

**Indian Institute of Astrophysics  
Koramangala, Bangalore-560034**

**TENDER DOCUMENT**

**Tender Notice No: 04/IIA/CIVIL/ Ban/Hostel/Interior/ /2012-13**

**Name of the work: Interior work at Hostel rooms above  
Stores building, IIA, Bangalore.**



**Indian Institute of Astrophysics**  
**Koramangala, Bangalore-560 034**

**Tender Notice No: 04/IIA/CIVIL//Ban/Hostel/Interior /2012-13. Dated 16.08.2012**

The Indian Institute of Astrophysics invites sealed item rate tenders on behalf of The Director in “Two part” in the prescribed form from appropriate registered contractors in state PWD, CPWD, MES, Scientific institutions and private body competent contractors who have executed works of similar nature.

<b>Sl. No</b>	<b>Name of the work</b>	<b>Estimated cost in Rs.</b>	<b>Time for completion</b>	<b>EMD</b>	<b>Cost of tender document</b>
1.	Interior work at Hostel rooms above Stores building, IIA, Bangalore.	17.40 Lakhs	2 Months	Rs.35,000/-	Rs.1000.00

The Tender Document can be viewed and downloaded from our website [www.iiap.res.in/tenders.htm](http://www.iiap.res.in/tenders.htm) The interested tenderers may at their option down load the same, as “NO” hard copies of Tender document shall be provided from this office and submit their offers along with EMD (refundable) & Tender fee (non-refundable) prescribed therein, only in the form of Demand Draft drawn in favour of Director, IIA.

The Offers should be submitted in **two sealed covers one super scribed “Technical Bid” and other “Price Bid”**. Both covers shall be put in another sealed cover super scribing the envelope with “**Tender for Interior work at Hostel rooms above Stores building, IIA, Bangalore, Notice No. and due date**”, shall be submitted addressed to **The Director, Indian Institute of Astrophysics, Bangalore – 560 034**. The last date of submission of bid is **07.09.2012 on or before 3:00 pm**. The Technical bids will be opened at 3.30 pm. on the same day in the presence of attending tenderers or their authorized representatives.

After opening of Technical bid, the capability and suitability of the bidders shall be evaluated and Price bid of the qualified bidders shall only be opened in the presence of the attending bidders. The date of opening of Price bid will be informed to the qualified bidders.

**Following are the Qualifying Criteria:**

1) Should have completed at least one similar work costing not less than Rs.15.00 lakhs including Civil & Electrical during previous 3 Years for Government / Semi Government/Reputed corporate clients.

Or

Three similar works each costing not less than Rs 6.00 lakhs including Civil & Electrical, during previous three Years for Government / Semi Government/Reputed corporate clients. The intending Bidders shall furnish the relevant experience certificates duly signed by the competent Authority not less than the rank of Executive Engineer.

2) The tenderers should submit latest Audited Balance Sheet duly certified by the Chartered Accountant and also the latest TDS Certificate indicating the Income Tax deducted by the client for the execution of similar works.

The Director, IIA reserves the right to accept or reject any or all tenders without assigning any reason thereof.

**Administrative officer  
For Director**

## **Tender for the work of “Interior work at Hostel rooms above Stores building, IIA, Bangalore”**

### **Conditions of contract.**

Sealed item rate tenders are invited by Indian institute of Astrophysics for the Interior work at Hostel rooms above stores Building, Koramangala, Bangalore.

<b>Estimated cost</b>	:	Rs. 17.40 Lakhs (Seventeen lakhs Forty thousand Only)
<b>Earnest money deposit</b>	:	Rs.35,000/- (Rs. Thirty Five thousand only) in the form of Demand draft/ Banker’s cheque/pay order drawn in favour of the Director, Indian Institute of Astrophysics, Koramangala, Bangalore. Tenders without EMD will be rejected.
<b>Time of completion</b>	:	Two Months.
<b>Period of commencement</b>	:	7 days from the date of receipt of work order
<b>Percentage of retention money</b>	:	5% to be deducted from each RA bill and shall be released as under (i) (50% on completion of works and along the final bill (ii) Balance 50% less recovery, if any towards the cost of defects rectified by employer due to lack of response of the contractor on completion of defects liability period and on certification by the Engineer -in charge.
<b>Defects liability period</b>	:	12 Months.
<b>Amount of liquidated damage</b>	:	1 %(one percent) per week subjected to the maximum of 10% of the value of contract.
<b>Escalation</b>	:	In view of the short duration of the contract, no escalation will be paid to the contractor on account of changes in the market prices of any items of work or changes in the cost of living indices etc.

The Director, Indian institute of Astrophysics reserves the right to reject any or all the tenders without assigning any reason whatsoever.

The scope of the work and explanatory notes given below are neither complete nor exhaustive but are added to assist the contractor to understand the scope of the work. The site is located at 2<sup>nd</sup> floor of Stores Building, IIA campus at Koramangala. Tenderers are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their tenders as to nature of the ground and subsoil, the form and

nature of the site, the means of access to the site. A tenderer shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charges consequent on any misunderstanding or otherwise shall be allowed, in general shall themselves obtain all necessary information

The tenderer shall be responsible for arranging and maintaining at his own cost all materials, tools and plants, water, electricity, facilities for workers, safety norms and all other services required for executing the work

Timely completion of work and quality of workmanship are of prime importance and the work shall be completed within the stipulated period.

I/ We have read the tender notice, specifications, schedule, drawings, general rules and all other contents of the tender conditions, and understand that you are not bound to accept the lowest or any tender you may receive.

I/ we hereby tender for the execution for the director for the work specified above within the time specified above, at the rates specified in the attached schedule of quantities and in all respects with these specifications, design, drawings and instructions.

I/we agree that should I/we fail to commence the work specified in the above memorandum an amount equal to amount of earnest money mentioned in the form of invitation of tender shall be absolutely forfeited to the Director.

Dated: -----

Signature of the contractor  
With stamp

Postal address.

Witness:

Address.

Occupation.

## **General conditions of contract.**

### **Item rate tender for works.**

- The institute reserves the right to alter the scope /or reduce quantum of work before issue of work order and the contractor shall not have any claim what so ever on this account.
- Rates quoted by the contractor in item rate tender in figures and words shall be accurately filled in so that there is no discrepancy in the rates written in figures and words. However if a discrepancy is found, the rates that correspond with the amount worked out and entered in the bill of quantity by the contractor shall be taken as correct.
- If the contractor does not work out the amount of an item or it does not correspond with the rate written either in figures or words, then the rate quoted by the contractor in the words shall be taken as correct.
- When the rates quoted by the contractor in figures and in words tally but the amount is not worked out correctly the rate quoted by the contractor will be taken as correct and not the amount.
- The contractor shall take all precautionary measures to prevent entry of dust, dirt and noise pollution to the adjacent buildings and keep the premises neat and tidy, remove surplus materials and rubbish and shall not cause inconvenience to the public. If the contractor or his working people or servants shall break, deface, injure or destroy any part of a building in which they may be working or any buildings, road, kerbs, fence, enclosure, water pipes cables, drains, electric and telephone posts or wire, trees grass or garden. The cost of any such damage and risks arising out of this shall be entirely borne by the contractor.
- The contractor each month on or before the date fixed by the Engineer- in charge shall submit a bill. The Engineer-in-charge and the contractor or their respective representatives may record all the measurements of the work jointly. The measurements will be taken at site, as per latest IS code of practice for measurements. All measurements shall be taken with steel tapes only.
- The Engineer-in-charge shall have full powers to the removal from the premises of all materials and bad workmanship, which in his opinion are not in accordance with the specifications.
- The Engineer-in-charge may require the contractor to dismiss or remove from the site of the work any person or persons in the contractors employ upon the work who may be in competent or misconduct himself.
- For working on Sundays, holidays and late hours prior permission will be accorded by the Engineer-in-charge on the application made by the contractor.
- All works to be executed under the contract shall be executed under the direction and subject to the approval in all respects of the Engineer-in-charge who shall be entitled to direct at what point or points and in what manner they are to be commenced and from time to time carried on.
- The contractor shall treat all materials obtained during dismantling of a structure, excavation of the site for a work etc. as Institute's property and such materials shall be disposed off to the best advantage of the Institute.
- The contractor shall execute the whole and every part of the work in the most substantial and workman like manner and in strict accordance with the specifications of the CPWD / DOS / Bureau of Indian Standards. In case of any

class of work for which there is no such specifications the contractor shall carry out the work in all respects in accordance with the instructions in writing of the Engineer- in-charge.

- The Engineer-in-charge shall have powers to make any alterations in, omissions from, additions to or substitutions for the original specifications, drawings, designs and instructions that may appear to him necessary or advisable during the progress of the work and the contractor shall carry out the work in accordance. The rates for such additional, altered or substituted items of work shall be worked out in accordance with the standard procedure followed in CPWD / DOS.
- If at any time after the commencement of the work, the Director shall for any reason whatsoever not require the whole thereof as specified in the tender to be carried out, the Engineer-in-charge shall give notice in writing of the fact to the contractor who shall have no claim to payment of compensation whatsoever on account of any profit or advantage which he might have derived from the execution of the work in full, but which he did not derive in consequence of the full amount of the work not having been carried out, neither shall he have any claim for compensation by reason of any alterations having been made in the original specifications, drawings, designs and instructions which shall involve any curtailment of the work as originally contemplated.
- The contractor shall obtain a valid license under the contract labour (R&A) act 1970 and the contract labour (Regulation & Abolition) central rules, 1971 before the commencement of the work and continue to have a valid license until the completion of the work. No labour below the age of eighteen years shall be employed on the work. The contractor shall pay to labour employed by him either directly or through sub contractors, wages not less than fair wages as defined in the provision of the contract labour (R&A) act 1970 and the contract labour (R&A) central rules 1971 wherever applicable.
- The contractor shall at his own expense arrange for the safety provision as per safety code framed from time to time and shall at his own expense provide for all facilities in connection therewith.
- The contractor shall comply with all the provisions of the payment of Wages act 1936, Minimum Wages act 1948, Employees Liability Act 1938, Workmen's Compensation Act 1923, Industrial Disputes Act 1961 and the Contractors Labour (R&A) Act 1970 or the modifications thereof or any other laws relating thereto and the rules made there under from time to time. The regulations aforesaid shall be deemed to be a part of this contract and any breach thereof shall be deemed to be a breach of this contract. Security deposit will not be refunded till clearance certificate from Labour Officer is obtained by contractor.
- The contractor shall make his /their own arrangements for water required for the works and nothing extra will be paid for the same, as the water available from the Institute source may not be sufficient to meet the construction.
- The entire work is to be completed within the period stipulated i.e. two months from the 15th day of issue of letter of intent/work order. The period includes monsoon period also. Time shall be the essence of the contract. After the work awarded, the contractors shall furnish detailed time schedules for the approval of the Engineer-in-charge which after approval shall form part of the contract and are to be strictly adhere to.
- The maintenance period for the work shall be twelve months and any defects noticed during the period shall have to be rectified by contractor at his cost, failing which the action taken for maintenance Engineer-in-charge shall be final over which the contractor will not have any claim.
- The contractor shall extend all co-operations to the contractors executing works such as electrical, air conditioning etc who might be working at the site and shall permit to use scaffolding etc already put up by him.
- The Engineer-in-charge will have the right to get any item of the work included in

this tender or not executed through other agencies. Schedule of probable quantities in respect of the work and specifications are enclosed. The schedules of probable quantities are liable to alterations by emission, deduction or additions at the discretion of the Engineer-in-charge.

- The rates quoted by the tenderer in the schedule shall be inclusive of all taxes and levies payable under respective statues, inclusive of all sales taxes, sales tax on components/ materials/ consumables and also sales tax on works contract in pursuant to constitution (forty sixth amendment) act 1982, control duty and for any other duty levied by the government or other public bodies. The rates shall be firm and shall not be subject to exchange variations, labour conditions or any condition.
- Sales tax will be deducted from the amount payable to the contractor as per the relevant sales tax act, applicable for the contracted work as amended from time to time, at the rates specified from time to time.
- Samples of all materials to be incorporated in the works shall be submitted to the Engineer-in-charge for his approval without claiming any extra cost. Materials not confirming strictly to the samples are liable to be rejected.
- The contractor shall prepare a CPM / PERT /BAR chart/ Detailed estimate programme within a week time of issue of work order.
- Unless otherwise provided in the schedule of quantities the rates tendered by the contractor shall be all inclusive and shall apply to all heights, lifts, leads and depths of the building and nothing extra shall be payable to him on this account.
- Sample of various materials required for testing shall be provided free of charge by the contractor. Testing charges, if any unless otherwise provided, shall be borne by the department. All other expenditure required to be incurred for taking the samples, conveyance, packing etc. shall be borne by contractor himself.
- For the purpose of recording measurements and preparing running account bills, the abbreviated nomenclature shall be accepted along with the item number.
- The contractor shall along the tender submit a schedule of machinery to be used on the work in support of his assurance to adhere to the time schedule specified in the proforma given.
- The tenderers shall also submit along with the tender a list of similar major works as also the approximate cost of each work carried out by him in the past and are being carried out for different government department or public bodies along with the details of addresses of the agency to whom carried out in the proforma given.
- I /We declare that the work will be carried out as per the specifications in tender document and as per the specifications said above. The items of work not covered in the specifications said above will be carried out as per the specifications in the relevant CPWD specifications, and if not covered in CPWD specifications the work will be carried out as in the relevant IS specifications, and if not covered in the any of the above, the work will be carried out as directed in writing by the Engineer- in charge.
- I / We declare that the rates quoted by me/us are on the basis of the above.

Dated: -----

Signature of the contractor  
With stamp



**TENDERER'S EXPERIENCE**

Tenderer shall furnish here a list of similar jobs executed by him to whom a reference may be made by the Indian Institute of astrophysics in case such a reference is necessary.

Sl. No	Name & description of work	Value of work and date.	Period of construction and date.	Client persons to whom reference may be made.

Seal of company

Signature

Designation

Company

### **TOOLS AND EQUIPMENT LIST**

The tenderer shall indicate herein below the equipment he has in possess and the equipment he proposes to bring to the site, in case the work is awarded to him.

Sl.No.	Type and Description of the Equipment	Numbers the bidder has in possession	Numbers he propose to bring on to site

Tenderer hereby confirms that the quantity and type of tools he will employ for construction will not be less than those listed above and agree to bring more equipment if so warranted in the opinion of the Engineer-in-charge.

Seal of company

Signature

Designation

Company

Date

# TECHNICAL SPECIFICATIONS

## I - MATERIALS

### 1. HARDWARE & METAL

All hardware used in the work shall be of approved manufacture, make and brand. The contractor shall produce samples for approval materials are to be procured only after receipt of approval of samples. Fittings generally shall have satin chrome or anodized finish, unless otherwise specified, and shall be suitable for their intended purpose in accordance with Architects/ INSTITUTE's approval.

Screws are to match the finish of the articles to be fixed, and to be round or flat-headed or counter sunk as required.

The Contractor shall cover up and protect all brass and bronze surfaces with a layer of thick white grease or other suitable protective material and renew the same as necessary. Such protective layer shall be subsequently cleaned and cleared away on completion of the work.

Aluminium and stainless steel shall be of approved manufacture, make and brand and shall be suitable for its particular application. Generally, of Aluminium shall have anodized finish or powder coating as specified shall comply with the samples approved by the Architects/INSTITUTE. All stainless steel sheets shall be 304 S.S Japan or equivalent as specified but shall not be less than 1.6 mm (16 SWG) thick or otherwise specifically prescribed.

All steel, brass bronze Aluminium and stainless steel articles shall be subjected to a reasonable test for strength, if so required by the Architects/ INSTITUTE, at the Contractor's expense.

All brazing and welds are to be executed in a clean and smooth manner, rubbed down and completed in the flattest and tidiest way, particularly when exposed.

Chromium plating shall be in accordance with BS 1224 or as per approved specifications for normal outdoor conditions and shall be on a base material of copper or brass.

### 2. GLAZIER

All glass to be of approved manufacture, complying with IS 3548 as per approved quality and sample and shall be of the selective qualities specified and free from bubbles, smoke vanes, air holes and other defects.

Polished plate glass shall be 'glazing glass' (G.G) quality; that for mirrors shall be 'silvering quality' (S.Q) conforming to IS:3438 or as per approved sample and quality. The compound for glazing to metal is to be a special non-hardening compound manufactured for the purpose and of a brand and quality approved by the Architects /INSTITUTE.

While cutting glass, proper allowance shall be made for (thermal) expansion. Each pane of glazing shall be in one whole sheet. On completion of work, clean all glass inside and out, replace all cracked scratched and broken panes and leave in good condition

### 3. PAINTS & POLISHES

All material required for the works shall be of specified and approved manufacture delivered to the site in the manufacturer's containers with the seals intact and clearly marked with the manufacturer's name or trademark and description of the contents and colour.

Spray painting with approved machines will be permitted only if written approval has been obtained from the Architects /INSTITUTE prior to painting. No spraying will be permitted in the case of priming coats nor where the soiling of adjacent surfaces is likely to occur. The nozzle and pressure shall be selected and adjusted so as to give an even shade. The paint used for spraying is to comply generally with the relevant BIS specification and shall be specially suitable for spraying. Thinning of ready mixed paint made for brushing shall not be allowed.

Wood preservative shall be 'Solignum' or other equal and approved impregnating wood preservative. All concealed wood work shall be treated with wood preservative.

All brushes, tools, pots, kettles etc. used in carrying out the work shall be clean and free from foreign matter and are to be thoroughly cleaned out before being used on a different type or class of material.

All iron or steel surfaces shall be thoroughly scraped and rubbed and cleaned out with wire brushes and shall be entirely free from rust, scales etc. before the priming coat is applied.

Surfaces of new wood work which is to be painted are to be rubbed down and cleaned down to the approval of the Architects /INSTITUTE.

Surfaces of previously painted woodwork which are to be painted are to be cleaned down with soap and water, detergent solution or approved solvent to remove dirt, grease etc. whilst wet. The surfaces shall be flattened down with a suitable abrasive and then rinsed and allowed to dry. Minor areas of defective paint shall be removed by scraping back to a firm edge and the exposed surface touched in with primer as described and topped with putty. Where woodwork has been previously painted or polished and is to be newly polished, scraping, burning off or rubbing down in the surface shall be satisfactorily done.

Surfaces of previously painted metal that are to be painted afresh are to be cleaned down and flattened. Minor areas of defective paint and any rust and loose scale shall be removed completely by chipping, scraping and wire brushing back to the bare metal and touched up with primer, as described. Where glued joinery and carpentry work is likely to come in contact with moisture, the glue shall be waterproof. The use of animal glues is not permitted.

#### 4. TIMBER

Timber shall be cut to the required sizes and lengths as soon as practicable after the works are begun and stored under cover to allow air circulation freely around it. Joinery is to be prepared immediately after the placing of the contract, framed up (but not bonded) and stored until required for fixing in position, when it is to be bonded and wedged up. Any portion that warp or develop shakes or other defects are to be replaced before wedging up. The whole work is to be formed and finished in a proper and workman like manner in accordance with the detailed drawings and fitted with all necessary metal ties, strap, belts screws etc. Tuning bended joints are to be cross-tongued with teak tongues, and where over 40 mm thick double cross tongued joiner's work generally is to be finished with first class prepared surfaces unless otherwise specified.

Templates, boxes and moulds shall be accurately set out and rigidly constructed so as to remain firm and accurate during the time they are in use.

Grounds are to be clean sawn, free from large knots, splayed as required plugged and fixed to walls etc. as directed.

Wooden plugs are to be cut on the twist. Patent wall plugs or plastic fillings may be in lieu of wood plugs with the approval of the Architects.

Materials conforming to the B.I.S. Specifications or of makes /brands specified below shall be used in the work:

<b>MATERIAL</b>	<b>B.I.S. # /brand</b>
1. Synthetic resin adhesive for construction work in wood	IS:851
2. Veneer: Veneer to have straight grains and will be selected from matching group.	IS:1328-1970
3. Cold setting case in glue for wood	IS:849
4. Laminate	Decolam, Neolux Formica, Greenlam.
5. Hard Wood	Wood of approved quality
6. Hard wood: shall be kiln dried, moisture content less than 12%, free from wormholes, loose or dead knots or other defects such as warping, splitting; chemically treated with wood preservative of approved manufacture.	Wood of prescribed species and approved quality
7. Plywood : plywood shall be closed grain weatherproof ply, phenol bonded.	Plywood:IS:303-1989 Blockboard: IS:1659-1990 Marine plywood: IS:710-1976

## 5. LOOSE CHAIRS & SOFAS

5.1 Suppliers must study the selected designs in details. Manufactured items must be true to ergonomics, design and proportions.

5.2 Suppliers shall make sample of each item in white (KORA) and fully upholster for approval before making the entire quantity.

5.3 Sample of under carriages shall be shown for approval. Section shall be of correct dimensions and range. Stainless steel items /components shall be of approved quality in AISI Type 304.

5.4 Required thickness of rubber foam (MM foam only) along with polyurethane foam (U-foam only) to be used for back and seat, the thickness may vary to suit the specific designs. However, necessary increase in thickness may have to be done as per Architect's instructions without any extra cost.

5.5 All upholstery work shall be neatly finished including joints stitching, angles etc.

5.6 Samples of upholstery material shall be submitted in triplicate for approval.

5.7 Quoted rates shall include carting, packaging, loading, unloading and delivery at site.

5.8 Quoted rates shall be inclusive of excise, octroi, all taxes including works contract tax, duties etc.

5.9 Natural leather shall be genuine natural leather.

5.10 All wooden sections shall be melamine matt or PU matt in approved shade and colour as specified under each item.

5.11 All internal T.W. frame work shall be of Teak wood All internal metal framework shall be well treated with protective coat of paint.

5.12 The length of upholstery required shall be worked out as per the design of relevant items

5.13 PU Matt finishing [2 pack polyurethane (interior) clear wood finish - Matt]: Sanding and smoothening the surface using abrasive grit No. 36 to 180 sequentially followed by first coat application of 2 Pack Polyurethane (interior) sealer with brush and second coat of 2 Pack Polyurethane (interior) sealer with putty blade to fill up fine pores. After dry sanding with abrasive grit No. 320 application of 2 coats of 2 pack polyurethane (interior) clear top coat matt.

5.14 Melamine (Matt) finishing [Melamine clear wood finish-matt] Sanding and smoothening the surface using abrasive grit No.36 to 180 sequentially followed by first coat application of melamine wood filler with brush and second coat of melamine wood filler with putty blade to fill up fine pores. After dry sanding with abrasive grit No. 220 application of Melamine clear sealer by brush/ spray. After dry

sanding with abrasive grit No. 320 application of 2 coats of Melamine top coat matt.

## **6. GRAPHIC SIGNAGE**

The graphic signage for the entire building is to be of 'Signworld' brand or approved equivalent thereof.

These specifications are only a broad description of the different product like Matrix, Modulex, Allusign, Dibond panels etc. and the fixing profiles or extrusions shall be either Aluminium or PVC etc. as per manufacturer's specifications.

The total area of signage matter in terms of multi-lingual (English, Hindi and Assamese) alphabetical pattern or figures shall be as required by INSTITUTE and there shall be no restriction on the total number of alphabets or figures in each sign board or each strip.

The colour shall be one of the ten shades such as aluminium, grey, white, black, green, blue, red, yellow, light brown or pink and the samples of each panel will have to be got approved by INSTITUTE before execution.

There may be pre-delivery inspection at the factory where the signage is made, if required.

The rate shall include supply and fixing in position at locations and floors in the building as directed by INSTITUTE.

A shop drawing showing details of each of the product ranges as per schedule will have to be got approved before fabrication.

## **7. WORKSTATIONS**

### **7.1 PARTITION PANELS (HEIGHT 1250 MM):**

Unless otherwise shown on drawings, partition height is about 1250 mm. Workstation modules are '+' or 'I' or 'T' or 'L' shaped. Workstation size is approximately 1500 \* 1500 mm.

These shall be free standing and self supporting and shall have an overall thickness of 50 mm. They shall comprise of roll formed frame work of 2 mm thick CRCA profile formed into box sections finished with 50 micron powder coating. The fabric regions shall be upholstered with fabric having a basic cost of not less than Rs.300.00 per meter (1.2 width). The core of this fabric region shall be highly acoustic absorbent /noise reducing in nature and shall comprise of two layers of 25 mm thick batted mineral wool having a density of 60kg./CuM. These two layers of mineral wool are separated by means of a rigid unyielding barrier formed by means of a corrugated septum. This entire core is caged by means of 0.50 mm (26 SWG) thick GP perforated CRCA steel sheets. This arrangement also serves as a magnetic board which enables papers/notices to be put

up and held in position by means of magnets thereby eliminating the need for using pins/tacks, etc. Top trims and bottom fascia panel are powder coated extruded aluminium sections. The bottom portion below the work surface external panel facing the passage is finished in laminate and above work surface with magnetic board. There will be intermediate raceway above work surface and at skirting level. All steel components are subject to seven stage anti rust corrosion resistance pre-treatment followed by powder coating 50 $\mu$  (micron) thickness followed by over-baking. The partition panel should preferably meet the stability standard as per BIFMA (ANSI-BIFMA x 5.5-1998).

The fabric used should conform to colour fasteners test as per BIS 1006 and BIS 2681.

For panel areas which are laminated i.e. side facing the passages or below the level of the work surface, the core comprises of honey comb and is laminated with 1mm thick decorative laminate bonded on a suitable backer.

The top edges of all panels and raceways shall be fitted with a 'top-cap' made from 0.7 mm (22 SWG) thick extruded Aluminium sheets duly shaped and powder coated. These top caps/trims have rounded ends for aesthetic purposes and are fitted on to the slab by means of a top-cap support, which is also made from 1.0 mm (20 SWG) thick aluminium sheets duly powder coated. The panel joinery will be simple and effective in order to install the panels in any configuration desired by the user departments of INSTITUTE.

## 7.2 CABLE MANAGEMENT:

All partition panels shall be provided with a bottom raceway of the lay-in type, with removable covers made from 0.7 mm (22 SWG) thick extruded aluminium duly powder coated fitted on either side. The other components of the raceway shall be made from 2 mm(14 SWG) and 1.2 mm (18 SWG) CRCA powder coated steel sheets. The raceway shall be totally isolated from any combustible materials like fabric to eliminate any risk of fire spreading in case of any sparking due to short circuit. The bottom raceway sub-assembly shall also forms the base of the panels and shall therefore be provided with levelling screws ( $\approx$ 10mm dia) to take care of any variations in the floor level. An additional intermediate raceway will also be provided at the level of the work surface; such raceway will be covered on both sides with 0.7 mm(22 SWG) thick extruded powder coated aluminium covers.

## 7.3 WORK SURFACE:

The work surface shall be 'Pentagon' shaped and preferably in one single piece. Work surfaces shall be made from 25 mm thick phenol bonded prelaminated MDF or exterior grade phenol formaldehyde bonded particle board. The edges of these work surfaces shall be either postformed or bound with PVC edge banding applied by a special machine. The work surface shall be suitably supported on partition panels by means of adequate number of cantilever brackets made from 2.0 mm (14 SWG) thick CRCA powder coated steel sheet. The work surface shall meet the concentrated and distributed static load test and top load cyclic test as per BIFMA and confirm to relevant BIS specifications.



#### 7.4 KEYBOARD TRAYS:

These shall be made from 1 mm (20 SWG) thick CRCA powder coated steel sheets. The tray movement shall be on ball slides for smooth operation. All keyboard shall be provided with collapsible built-in mouse pads on right-hand and/or left-hand sides. The slides should meet out stop test and keyboard trays shall meet cycle test.

#### 7.5 PEDESTAL UNIT:

These shall be made from 1 mm (20 SWG) CRCA steel duly powder coated. The overall size will be 720 mm H x 464 mm W x 580 mm D (height inclusive of castors). The drawer shall be mounted on telescopic ball slides for full length operation and smooth use. Each drawer shall be provided with two box type drawers of each 150 mm height and one drawer with 300 mm height. Drawer units shall be treated with 7-step anti-rust treatment for corrosion resistance, sand blasting and followed by 50 $\mu$  (micron) thick powder coating and oven baking. Drawers shall be with 10 lever cam locks for higher security. The pedestals should meet drawer cycle test, lock test, drawer retention test, slide out stop test interlock test, pull force test for safety and durability.

All the above products should be preferably made and assembled by the manufacturer in his own factory. Preference shall be given to vendors with ISO 9001 certificate. Keeping in mind the Government of India Directives about using environment friendly products, preference shall be given to Vendors having Environmental Certificate like ISO 14001.

#### 7.6 MANUFACTURED ITEMS WHERE CRCA STEEL COMPONENTS ARE USED

All CRCA components shall be treated with 7-step anti-rust treatment for corrosion resistance, sand blasting and followed by 50 $\mu$  (micron) thick powder coating and oven baking, preferably in the vendor's own manufacturing plant.

#### 7.7 LAYOUT DRAWINGS OF WORK STATION

The Offerer may please note that, the layout drawings enclosed are only indicative and the successful offerer is required to prepare a fresh layout drawing to suit to the requirement of the Institute before execution of the work.

#### 8. COMPLIANCE WITH INDIAN STANDARDS

All materials used in the work shall conform to the latest edition of the relevant Indian Standard (IS). Where such Standards exist for work and workmanship, these shall also be complied with with regard to work and workmanship. Where such Standards specify the method of sampling for tests and /or tests, sampling /testing as directed by the Architects /INSTITUTE shall be got done by the Contractor in approved laboratories /test houses at his own cost. A list of BIS Standards is furnished in this Tender Document.

## **II. GENERAL SPECIFICATIONS**

### 1. MODE OF MEASUREMENT :

The actual area covered /executed shall be measured and paid accordingly.

2. INSTITUTE / Architects reserve the right to direct the Contractor to prepare 'Mock-up' of any item for their approval before proceeding with the work irrespective of quantity and /or cost of item mentioned in the tender, and the Contractor shall prepare and display such 'Mock-up' without any extra cost to INSTITUTE.

3. In case of non-availability of any material mentioned in the list of approved material and manufacturers, the Contractor shall intimate the Architect /Employer in writing of such non-availability, enclosing the details, specifications and sample of the equivalent material suggested by him, before procuring that material. Such alternative material shall be used only after Architect / INSTITUTE's approval.

4. Running meter measurements of partitions, conference tables etc. will be taken at the centre line (neither outer nor inner).

### 5. APPROVAL OF MOCK-UPS AND SAMPLES

The Contractor shall make one sample of each of the item / articles of furniture as listed under clause 2 of special conditions and get the sample approved through Architect / INSTITUTE before manufacturing in bulk.

### 6. APPROVAL OF FINAL FINISH IN CASE OF POLISHING AND PAINTING

For items involving painting and polishing, normally primer and three coats should suffice. However, to achieve the final finish to INSTITUTE's /Architect's satisfaction, it may become necessary to have more than three coats. The Contractor shall apply such extra coats of final finish at no extra cost to INSTITUTE.

### 7. NON- AVAILABILITY OF NOMINATED MATERIALS / ITEMS

In case of materials /items which are not available, the Contractor shall have to submit a certificate in writing from the manufacturer to that effect. After proper verification, alternative and equivalent material may be selected by the INSTITUTE / Architect. In such case, there will not be any increase of the quoted rates. However, if the accepted alternative is cheaper, the cost benefit is to be passed on to INSTITUTE.

8. The Contractor shall furnish the address of the workshop where the furniture to be supplied under this Contract is manufactured. The material procured for the manufacture of the furniture, shall at all times be open for inspection by the INSTITUTE / Architect and /or their authorized representatives. It

shall be the responsibility of the Contractor to afford full cooperation and assistance for such inspection.

9. The rates quoted by the Contractor will be considered to be inclusive of supplying the furniture and other items forming part of this Contract and placing them in position as directed by the Architects /INSTITUTE, and nothing extra on account of carriage, wastage, lift, lead, taxes, cesses or duties and the like or any other incidental charges of any kind whatsoever shall be paid to the contractor.
10. Any damage or any sort whatsoever which might occur to the furniture during carriage or at other stage shall be made good or replaced by the Contractor at his cost and risk.
11. The Contractor shall be responsible in all respects including watch and word, damages etc. for the safety of the work during execution/ manufacture till these are taken over. He shall also provide and maintain, at his own cost, any temporary covering required for the protection of the finished / unfinished items, that are likely to be damaged during the progress of work if left unprotected. The Contractor shall start supplying and placing / fixing the same in position so as to complete the work / stages of the work within the period stipulated in the Contract and /or as directed by INSTITUTE.
12. The rates for the different items of work under this contract shall be applicable for all heights, leads and lifts.
13. The Contractor shall get himself thoroughly acquainted with the site of work, approach conditions, storage space available etc. and study the specifications and the conditions carefully before tendering. No claim whatsoever for want of any information or on any other account shall be entertained.
14. The Contractor shall be responsible for the safe custody /security of the work under this Contract till the work is taken over by INSTITUTE.
15. Each item of work and/or article of furniture to be supplied under this Contract shall be got approved by the Architect at the site before it is polished or otherwise finished /treated. The approved articles duly approved by the Architect shall only be taken to the site where they are required to be finally placed /fixed.
16. The work shall be executed in accordance with the approved programme of work.
17. The necessary fittings for operating the drawers, cupboards etc. for locking arrangement needed shall be provided by the Contractor and his rates quoted are deemed to be inclusive of all such fittings and fixtures. In case any clarification about full details of fittings and fixtures and / or any other details as required, the same shall be obtained by the Contractor before tendering.
18. Foam rubber wherever specified shall be in one piece. It shall be shaped and fixed/ fitted properly as directed by the Architect with the material specified.

19. The detailed drawings are self contained but if some details are missing the Contractor shall consult the Architect before taking up the work.
20. All sharp edges, corners and sides of all the item of furniture shall be suitably rounded off to the required degree as decided by the Architect. This shall be done before the finishing and / or polishing etc. are taken up. Nothing extra shall be payable to the Contractor on this account.
21. Pest Control Treatment: Necessary pest control and anti-termite for all wood works shall be carried by a Pest Control Agency who is a member of the Pest Control Association of India. A written guarantee valid for 5 years shall be obtained from the Pest Control Agency against infestation of white ants, termites, wood borers etc. and furnished to INSTITUTE before the work is handed over.

## SPECIAL CONDITIONS OF CONTRACT

1. Tenders stipulating conditions other than those prescribed in the Tender Document shall be rejected.
2. The successful contractor shall produce 100% perfect samples (with specified colour schemes) of the required items for approval by the INSTITUTE /Architect within 14 days of receipt of the Letter of Intent /Letter of Acceptance of Tender /Work Order:
3. The successful contractor shall get the samples of the above items approved before execution of the respective items.
4. Working /detailed /shop drawings /brochures for furniture /workstations/ partitions shall be submitted along with the sample for approval.
5. Dimensions and other measurements given in the tender document and drawings may not be perfect. Therefore, before execution of each item of work, detailed measurements have to be taken at site by the successful bidder.
6. Payment for all items (unless specified as 'Lump sum') will be made as per actual measurement of executed work at site and accepted.
7. Measurement tolerance for glass and powder coating shall be not more than 5%. If the thickness of glass or powder coating is deficient by more than 10%, the item will not be accepted or measured.
8. After approval of sample furniture as required under clause 2 above, the contractor shall produce samples of following materials for approval by Architects /INSTITUTE.
  - (a) Fabric for chairs - 4 shades-30 cm x 30 cm size
  - (b) 1 mm laminate for table top - 15 cm x 15 cm size
  - (c) Veneers - 15 cm x 15 cm size
  - (d) Carpets (tile /synthetic) - 30 cm x 30 cm size
  - (e) Powder coated Aluminium extrusion of twin stile door - 30 cm long
  - (f) CRCA profile of frame - 30 cm long piece.
  - (g) Vertical blind - fabric alone - 100 cm long strip
  - (h) Aluminium composite panel - 30 cm x 30 cm size
  - (i) Bamboo vertical blind - 1 no. of specified size

9. No workmen will be allowed to stay within INSTITUTE's premises.
10. Electricity and water etc. shall have to be arranged by the Contractor at his own cost.
11. Permission, if any required, from the local authorities / bodies shall be obtained by the contractor at his own cost.
12. For final finishes even if the number of surface coatings is specified, it shall be the responsibility of the contractor to finish the work with top class quality acceptable to Architect/ INSTITUTE. If necessary extra coat/s of paint, polishing or finish as specified shall be applied at no extra cost to INSTITUTE.
13. The Contractor shall engage the necessary workers for removal of debris, waste, dust etc. as required by the Architect /Engineer-in-charge without extra cost and also redo the damages caused to the building /works without any extra cost to INSTITUTE.
14. Vertical transportation of materials by the passenger lifts installed in the building shall not be allowed. All materials shall be transported by means of staircases specifically earmarked for this purpose.
15. Work may have to be done during nighttime to adhere to the time schedule for completion of the work, for which no extra charges will be paid and prior permission will be required to obtain from Institute.
16. The Contractor shall take out and maintain insurance policies as prescribed in clause 48 of General Conditions of Contract throughout the currency of the contract until the works are taken over by INSTITUTE.
17. All items included in the Bill /Schedule of Quantities are to be finished as directed by the Architects. The rate/s quoted should include minor variations in the drawings & nothing extra shall be paid for such minor variations. The contractor shall complete the job as directed by the Architects.
18. When storage is being provided, the surroundings and premises where such storage is located as well as the work of other agencies shall be protected and not damaged; if any damage is caused, it has to be made good to the satisfaction of the Employer at the contractor's cost.
19. The contractor shall cover, secure and protect all the items of work, as directed, until the works are taken over by INSTITUTE.
20. The contractor shall submit detailed wing-wise and floor-wise drawings within 10 days of date of Letter of Intent /Acceptance of Tender /Work Order to the satisfaction of the Employer for his approval to show that the items of work proposed dimensionally fit with the plans /drawings.
21. The Contractors shall quote for all the items of Schedule/Bill of Quantities. Incomplete tenders shall be rejected.

22. If due to site conditions or any other reasons, variations in size are required up to and including 75 mm on plan, then no extra payment or rebate will be chargeable by or to the Contractor. If any variation is required beyond the aforesaid limit, then such variation shall be paid or adjusted on a pro-rata basis.
23. All the materials used in the work shall conform to the latest edition of BIS Specifications and shall be of tested quality and subject to further tests, if required by INSTITUTE / Architect, at no extra cost to INSTITUTE.
24. Statutory deductions like income tax at source & surcharge thereon, works contract tax & surcharge thereon or other statutory deduction/s as applicable shall be deducted from bills /amounts payable to the contractor.

### **Special Instructions:**

- 1. The existing furniture may please be seen at site and understand the conditions of the furniture before quoting the items since the existing cots/wardrobes needs to be repaired and remodeled as per the requirement and drawings attached.**
- 2. The detail drawings may also be obtained from the Institute during working Hours to for better visibility and get obtain clarification, if any.**
- 3. Please note that it may become necessary to use major new materials in order to provide good elegance and finishing to the existing furniture as per the design and drawing enclosed.**
- 4. The sample of materials shall be produced before commencement of the work and get the approval for making every item. Sample furniture shall be made and get the approval before taking up the bulk fabrication.**



## APPROVED BRANDS OF PRODUCTS / MATERIALS

**Note: Only below indicated brand materials shall be used or obtain fresh approval for the equivalent materials to be used in case of genuine for substituting the materials like non availability or change in selection for various reasons**

1	Veneer	:	Jacksons, Anchor, Orchid, United
2	Marine plywood	:	Indian plywood Mfg. Co.Anchor, Century, Western India Greenply, Kitply
3	Mineral Fibre Board	:	Celotex, Armstrong, Hunter Douglas
4	Laminate	:	Formica, Greenlam ,Merino, Decolam
5	Aluminium extrusion	:	Indal, Jindal or approved equivalent
6	MDF	:	Nuwud, Duratuff
7	Wall putty	:	Asian, NCL Altec, Birla white, Roofit, Conmix
8	Glass	:	Asahi, Modi, Triveni, Saint Gobain
9	Gypsum ceiling	:	GYPBOARD of India Gypsum
10	Modular Workstations/ Panels	:	Godrej, Blowplast, Featherlite Jasani, Eurotech etc.,
11	Factory made chairs & other furniture	:	Godrej, Blowplast, Featherlite,Jasani, Eurotech , etc.,
12	Synthetic leather	:	Royal, Bhor, Caprihans
13	Aluminium Composite Panel	:	Luxalon, Aluplex, Alucobond Alupro
14	Screws, self tapping machine screws	:	GKW, Nettlefold or approved equivalent
15	Hardware	:	Hettich, Sleek, Hafele, Efficient
16	Adhesive	:	Fevicol, Vamicol, Aksr
17	PU finish (for timber)	:	MRF, Sadolin, Sleek, Jotun
18	Melamine (matt) for Timber	:	Asian Paints, ICI, NEROLAC, Sleek
19	Castors	:	Rexello or approved equivalent

## SAFETY CODE

1. First aid appliances including adequate supply of sterilized dressing and cotton wool shall be maintained in a readily accessible place.
2. An injured person shall be taken to a hospital without loss of time in cases where the injury necessitates hospitalization.
3. Hoisting machines and tackle if used in works, including their attachments, anchorage and supports shall be in perfect condition.
4. Inflammable and hazardous items shall not be allowed near the working site.
5. Adequate safety measures against fire, theft etc. will be taken by the Contractor.

## **LIST OF INDIAN STANDARDS REFERRED**

1. I.S. No. 1200 Measurement of building, Civil Engineering works - Methods of measurements.
2. I.S. No. 287 Recommendation for maximum permissible moisture content of timber used for different purposes in different climate zones.
3. I.S. No. 1141 Code of practice for seasoning to timber
4. I.S. No. 6534 Guiding principles for grading and inspection of Timber
5. I.S. No. 1200 - (part XXI) Method of measurement of building and Civil Engineering works. Part XXI woodwork and joinery.
6. I.S. No. 3945 Code of practice for joints used in wooden furniture
7. I.S. No. 4020 Wooden flush doors - typical method of test for.
8. I.S. No. 4970 Key for identification of commercial timber.
9. I.S. No.3364 (Part II) Methods of measurement and evaluation of defects in timber Part II - converted timber.
10. I.S. No. 1708 (Parts 1-18) Methods of testing small clear specimens of Timber.
11. I.S. No. 6342 Rosewood logs for production of sliced veneers.
12. I.S. No. 534B Teak logs for production of sliced veneers.
13. I.S.2202 (Part I) Specification for wooden flush door shutters (solid core type Part I - plywood panel).
14. I.S. No. 233B (Part I) Code of practice for finishing of wood and wood based materials Part I -Operations and workmanship.
15. I.S. No. 763B Methods of sampling of plywood
16. I.S. No. 303 Specification of plywood for general purposes
17. I.S. No.3129 Specifications for particular board for insulation purposes.
18. I.S. No. 3313 - (Parts III & IV) High and medium density wood based purousea.
19. I.S. No. 1659 Block boards

20	I.S. No. 7316	Decorative plywood using plurality of veneers for decorative faces
21.	I.S. No. 1734	High density wood particle boards.
22.	I.S. No. 1734 (Parts I to XX)	Plywood method of Test for Part I: General Part II: Plywood Part III: Battens
23.	I.S. No. 1328	Veneer decorative plywood
24.	I.S. No. 710	Marine Ply.
25.	I.S. No. 3087	Wood particle board (Medium density)
26.	I.S. No. 848	Specification for synthetic resin adhesives for plywood (Phenolic & Aminoplastic)
27.	I.S. No. 2046	Specification for decorative laminate
28.	I.S. No. 8273	Fibrous gypsum plaster boards
29.	I.S. No. 2095	Gypsum plaster boards.
30.	I.S. No. 2542 (Part I)	Gypsum Plaster concrete and products methods of Test for part I - Plaster and concrete.
31.	I. S. No. 8272	Gypsum plaster for use in the manufacture of fibrous plaster board
32.	I.S. No. 2441	Fixing ceiling coverings, code of practice for
33.	I.S. No. 2935	Specification for flat transparent sheet glass.
34.	I.S. No. 2395 (Parts I & II)	Painting to concrete, masonry, plaster surfaces
35.	I.S. No. 3548	Glazing in buildings - code of practice
36.	I.S. No. 6278	White washing and color washing.
37.	I.S. 137	Specification for ready mixed paint, brushing, Matt or egg shell flat finishing interior to 'Indian standard color as required.
38.	I.S. No. 113	Specification for ready mixed paint, brushing, Matt or eggshell flat finishing interior to Indian standard color as required.

39. I.S. No. 113 Specification for enamel, interior  
(a) under coating (b) finishing.
40. I.S. No. 129 Specification for ready mixed paint brushing,  
Grey filler for enamel for use over primers.
41. I.S. No. 129 Specification for ready mixed paint brushing,  
finishing, interior, oil, glass, for  
general purpose to Indian standard colours.
42. I.S. No. 129 Specification for ready mixed paint brushing,  
finishing, interior, oil, glass, for general purpose  
to Indian standard colours.
43. I.S. No. 101 Methods of tests for ready mixed paints and  
enamels.
44. I.S. No. 75 Specification for linseed oil and refined.
45. I.S. No. 77 Specification for linseed oil, boiler for paint
46. I.S. No.124 Specification for ready mixed paint, brushing,  
(Part - I) finishing semi-glossy for general purposes.
47. I.S. No. 104 Specification for ready mixed paint, brushing,  
zinc chromate primer.
48. I.S. No. 4116 Joints used in wooden furniture
49. I.S No. 3845 Joints used in wooden furniture
50. I.S. No. 7070 Shelving racks - Wooden (adjustable and  
unadjustable type)
51. I.S. No. 4414 Table tops (wooden)
52. I.S. No. 5967 Table, wooden of test for
53. I.S. No. 5967 Door closures (hydraulically regulated)
54. I.S No. 799 Drawer locks, cupboards and box locks.

- 55. I.S. No.7981(Part I) Glossary of terms relating to builders hardware - Part I - locks
- 56. I.S. No. 704 Tower bolts ferrous metals and nonferrous (Part I & II) metals.
- 57. I.S. No. 401 Approved wood preservative

The above list is only for guideline of the Bidder. Any amendments made by the Bureau of Indian Standards up to the scheduled date of opening of Envelope-1of this Tender shall be complied with while during the execution of the work.

# **BILL OF QUANITITES**

**Name of the work: Interior work at Hostel rooms above  
Stores building, IIA, Bangalore.**

SL. No.	Description	Qty.	Unit	Rate (Rupees)		Amount (Rupees)
				In Figures	In Words	
1.0	<p>Repairing/remodelling of existing cots which are made out of 19mm thick marine ply finished with approved laminate for the side frames, 12mm ply for the top. The cost shall be inclusive of necessary hardware and melamine polish as per the instruction of the engineer in charge.</p> <p>Complete work has to be done as per the design drawing.</p> <p>size (1.8m x 0.9m)</p> <p>Note : Old Cots has to be modified as per the design drawings after removing the old ply and veneer wherever necessary.</p>	22	Nos			
2.0	<p>Providing and fixing Cot Head Board with 19mm thick marine ply finished with approved laminate over 38 x 38mm salwood frame and 6mm thick teak wood lipping Complete work has to be done as per the design drawing. The cost shall be inclusive of necessary hardware and melamine polish as per the instruction of the engineer in charge. Complete work has to be done as per the design drawing.</p> <p>size(2.7m x 2.1m)</p>	63	Sqm			



3.0	<p>Providing and fixing merino table top Study Tables with top framework made of 25x50x1.5mm thk SS and runner 25x25x1.5mm thk SS with SS legs of 25x25x2mm including teak wood beading 15x45mm for fixing table top. Complete work has to be done as per the design drawing. The cost shall be inclusive of necessary hardware and melamine polish as per the instruction of the engineer in charge.</p> <p>Size (3.0m x 0.6m) Complete work has to be done as per the design drawing.</p>	11	Nos			
4.0	<p>Providing and fixing Head Storage with 19mm thick marine ply finished with approved laminate including all hardware, handles, hinges, fixing, labour including melamine polish. Complete work has to be done as per the design drawing</p> <p>size(3.0m x 0.46m)</p>	15	Sqm			
5.0	<p>Providing and fixing T.V unit with shoe cabinet made out of 12mm thick marine ply with corian top including all hardware, handles, hinges, fixing, labour including melamine polish. Complete work has to be done as per the design drawing</p> <p>size(2.1m x 0.45m)</p>	11	Sqm			
6.0	<p>Providing and fixing wardrobes with 19mm thick marine ply finished with approved laminate including all hardware, handles, hinges, fixing, labour including melamine polish. Complete work has to be done as per the design drawing</p>	53	Sqm			

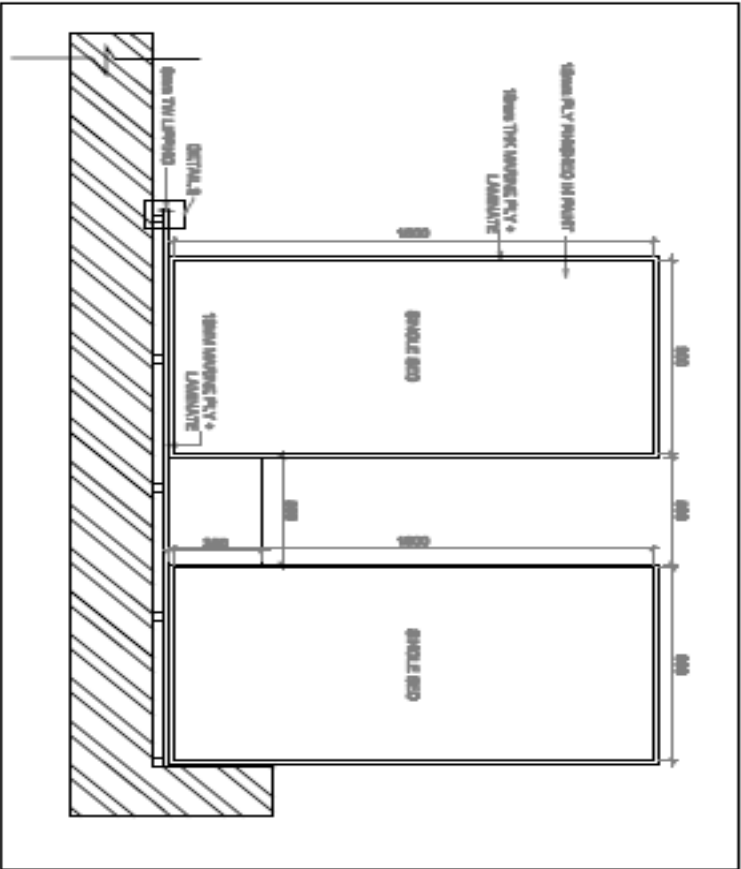
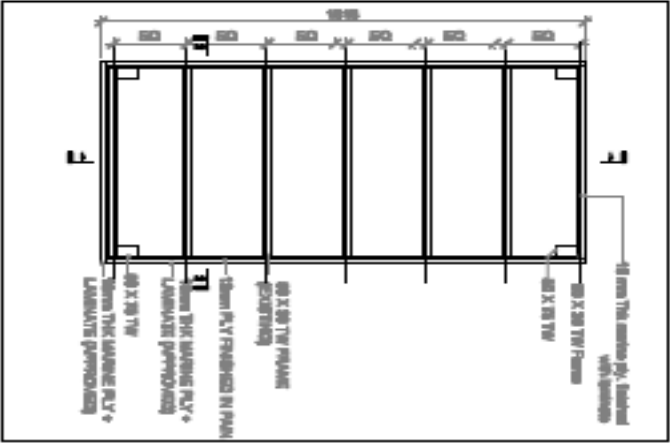
	size(2.19m x 2.10m)  Note: The materials which can be reused may be retrieved from the existing wardrobes					
7.0	Providing and fixing side table. The cost shall be inclusive of necessary hardware and melamine polish as per the instruction of the engineer in charge. Complete work has to be done as per the design drawing.  Size (0.5m x 0.34m)	22	Nos			
	<b>TOTAL</b>					

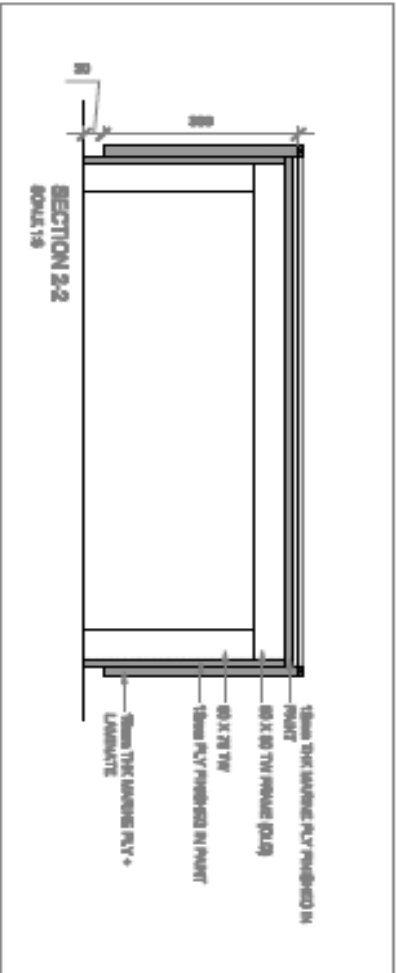
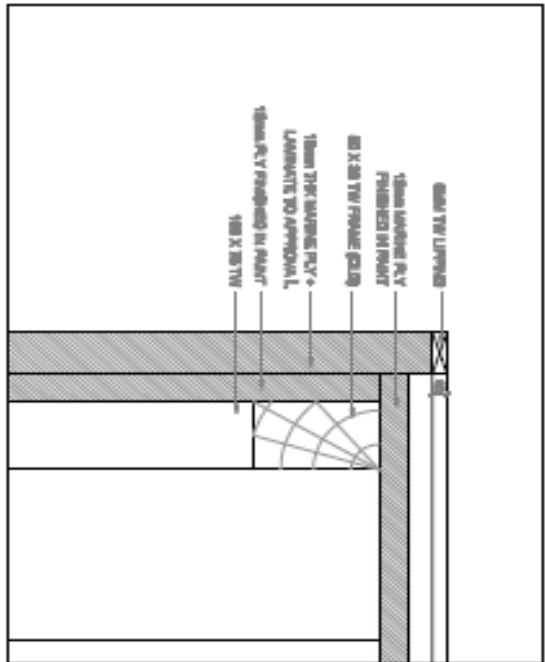
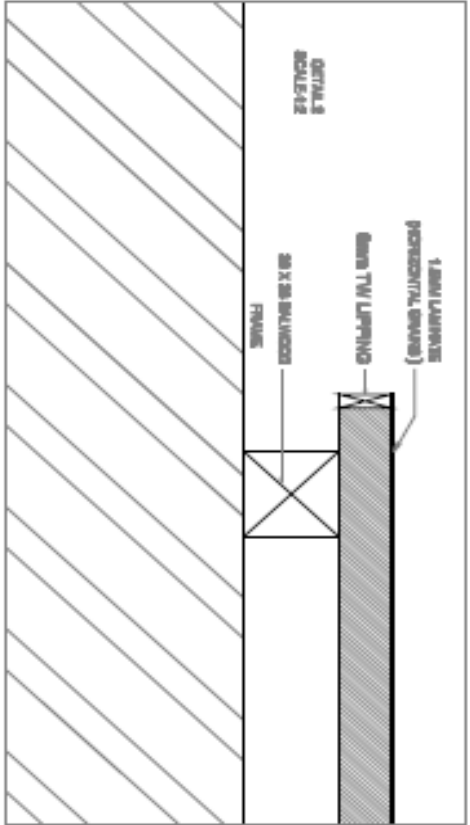
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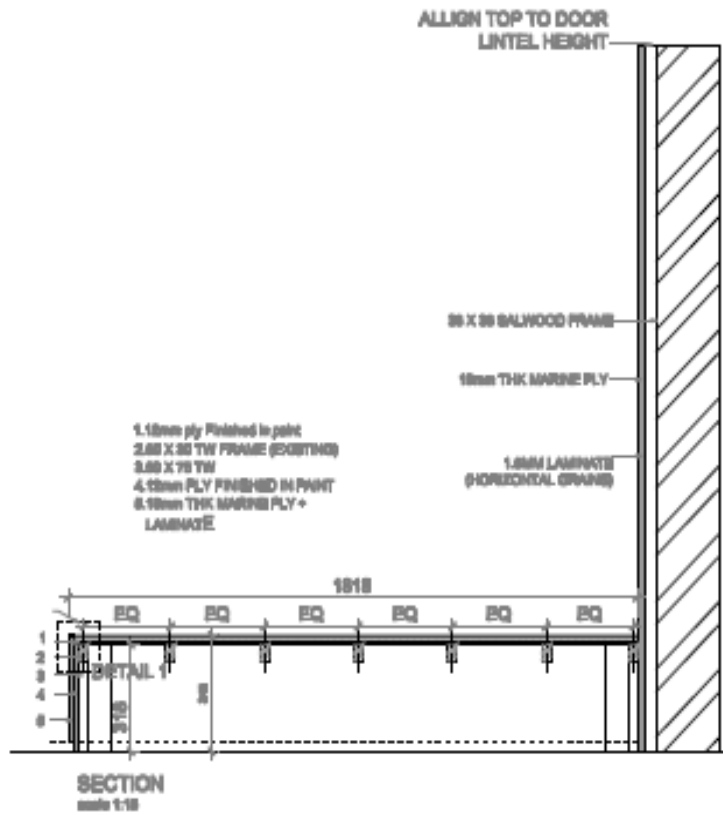
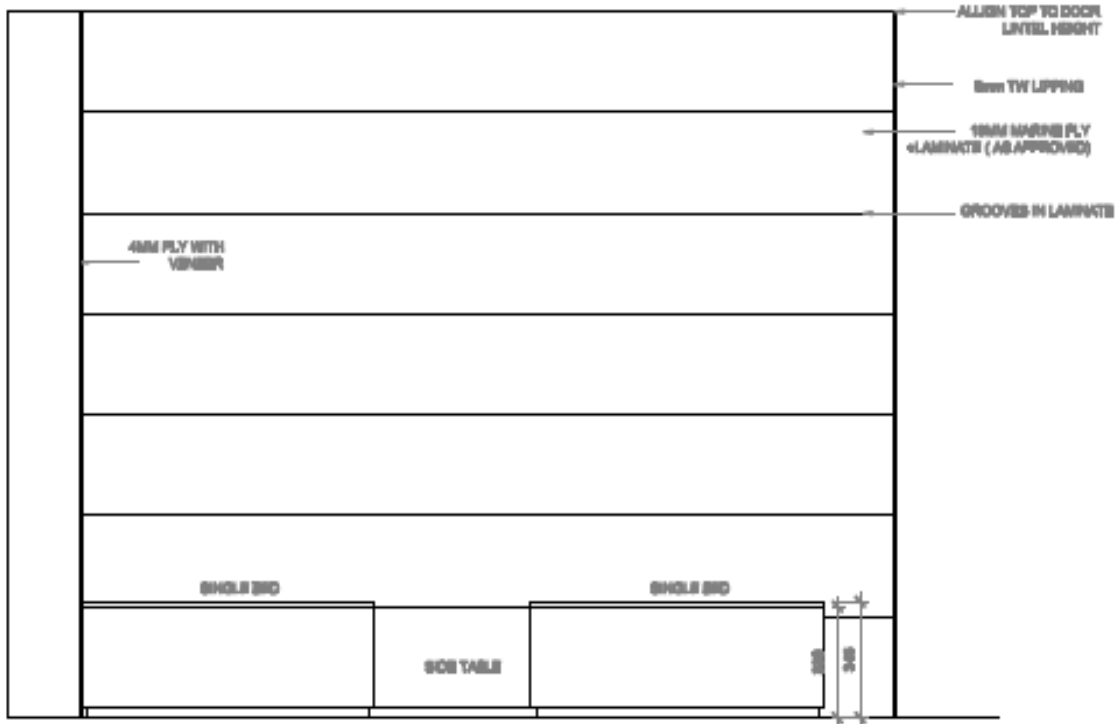
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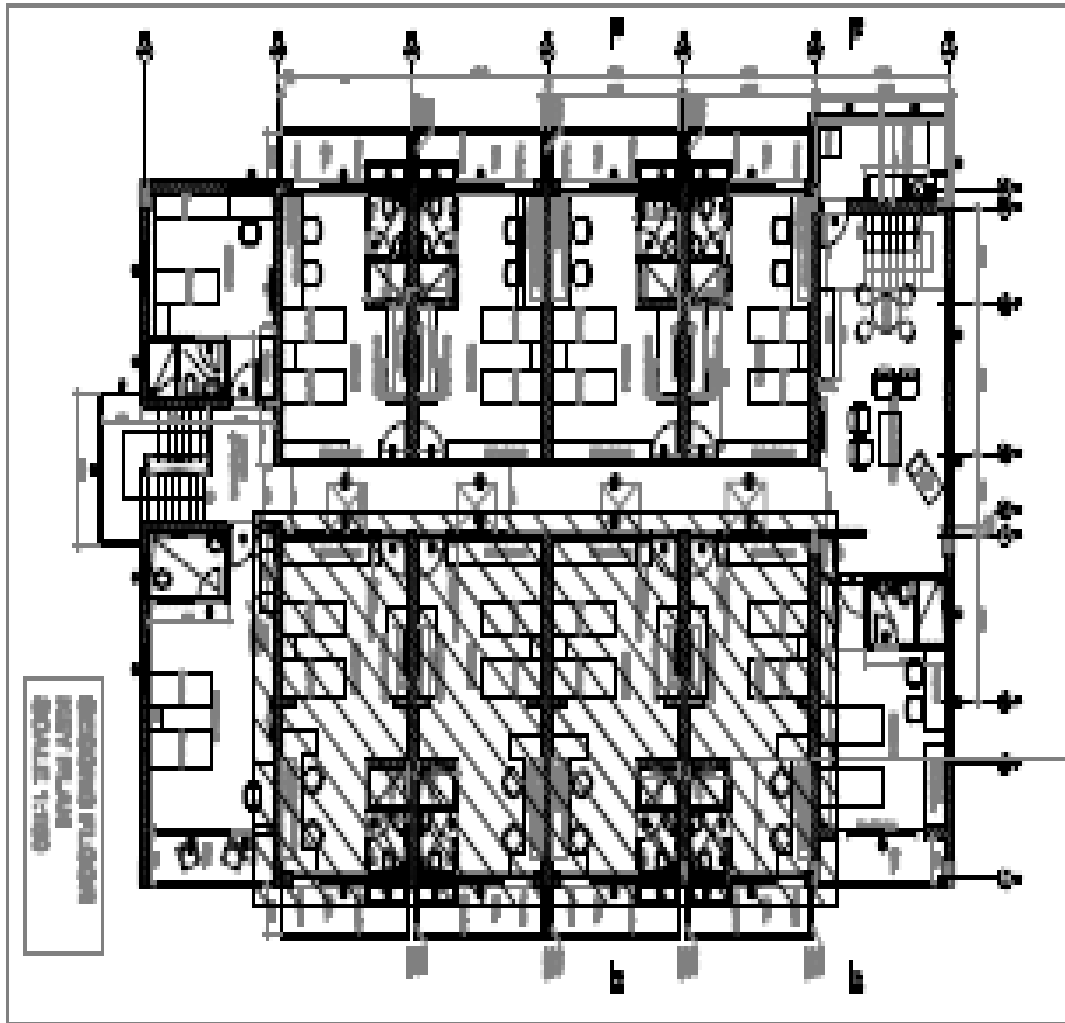
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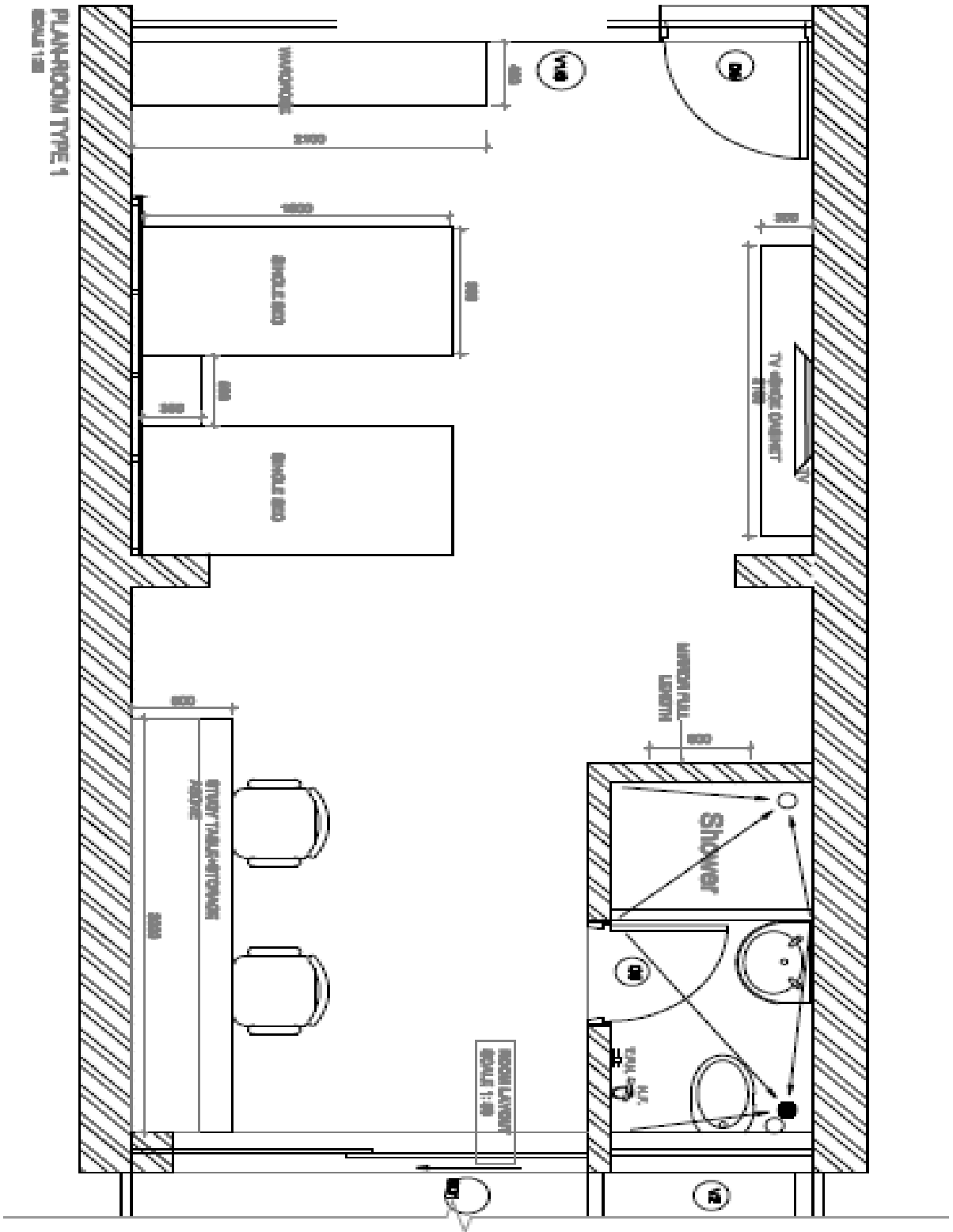
Signature of the Tenderer  
With Seal and Address

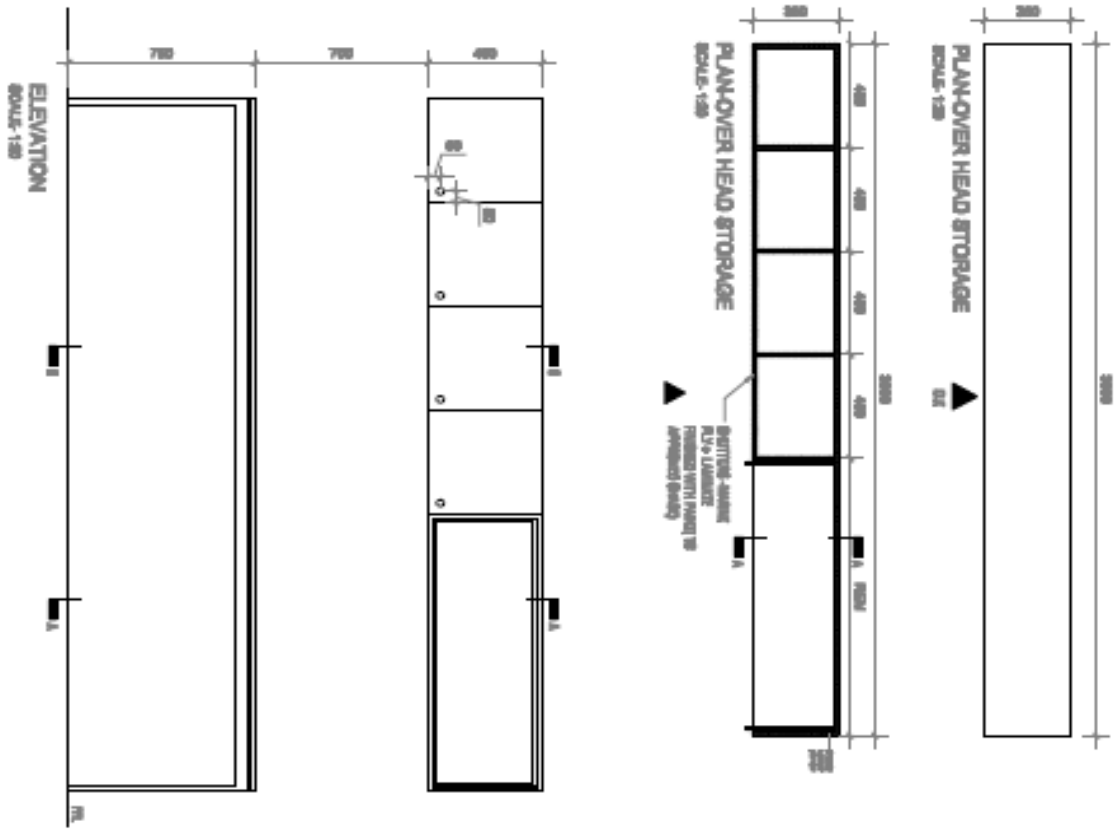




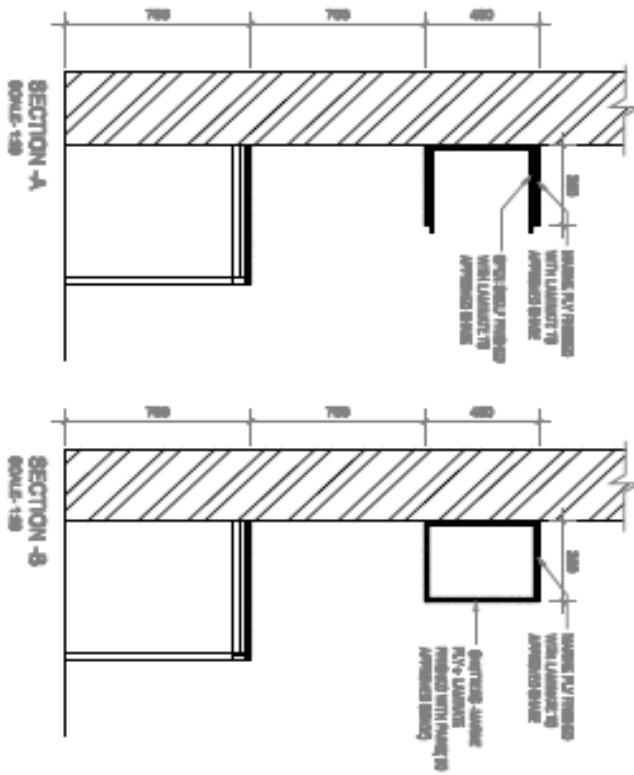




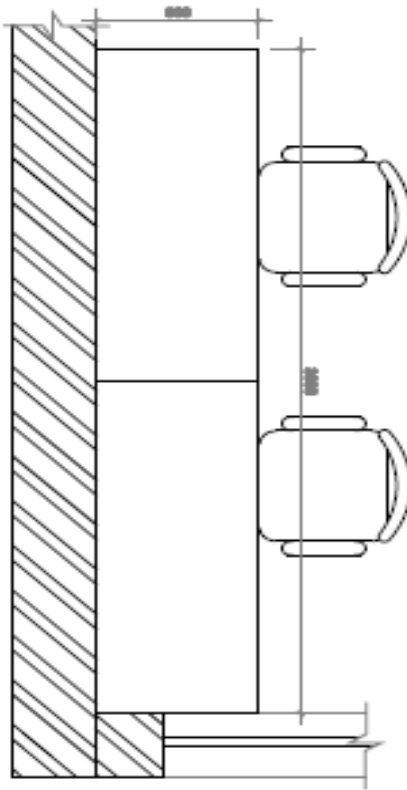




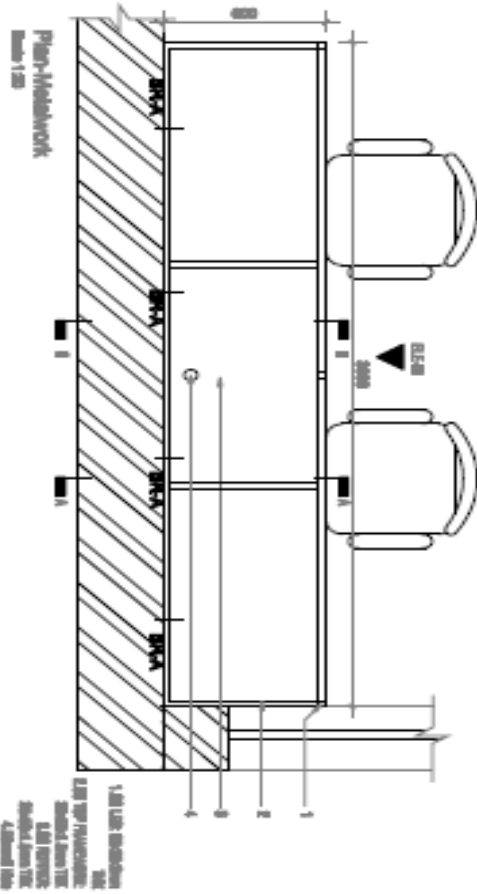
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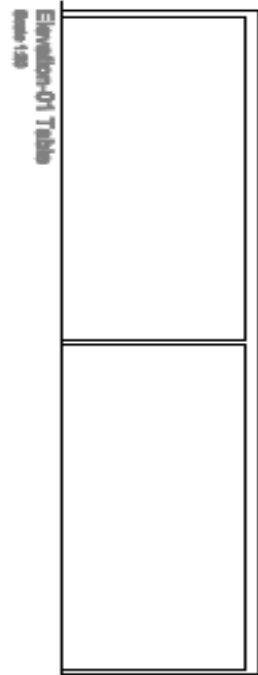




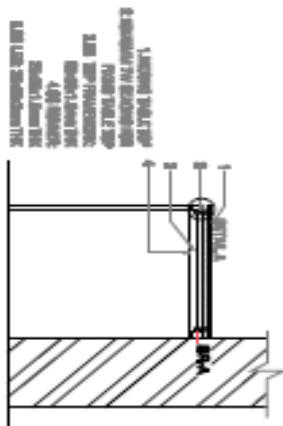
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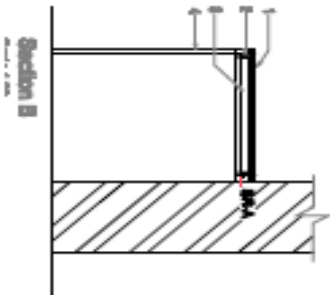
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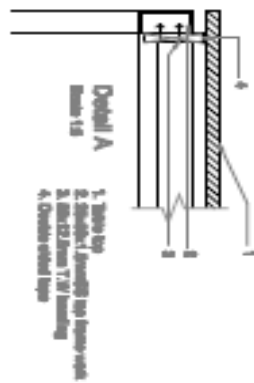
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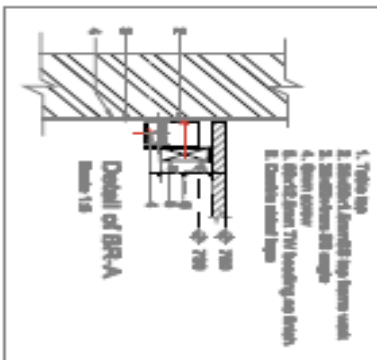
Section A  
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Section B  
Scale: 1/20



Detail A  
Scale: 1/2



Detail of BR-A  
Scale: 1/2

