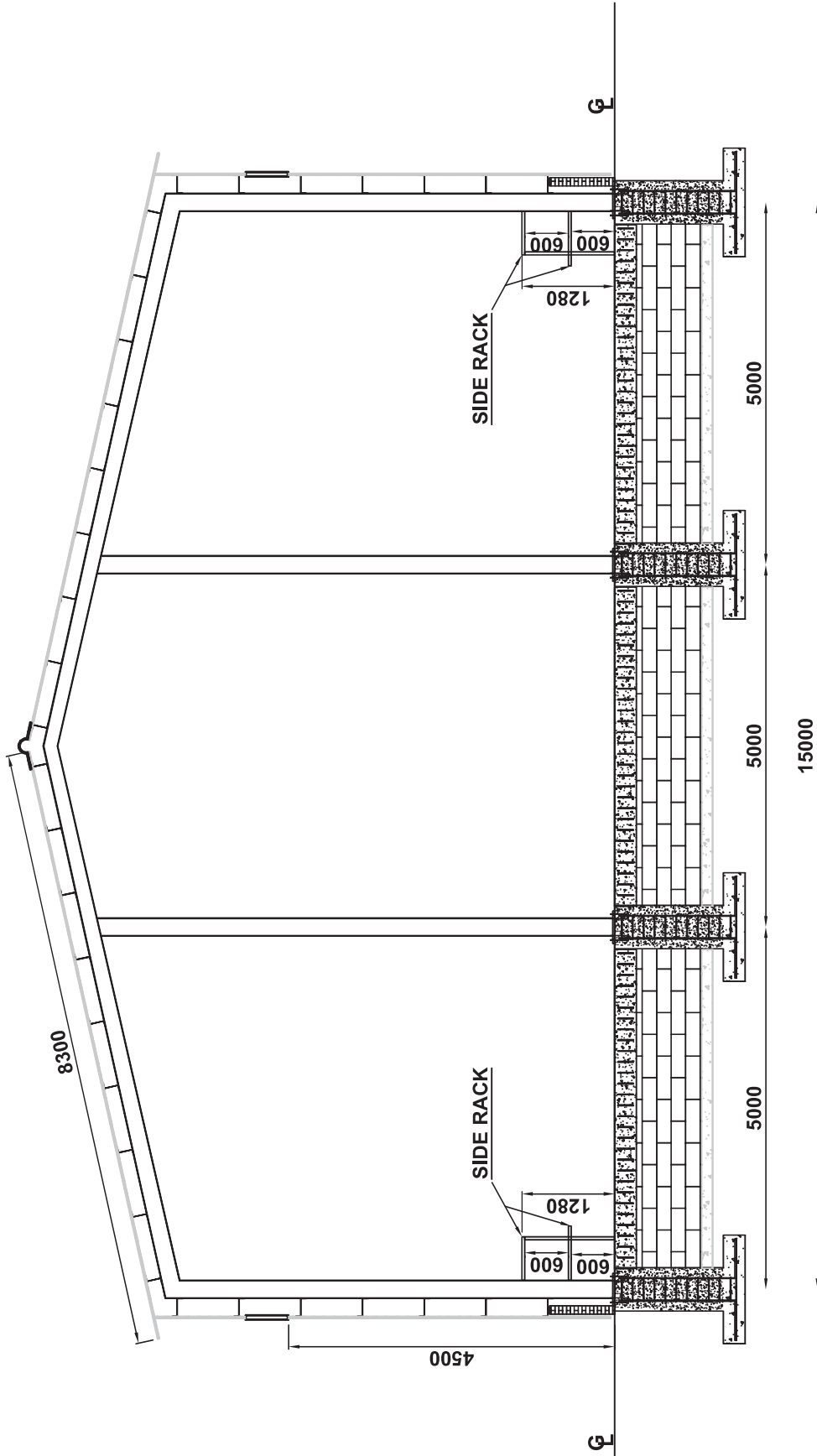
ELEVATION

CLIENT : BHEL ( PSSR ) PROJECT : CLOSED STORE SHED	DRAWN BY :	CHECKED BY :	DWG NO : BHEL/PSSR/PROJ/CVL/PEB/008	SCALE : NTS
	DESIGNED BY :	SIZE : 60 X 15 X 6M HT.	DATE : 08.04.2010	PROJECTION : 
			REV. NO : 0	



VIEW 'B'

CLIENT: BHEL ( PSSR ) PROJECT : CLOSED STORE SHED	DRAWN BY :	CHECKED BY :	DWG NO : BHEL/PSSR/PROJ/CVL/PEB/009	SCALE : NTS
	DESIGNED BY :	SIZE : 60 X 15 X 6M HT.	DATE : 08.04.2010	PROJECTION
			REV. NO : 0	



SECTIONAL VIEW AT - 'X' - 'X'

CLIENT : BHEL ( PSSR ) PROJECT : CLOSED STORE SHED	DRAWN BY :	CHECKED BY :	DWG NO : BHEL/PSSR/PROJ/CVL/PEB/010	SCALE : NTS
	DESIGNED BY :	SIZE : 60 X 15 X 6M HT.	DATE : 08.04.2010	PROJECTION : 
			REV. NO : 0	