



भारत सरकार/ GOVERNMENT OF INDIA
अंतरिक्ष विभाग/ DEPARTMENT OF SPACE
भारतीय अंतरिक्ष विज्ञान एवं प्रौद्योगिकी संस्थान/INDIAN INSTITUTE OF SPACE SCIENCE & TECHNOLOGY
क्रय एवं भंडार विभाग / PURCHASE & STORES DEPARTMENT
वलियमला पीओ., तिरुवनंतपुरम 695 547/ VALIAMALA P.O, THIRUVANANTHAPURAM 695 547,
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निविदा आमंत्रण / INVITATION TO TENDER

Date : 14.05.2019

Tender Due on : 27.06.2019 at 14.00 Hrs

Tender opening on: 28.06.2019 at 10.30 Hrs

Dear Sirs,

Sealed tenders are invited from accredited manufacturers / suppliers for the supply and installation of the following items at IIST, Valiamala.

Sl. No.	Tender No.	Item Description	Qty/ Nos.	Cost of Tender (Rs.)
1.	2019006613	Work Bench Table Type -A Work Bench Table Type -B Work Bench Table Type -C Work Bench Table Type -D Work Bench Table Type -E Work Bench Table Type -G Computer Table Cubicle Type - 2 Computer Table Type -C - Three seater Computer Table Type - E - Three seater Research Scholars Table - Single seater Research Scholars Table - Cubicle PU Seater Lab Chair	4 Nos. 10 Nos. 12 Nos. 18 Nos. 18 Nos. 3 Nos. 21 Nos. 8 Nos. 10 Nos. 7 Nos. 15 Nos. 100 Nos.	500+ GST @12% (560/-)

Annexure 1

Technical Specifications and Other Conditions

1	GENERAL INSTRUCTIONS
2	WORK BENCH TYPE A
3	WORK BENCH TYPE B
4	WORK BENCH TYPE C
5	WORK BENCH TYPE D
6	WORK BENCH TYPE E
7	WORK BENCH TYPE G
8	COMPUTER TABLE-CUBICLE-TYPE 2
9	COMPUTER TABLE-TYPE C-THREE SEATER
10	COMPUTER TABLE-TYPE E-THREE SEATER
11	RESEARCH SCHOLAR TABLE-SINGLE SEATER
12	RESEARCH SCHOLAR TABLE-CUBICLE
13	PU SEATED LAB CHAIR

1. GENERAL INSTRUCTIONS

- a) The brand/supplier shall have minimum **Five years of experience** in the industry and shall have a proven record in Central Government Academic & Research Organizations. Purchase Order copies and work completion certificates shall be submitted along with the offer.
- b) The supplier/Brand shall be an ISO 9001:2008/9001:2015 certified and a recognized member of Scientific Equipment and Furniture Association (SEFA).
- c) Provide user list of similar furniture systems installed (recent) in Govt./public undertaking labs in India.
- d) The suppliers should mention the price, quantity, measurement of each item separately.
- e) The suppliers should inform the readiness of the item to carry out pre-dispatch inspection.
- f) The suppliers should bring the fully furnished sample product to the site at the time of inspection.
- g) Complete furniture should be provided with 3 years onsite warranty from the date of installation.
- h) After sales, support in terms of availability of spares/consumables and maintenance should be guaranteed for a period of minimum 10 years from the date of supply.
- i) The scope of work includes supply and installation at IIST Valiamala, Thiruvananthapuram.
- j) Material property data sheet, Quality Standard Certificate, Environmental Certificate, etc. of the offered product have to be submitted along with the quotation.
- k) All the necessary accessories/required items should be provided at the time of installation.
- l) Required size, model, type & design shall be approved by concerned officer-in-charge.
- m) All the electrical sockets, data sockets, cable grommets, locks, handles etc for the furniture shall be provided by the supplier.
- n) All the internal wiring for electric and data network should be carried out by the supplier.
- o) The suppliers should provide 3D view, 2D view (front, side, rear/top) drawings with proper measurements.
- p) The colour options shall be confirmed with IIST before production and approvals shall be taken from IIST before starting the production.

2. WORK BENCH TYPE A

(a) Dimension: Length=1500mm, Depth=1000mm, Height=905mm		
(b) Metal Frame: 14 gauge mild steel	....	2.1
(c) Worktop: 25±1 mm thick BWP plywood.	....	2.2
(d) CPU cabin and under bench cabinet	....	2.3
(e) Drawer	....	2.4
(f) Key board tray with mouse pad	....	2.5
(g) Drawings	....	2.6

2.1 Metal Frame

- a) All metal frames should be made of **14 gauge mild steel** with rectangle hollow profile tubes.
- b) Frame Dimensions:
 1. C frame structures (two numbers):
 - I. Bottom frame: 80mm x 40mm (minimum)
 - II. All other frames: 60mm x 40mm (minimum)
 2. Vertical frames (frame connecting the bottom and top frames of C frame structures) (two numbers- left side & right side): 60mm x 40mm (minimum)
 3. Horizontal support frames for worktop:
 - I. Front side: 50mm x 30mm (minimum)
 - II. frame connecting two vertical frames : 20mm x 20mm (minimum)
 4. Bottom horizontal frame connecting two vertical frames to support CPU cabin, under bench cabinet and drawer : 20mm x 20mm (minimum)
- c) Frames mentioned above are minimum. The supplier can add extra frames for stable configuration of the table.
- d) Metal frames should conform the latest Indian Standards.
- e) All metal pieces should be welded together properly and strongly.
- f) The profile ends should be covered and protected with injection moulded ABS end caps.
- g) High Quality Feet Levellers (tough plastic/nylon) are to be installed under each legs.
- h) The work surface should be fixed on the metal framework using galvanised metal screws with proper size.
- i) **Specification of Powder Coating**
 - (i) Powder coating should be with Epoxy powder
 - (ii) Colour: light grey
 - (iii) The specific gravity of powder should be such that it gives DFT (Dry Film Thickness) of 60 - 70 micron.
 - (iv) SCRATCH HARDNESS TEST as per DIN 53153 shall be conducted and results should be such that no scratch shall show bare metal with a load of 3 kgs.

2.2 Worktop

- a) Dimension: Length=1500mm, Depth=1000mm
- b) Worktop should be made up of melamine laminated 25 ± 1 mm thick BWP (Boiling Water Proof) plywood.
- c) The top should be factory-made, laminated with 0.9 ± 1 mm thickness
- d) Lamination colour: steam beach
- e) The melamine lamination should conform to BIS standards.
- f) The edges of the worktop should be sealed with 2mm thick PVC lipping/edge banding to protect from impacts, moisture and insects.
- g) The lipping, edging and lamination should be machine applied at high temperature and pressure.

2.3 CPU cabin and Under bench cabin

- a) Dimension of CPU cabin: 300mm (Length)x 680mm (Height) x 590 mm (Depth)
- b) Dimension of Under bench cabin: 350mm (Length)x 680mm (Height) x 590 mm (Depth)
- c) Dimension of Keyboard tray: 650mm (Length)x 100mm (Height) x 400 mm (Depth)
- d) CPU cabin, under bench cabin and key board tray should be made up of melamine laminated 18 ± 1 mm thick BWP plywood. Lamination thickness: 0.9 ± 1 mm.
- e) Lamination colour: steam beach.
- f) The edges should be sealed with 2mm thick PVC lipping/edge banding to protect from impacts, moisture and insects.
- g) The cabinet body should be made of permanent casework without any screws and mini-fix fittings (mini fix joints not accepted). There should not be gaps anywhere for dust accumulation Inside of the cabinet body. All joints should be sealed and it should be easily cleanable.
- h) The lipping, edging and lamination should be machine applied at high temperature and pressure.
- i) Door of under bench cabinets should have smooth Anodized Aluminium grab rails powder coated with minimum 70 microns.
- j) Number of CPU cabins (right side): 1. The CPU cabin should be kept open at front and back. (door is not required.)
- k) Number of under bench cabin (left side): 1.

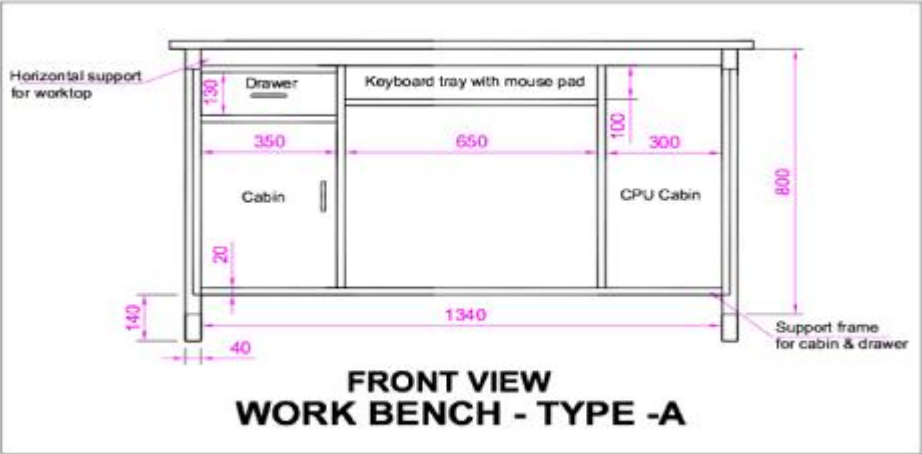
2.4 Drawer

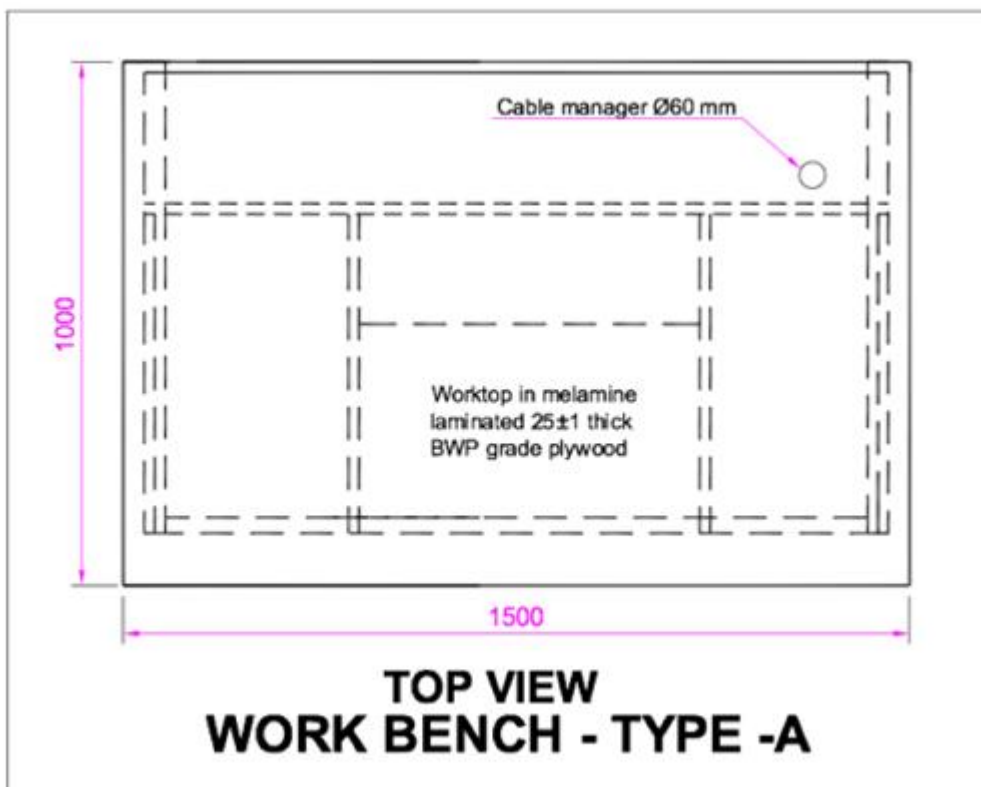
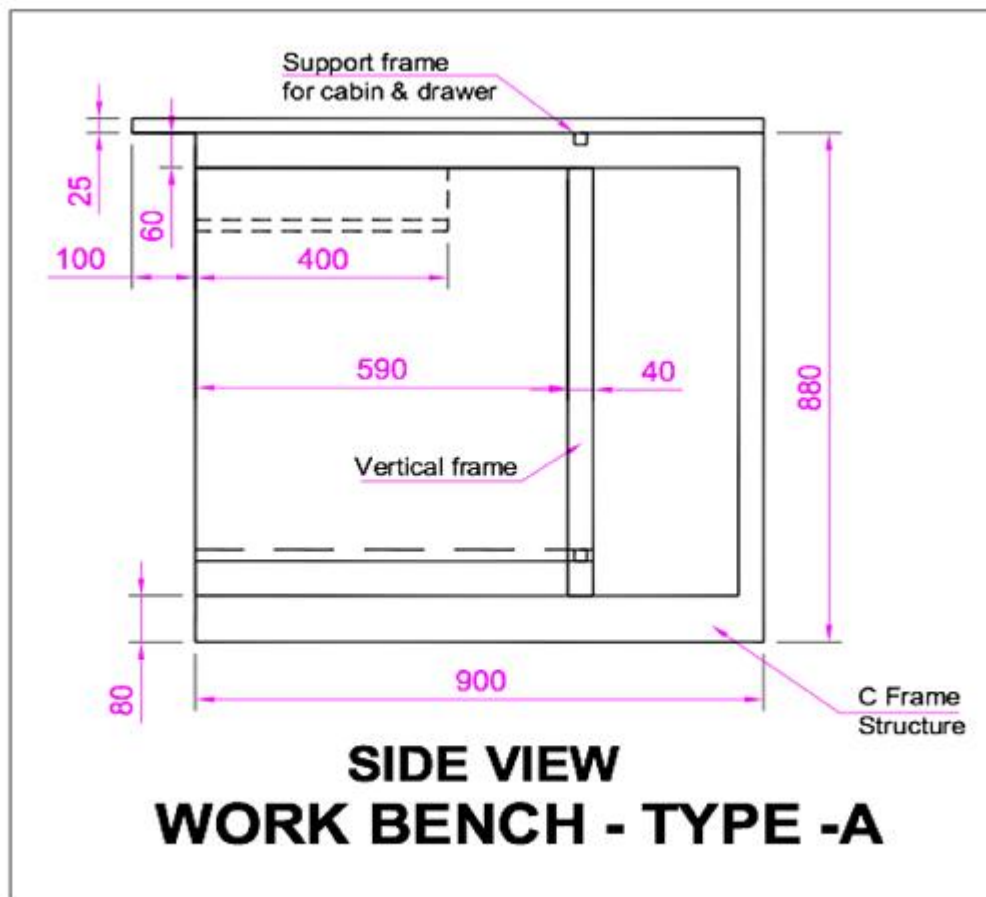
- a) Dimension (inner): 350mm (Length)x 130mm (Height) x 590 mm (Depth)
- b) It should be made up of 18±1mm thick BWP plywood laminated with 0.9±.1 mm thick melamine laminates on both sides.
- c) All exposed edges are lipped with PVC lipping not less than 2mm to protect from impacts, moisture and insects.
- d) The lipping, edging and lamination should be machine applied at high temperature and pressure.
- e) Drawers shall have rail arrangement for smooth operation, with best quality stainless steel handle
- f) Drawer channel: Telescopic Ball Bearing Drawer Channel
- g) Lock and keys with optimum security: Rust-proof components, Lock should be made of stainless steel and two /three numbers of keys made of brass with moulded plastic head.
- h) Number of drawers: 1
- i) Lamination colour: steam beach

2.5 Keyboard tray with mouse pad

- a) Dimension (inner): 650mm (Length)x 100mm (Height) x 400 mm (Depth)
- b) It should be made up of 18±1mm thick BWP plywood laminated with 0.9±.1 mm thick melamine laminates on both sides.
- c) Lamination colour: steam beach
- d) All exposed edges are lipped with PVC lipping not less than 2mm to protect from impacts, moisture and insects.
- e) The lipping, edging and lamination should be machine applied at high temperature and pressure.
- f) Keyboard shall have rail arrangement for smooth operation. Keyboard tray slide channel: stainless steel telescopic ball bearing channel.
- g) Number of keyboard tray with mouse pad: 1.

2.6 Drawings





3.WORK BENCH TYPE B

(a) Dimension: Length=1500mm, Depth=1000mm, Height=905mm		
(b) Metal Frame: 14 gauge mild steel	....	3.1
(c) Worktop: 25±1 mm thick BWP plywood.	....	3.2
(d) CPU cabin and under bench cabinet	....	3.3
(e) Drawer	....	3.4
(f) Key board tray with mouse pad	....	3.5
(g) Electrical Fittings	....	3.6
(h) Drawings	....	3.7

3.1 Metal Frame

- a) All metal frames should be made of **14 gauge mild steel** with rectangle hollow profile tubes.
- b) Frame Dimensions:
 1. C frame structures (two numbers):
 - I. Bottom frame: 80mm x 40mm (minimum)
 - II. All other frames: 60mm x 40mm (minimum)
 2. Vertical frames (frame connecting the bottom and top frames of C frame structures) (two numbers- left side & right side): 60mm x 40mm (minimum)
 3. Horizontal support frames for worktop:
 - I. Front side: 50mm x 30mm (minimum)
 - II. frame connecting two vertical frames : 20mm x 20mm (minimum)
 4. Bottom horizontal frame connecting two vertical frames to support cpu cabin, under bench cabinet and drawer : 20mm x 20mm (minimum)
- c) Frames mentioned above are minimum. The manufacturer can add extra frames for stable configuration of the table.
- d) Metal frames should conform the latest Indian Standards.
- e) All metal pieces should be welded together properly and strongly.
- f) The profile ends should be covered and protected with injection moulded ABS end caps.
- g) High Quality Feet Levellers (tough plastic/nylon) are to be installed under each legs.
- h) The work surface should be fixed on the metal framework using galvanised metal screws with proper size.
- i) **Specification of Powder Coating**
 - (i) Powder coating should be with Epoxy powder
 - (ii) Colour: light grey
 - (iii) The specific gravity of powder should be such that it gives DFT (Dry Film Thickness) of 60 - 70 micron.
 - (iv) SCRATCH HARDNESS TEST as per DIN 53153 shall be conducted and results should be such that no scratch shall show bare metal with a load of 3 kgs.

3.2 Worktop

- a) Dimension: Length=1500mm, Depth=1000mm
- b) Worktop should be made up of melamine laminated 25 ± 1 mm thick BWP plywood.
- c) The top should be factory-made, laminated with 0.9 ± 1 mm thickness
- d) Lamination colour: steam beach
- e) The melamine lamination should conform to BIS standards.
- f) The edges of the worktop should be sealed with 2mm thick PVC lipping/edge banding to protect from impacts, moisture and insects.
- g) The lipping, edging and lamination should be machine applied at high temperature and pressure.

3.3 CPU cabin and Under bench cabin

- a) Dimension of CPU cabin: 300mm (Length)x 680mm (Height) x 590 mm (Depth)
- b) Dimension of Under bench cabin: 350mm (Length)x 680mm (Height) x 590 mm (Depth)
- c) CPU cabin, under bench cabin and key board tray should be made up of melamine laminated 18 ± 1 mm thick BWP plywood. Lamination thickness: 0.9 ± 1 mm.
- d) Lamination colour: steam beach.
- e) The edges should be sealed with 2mm thick PVC lipping/edge banding to protect from impacts, moisture and insects.
- f) The cabinet body should be made of permanent casework without any screws and mini-fix fittings (mini fix joints not accepted). There should not be gaps anywhere for dust accumulation Inside of the cabinet body. All joints should be sealed and it should be easily cleanable.
- g) The lipping, edging and lamination should be machine applied at high temperature and pressure.
- h) Door of under bench cabinets should have smooth Anodized Aluminium grab rails powder coated with minimum 70 microns.
- i) Number of CPU cabins (right side): 1. The CPU cabin should be kept open at front and back. (door is not required.)
- j) Number of under bench cabin (left side): 1.

3.4 Drawer

- a) Dimension (inner): 350mm (Length)x 130mm (Height) x 590 mm (Depth)
- b) It should be made up of 18 ± 1 mm thick BWP plywood laminated with 0.9 ± 1 mm thick melamine laminates on both sides.
- c) All exposed edges are lipped with PVC lipping not less than 2mm to protect from impacts, moisture and insects.
- d) The lipping, edging and lamination should be machine applied at high temperature and pressure.
- e) Drawers shall have rail arrangement for smooth operation, with best quality stainless steel handle
- f) Drawer channel: Telescopic Ball Bearing Drawer Channel
- g) Lock and keys with optimum security: Rust-proof components, Lock should be made of stainless steel and two /three numbers of keys made of brass with moulded plastic head.
- h) Number of drawers: 1

- i) Lamination colour: steam beach

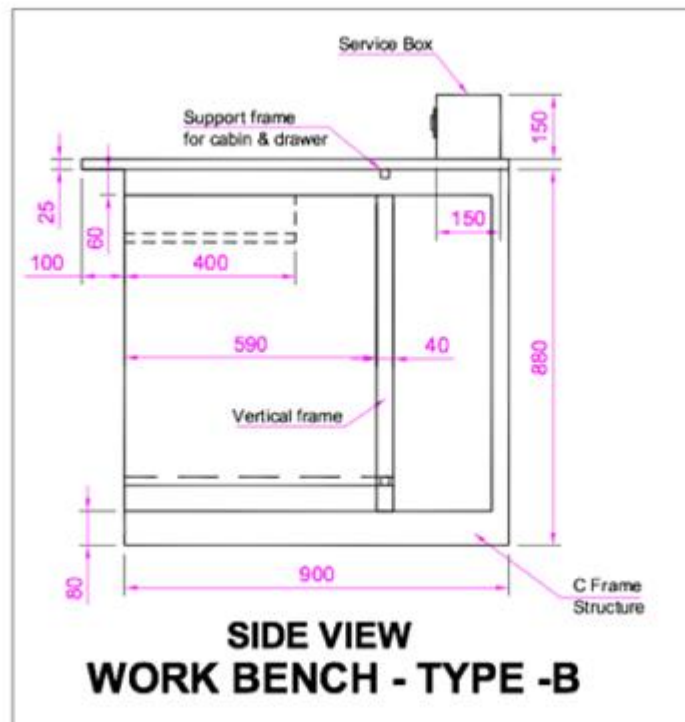
3.5 Keyboard tray with mouse pad

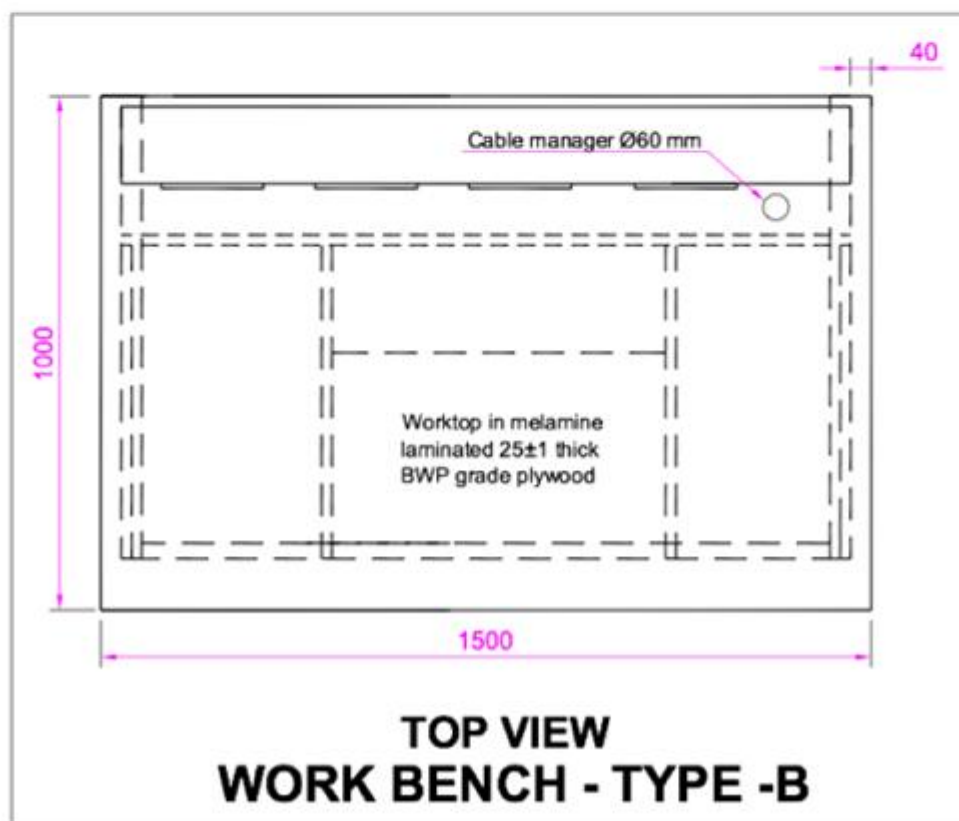
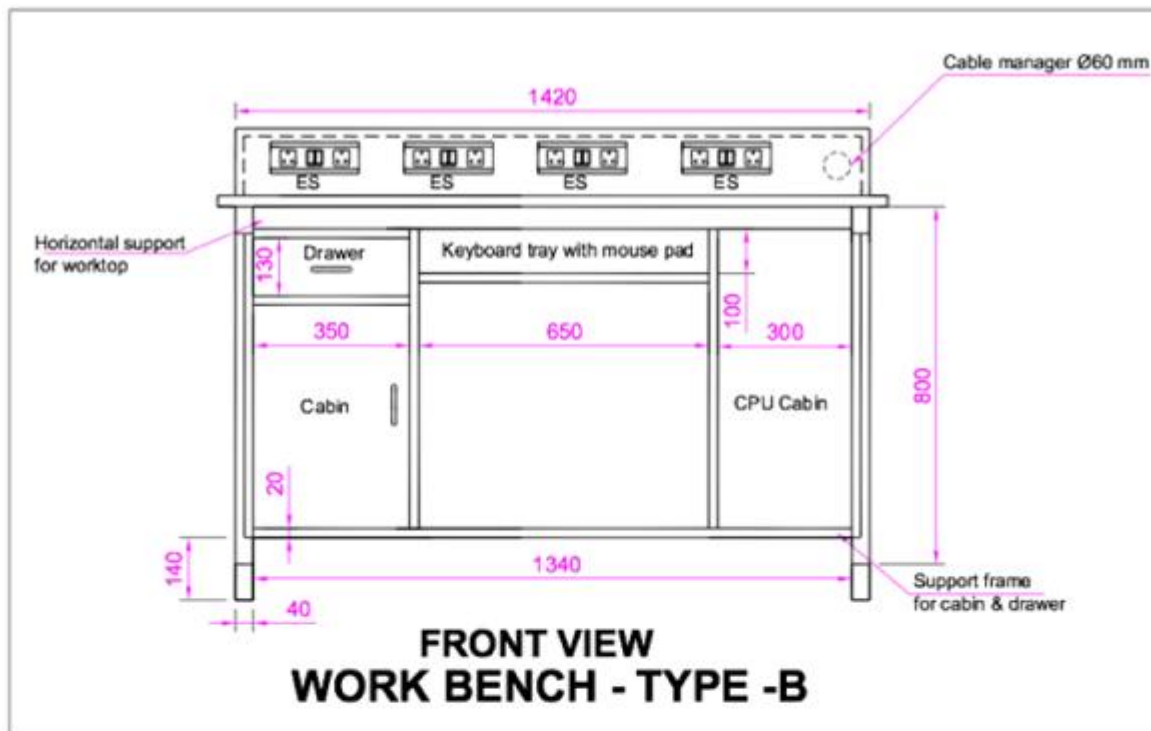
- a) Dimension (inner): 650mm (Length)x 100mm (Height) x 400 mm (Depth)
- b) It should be made up of 18±1mm thick BWP plywood laminated with 0.9±.1 mm thick melamine laminates on both sides.
- c) Lamination colour: dark brown
- d) All exposed edges are lipped with PVC lipping not less than 2mm to protect from impacts, moisture and insects.
- e) The lipping, edging and lamination should be machine applied at high temperature and pressure.
- f) Keyboard shall have rail arrangement for smooth operation. Keyboard tray slide channel: stainless steel telescopic ball bearing channel.
- g) Number of keyboard tray with mouse pad: 1.

3.6 Electrical Fittings

- a) Electrical fittings should be placed on box (we call it as **Service box**) made up of 18±1mm thick BWP plywood laminated with 0.9±.1 mm thick melamine lamination. **Service Box** is on the worktop with dimensions mentioned in the drawing.
- b) The internal wiring should be done by the supplier. Power Inlet should be placed inside the right side of the **Service Box**. The right sides of Service Box should be easily openable by the user in such a way that power cable from outside can be easily connected to the power inlet in the service box.
- c) Cable: 1.1 kV grade ISI marked FRLS PVC insulated single core stranded copper conductor cable which conforms to IS 694. Size: 4mm².
- d) Electrical sockets and switches: 5/15 Amp (or 6/16 Amp) two-in-one electrical sockets and 15 Amp (or 16 Amp) one way switch for each sockets. The sockets and switches should be fixed on PVC modular sockets.
- e) Total number of electrical sockets: 4 x 2=8 numbers
- f) The electrical sockets and switches should be connected at the places mentioned in the drawing.
- g) Approved Brands for electrical sockets and switches: LEGRAND, ABB, CRABTREE, GELCO, LISHA, NORTH-WEST, STANDARD, L&T, ROMA(ANCHOR), LITASKI, FINOSWITCH(FINOLEX), TOYAMA, SCHNEIDER, HAGER, MK, VEGA, KOLORS, EON, SALZER.

3.7 Drawings





4. WORK BENCH TYPE C

(a) Dimension: Length=1500mm, Depth=1000mm, Height =905mm		
(b) Metal Frame: 14 gauge mild steel	....	4.1
(c) Worktop: 25±1 mm thick BWP plywood.	....	4.2
(d) <i>Platform</i>	....	4.3
(e) CPU cabin and under bench cabinet	....	4.4
(f) Drawer	....	4.5
(g) Key board tray with mouse pad	....	4.6
(h) Electrical Fittings	....	4.7
(i) Drawings	....	4.8

4.1 Metal Frame

- a) All metal frames should be made of **14 gauge mild steel** with rectangle hollow profile tubes.
- b) Frame Dimensions:
 1. C frame structures (two numbers):
 - I. Bottom frame: 80mm x 40mm (minimum)
 - II. All other frames: 60mm x 40mm (minimum)
 2. Vertical frames (frame connecting the bottom and top frames of C frame structures) (two numbers- left side & right side): 60mm x 40mm (minimum)
 3. Horizontal support frames for worktop:
 - I. Front side: 50mm x 30mm (minimum)
 - II. frame connecting two vertical frames : 20mm x 20mm (minimum)
 4. Bottom horizontal frame connecting two vertical frames to support cpu cabin, under bench cabinet and drawer : 20mm x 20mm (minimum)
- c) Frames mentioned above are minimum. The manufacturer can add extra frames for stable configuration of the table.
- d) Metal frames should conform the latest Indian Standards.
- e) All metal pieces should be welded together properly and strongly.
- f) The profile ends should be covered and protected with injection moulded ABS end caps.
- g) High Quality Feet Levellers (tough plastic/nylon) are to be installed under each legs.
- h) The work surface should be fixed on the metal framework using galvanised metal screws with proper size.
- i) **Specification of Powder Coating**
 - (i) Powder coating should be with Epoxy powder
 - (ii) Colour: light grey
 - (iii) The specific gravity of powder should be such that it gives DFT (Dry Film Thickness) of 60 - 70 micron.
 - (iv) SCRATCH HARDNESS TEST as per DIN 53153 shall be conducted and results should be such that no scratch shall show bare metal with a load of 3 kgs.

4.2 Worktop

- a) Dimension: Length=1500mm, Depth=1000mm, Height from floor=900mm
- b) Worktop should be made up of melamine laminated 25 ± 1 mm thick BWP plywood.
- c) The top should be factory-made, laminated with 0.9 ± 1 mm thickness
- d) Lamination colour: steam beach
- e) The melamine lamination should conform to BIS standards.
- f) The edges of the worktop should be sealed with 2mm thick PVC lipping/edge banding to protect from impacts, moisture and insects.
- g) The lipping, edging and lamination should be machine applied at high temperature and pressure.

4.3 Platform

- a) Dimension: Length=1400mm, Depth=300mm
- b) The Platform is placed on the top of **Service Box 2** mentioned in the **Section 4.7**.
- c) Platform top should be made up of melamine laminated 25 ± 1 mm thick BWP plywood.
- d) The top should be laminated with 0.9 ± 1 mm thickness
- e) Lamination colour: steam beach
- f) The melamine lamination should conform to BIS standards.
- g) The edges of the worktop should be sealed with 2mm thick PVC lipping/edge banding to protect from impacts, moisture and insects.
- h) The lipping, edging and lamination should be machine applied at high temperature and pressure.

4.4 CPU cabin and Under bench cabin

- a) Dimension of CPU cabin: 300mm (Length) x 680mm (Height) x 590 mm (Depth)
- b) Dimension of Under bench cabin: 350mm (Length) x 680mm (Height) x 590 mm (Depth)
- c) CPU cabin, under bench cabin and key board tray should be made up of melamine laminated 18 ± 1 mm thick BWP plywood. Lamination thickness: 0.9 ± 1 mm.
- d) Lamination colour: steam beach.
- e) The edges should be sealed with 2mm thick PVC lipping/edge banding to protect from impacts, moisture and insects.
- f) The cabinet body should be made of permanent casework without any screws and mini-fix fittings (mini fix joints not accepted). There should not be gaps anywhere for dust accumulation inside of the cabinet body. All joints should be sealed and it should be easily cleanable.
- g) The lipping, edging and lamination should be machine applied at high temperature and pressure.
- h) Door of under bench cabinets should have smooth Anodized Aluminium grab rails powder coated with minimum 70 microns.

- i) Number of CPU cabins (right side): 1. The CPU cabin should be kept open at front and back. (door is not required.)
- j) Number of under bench cabin (left side): 1.

4.5 Drawer

- a) Dimension (inner): 350mm (Length)x 130mm (Height) x 590 mm (Depth)
- b) It should be made up of 18±1mm thick BWP plywood laminated with 0.9±.1 mm thick melamine laminates on both sides.
- c) All exposed edges are lipped with PVC lipping not less than 2mm to protect from impacts, moisture and insects.
- d) The lipping, edging and lamination should be machine applied at high temperature and pressure.
- e) Drawers shall have rail arrangement for smooth operation, with best quality stainless steel handle
- f) Drawer channel: Telescopic Ball Bearing Drawer Channel
- g) Lock and keys with optimum security: Rust-proof components, Lock should be made of stainless steel and two /three numbers of keys made of brass with moulded plastic head.
- h) Number of drawers: 1
- i) Lamination colour: dark brown

4.6 Keyboard tray with mouse pad

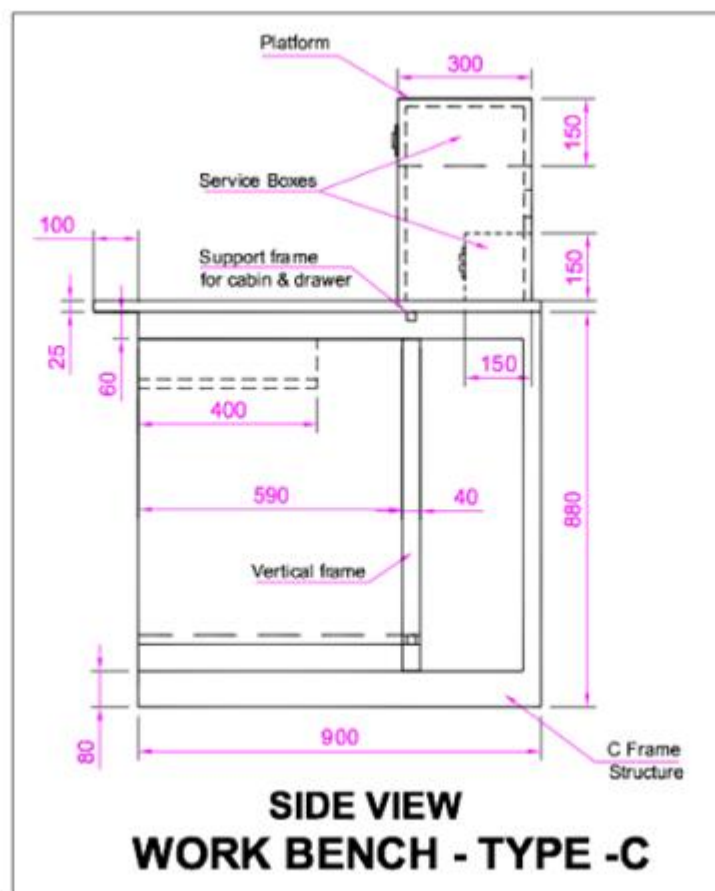
- a) Dimension (inner): 650mm (Length)x 100mm (Height) x 400 mm (Depth)
- b) It should be made up of 18±1mm thick BWP plywood laminated with 0.9±.1 mm thick melamine laminates on both sides.
- c) Lamination colour: steam beach
- d) All exposed edges are lipped with PVC lipping not less than 2mm to protect from impacts, moisture and insects.
- e) The lipping, edging and lamination should be machine applied at high temperature and pressure.
- f) Keyboard shall have rail arrangement for smooth operation. Keyboard tray slide channel: stainless steel telescopic ball bearing channel.
- g) Number of keyboard tray with mouse pad: 1.

4.7 Electrical Fittings

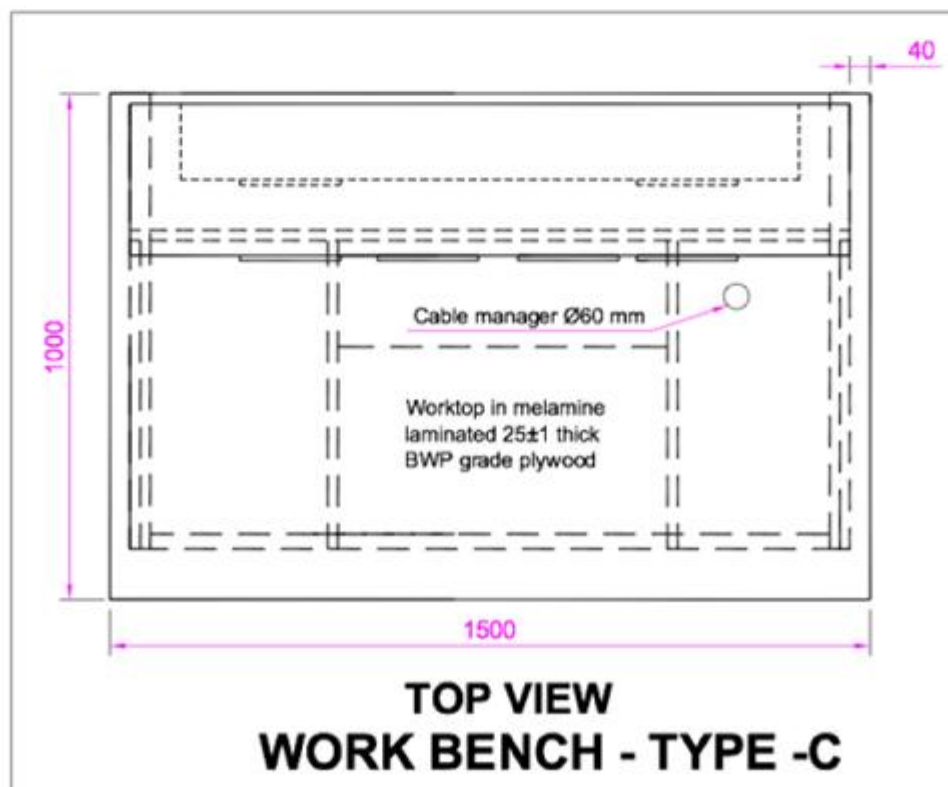
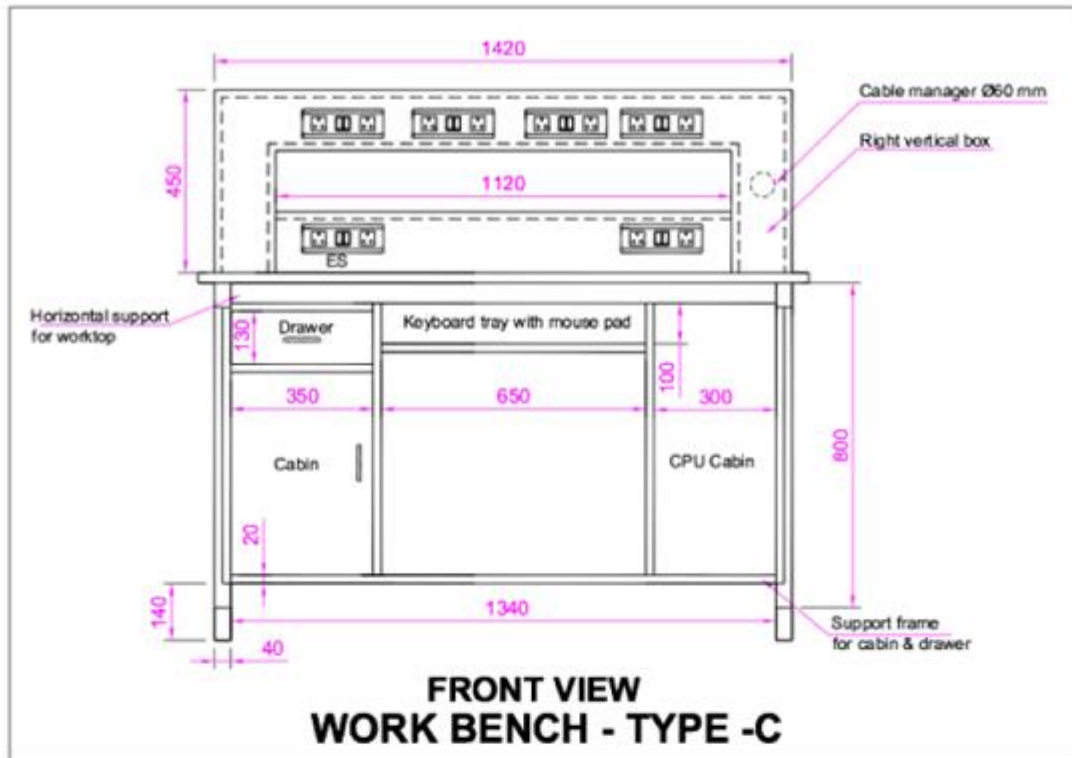
- a) Electrical fittings should be placed on two boxes (we call it as **Service boxes**) made up of 18±1mm thick BWP plywood laminated with 0.9±.1 mm thick melamine lamination. **Service Box 1** is on the worktop with dimensions mentioned in the drawing. The platform mentioned in **Section 4.3** is placed on the **Service Box 2** as given in the drawing. **Service Box 2** is supported by two vertical rectangular boxes (We call these boxes as **Vertical Boxes**) made up of 18±1mm thick BWP plywood with melamine lamination. The supplier is free to design the vertical boxes which support the top platform but it should not have metal sheets as cover.

- b) The internal wiring should be done by the supplier. Power Inlet should be placed inside the right **Vertical Box**. The right vertical box should be easily openable by the user in such a way that power cable from outside can be easily connected to the power inlet in the right vertical box.
- c) Cable: 1.1 kV grade ISI marked FRLS PVC insulated single core stranded copper conductor cable which conforms to IS 694. Size: 4mm².
- d) Electrical sockets and switches: 5/15 Amp (or 6/16 Amp) two-in-one electrical sockets and 15 Amp (or 16 Amp) one way switch for each sockets. The sockets and switches should be fixed on PVC modular sockets.
- e) Total number of electrical sockets:
 - (i) On Service Box 1: 2 x 2=4 numbers.
 - (ii) On Service Box 2: 4 x 2=8 numbers.
- f) The electrical sockets and switches should be connected at the places mentioned in the drawing.
- g) Approved Brands for electrical sockets and switches: LEGRAND, ABB, CRABTREE, GELCO, LISHA, NORTH-WEST, STANDARD, L&T, ROMA(ANCHOR), LITASKI, FINOSWITCH(FINOLEX), TOYAMA, SCHNEIDER, HAGER, MK, VEGA, KOLORS, EON, SALZER.

4.8 Drawings



5.



5. WORK BENCH TYPE D

(a) Dimension: Length=1500mm, Depth=1000mm, Height =905mm		
(b) Metal Frame: 14 gauge mild steel	....	5.1
(c) Worktop: 25±1 mm thick BWP plywood.	....	5.2
(d) Platform	....	5.3
(e) CPU cabin and under bench cabinet	....	5.4
(f) Drawer	....	5.5
(g) Key board tray with mouse pad	....	5.6
(h) Electrical Fittings	....	5.7
(i) Drawings	....	5.8

5.1 Metal Frame

- a) All metal frames should be made of **14 gauge mild steel** with rectangle hollow profile tubes.
- b) Frame Dimensions:
 1. C frame structures (two numbers):
 - I. Bottom frame: 80mm x 40mm (minimum)
 - II. All other frames: 60mm x 40mm (minimum)
 2. Vertical frames (frame connecting the bottom and top frames of C frame structures) (two numbers- left side & right side): 60mm x 40mm (minimum)
 3. Horizontal support frames for worktop:
 - I. Front side: 50mm x 30mm (minimum)
 - II. frame connecting two vertical frames : 20mm x 20mm (minimum)
 4. Bottom horizontal frame connecting two vertical frames to support cpu cabin, under bench cabinet and drawer : 20mm x 20mm (minimum)
- c) Frames mentioned above are minimum. The manufacturer can add extra frames for stable configuration of the table.
- d) Metal frames should conform the latest Indian Standards.
- e) All metal pieces should be welded together properly and strongly.
- f) The profile ends should be covered and protected with injection moulded ABS end caps.
- g) High Quality Feet Levellers (tough plastic/nylon) are to be installed under each legs.
- h) The work surface should be fixed on the metal framework using galvanised metal screws with proper size.
- i) **Specification of Powder Coating**
 - (i) Powder coating should be with Epoxy powder
 - (ii) Colour: light grey
 - (iii) The specific gravity of powder should be such that it gives DFT (Dry Film Thickness) of 60 - 70 micron.
 - (iv) SCRATCH HARDNESS TEST as per DIN 53153 shall be conducted and results should be such that no scratch shall show bare metal with a load of 3 kgs.

5.2 Worktop

- a) Dimension: Length=1500mm, Depth=1000mm
- b) Worktop should be made up of melamine laminated 25 ± 1 mm thick BWP plywood.
- c) The top should be factory-made, laminated with 0.9 ± 1 mm thickness
- d) Lamination colour: steam beach
- e) The melamine lamination should conform to BIS standards.
- f) The edges of the worktop should be sealed with 2mm thick PVC lipping/edge banding to protect from impacts, moisture and insects.
- g) The lipping, edging and lamination should be machine applied at high temperature and pressure.

5.3 Platform

- a) Dimension: Length=1400mm, Depth=300mm, Height from Worktop= 450mm
- b) The Platform is placed on the top of **Service Box 2** mentioned in the **Section 5.7**.
- c) Platform top should be made up of melamine laminated 25 ± 1 mm thick BWP plywood.
- d) The top should be laminated with 0.9 ± 1 mm thickness
- e) Lamination colour: steam beach
- f) The melamine lamination should conform to BIS standards.
- g) The edges of the worktop should be sealed with 2mm thick PVC lipping/edge banding to protect from impacts, moisture and insects.
- h) The lipping, edging and lamination should be machine applied at high temperature and pressure.

5.4 CPU cabin and Under bench cabin

- a) Dimension of CPU cabin: 300mm (Length) x 680mm (Height) x 590 mm (Depth)
- b) Dimension of Under bench cabin: 350mm (Length) x 680mm (Height) x 590 mm (Depth)
- c) CPU cabin, under bench cabin and key board tray should be made up of melamine laminated 18 ± 1 mm thick BWP plywood. Lamination thickness: 0.9 ± 1 mm.
- d) Lamination colour: steam beach.
- e) The edges should be sealed with 2mm thick PVC lipping/edge banding to protect from impacts, moisture and insects.
- f) The cabinet body should be made of permanent casework without any screws and mini-fix fittings (mini fix joints not accepted). There should not be gaps anywhere for dust accumulation inside of the cabinet body. All joints should be sealed and it should be easily cleanable.
- g) The lipping, edging and lamination should be machine applied at high temperature and pressure.
- h) Door of under bench cabinets should have smooth anodised aluminium grab rails powder coated with minimum 70 microns.
- i) Number of CPU cabins (right side): 1. The CPU cabin should be kept open at front and back. (door is not required.)
- j) Number of under bench cabin (left side): 1.

5.5 Drawer

- a) Dimension (inner): 350mm (Length)x 130mm (Height) x 590 mm (Depth)
- b) It should be made up of 18±1mm thick BWP plywood laminated with 0.9±.1 mm thick melamine laminates on both sides.
- c) All exposed edges are lipped with PVC lipping not less than 2mm to protect from impacts, moisture and insects.
- d) The lipping, edging and lamination should be machine applied at high temperature and pressure.
- e) Drawers shall have rail arrangement for smooth operation, with best quality stainless steel handle
- f) Drawer channel: Telescopic Ball Bearing Drawer Channel
- g) Lock and keys with optimum security: Rust-proof components, Lock should be made of stainless steel and two /three numbers of keys made of brass with moulded plastic head.
- h) Number of drawers: 1
- i) Lamination colour: steam beach

5.6 Keyboard tray with mouse pad

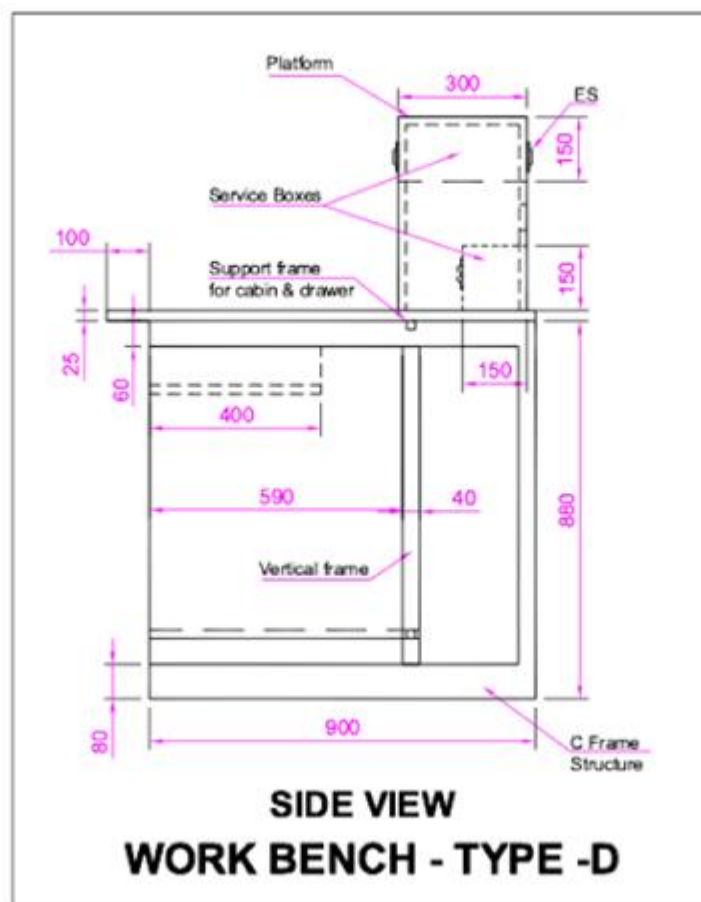
- a) Dimension (inner): 650mm (Length)x 100mm (Height) x 400 mm (Depth)
- b) It should be made up of 18±1mm thick BWP plywood laminated with 0.9±.1 mm thick melamine laminates on both sides.
- c) Lamination colour: steam beach
- d) All exposed edges are lipped with PVC lipping not less than 2mm to protect from impacts, moisture and insects.
- e) The lipping, edging and lamination should be machine applied at high temperature and pressure.
- f) Keyboard shall have rail arrangement for smooth operation. Keyboard tray slide channel: stainless steel telescopic ball bearing channel.
- g) Number of keyboard tray with mouse pad: 1.

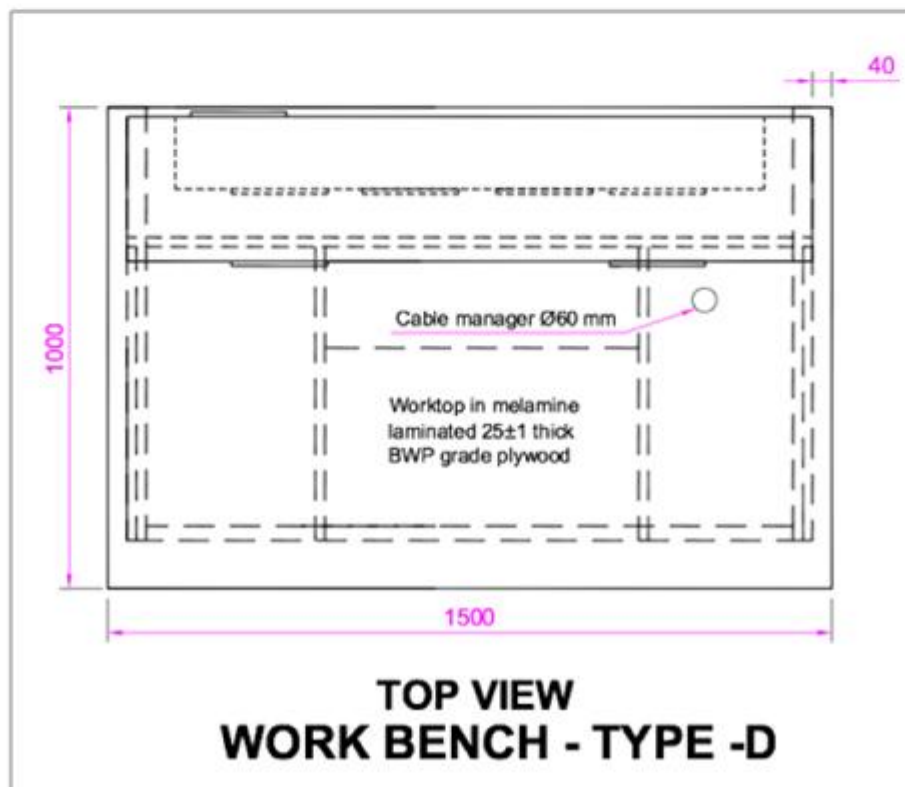
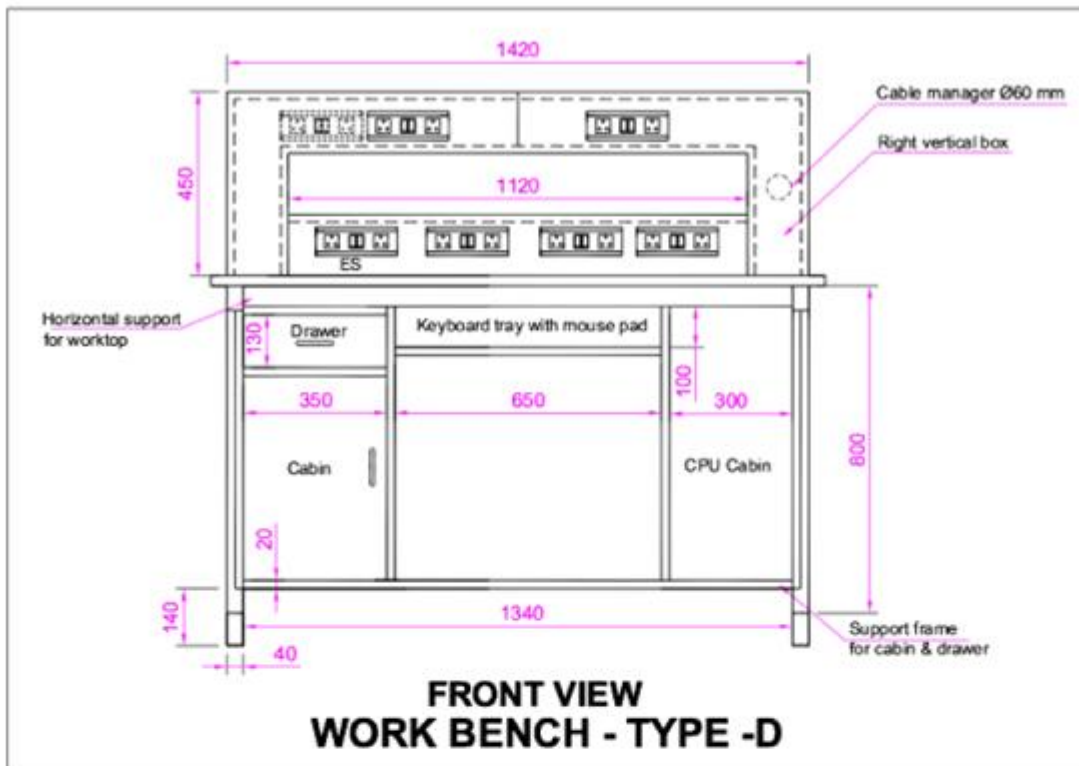
5.7 Electrical Fittings

- a) Electrical fittings should be placed on two boxes (we call it as **Service boxes**) made up of 18±1mm thick BWP plywood laminated with 0.9±.1 mm thick melamine lamination. **Service Box 1** is on the worktop with dimensions mentioned in the drawing. The platform mentioned in **Section 5.3** is placed on the **Service Box 2** as given in the drawing. **Service Box 2** is supported by two vertical rectangular boxes (We call these boxes as **Vertical Boxes**) made up of 18±1mm thick BWP plywood with melamine lamination. The supplier is free to design the vertical boxes which support the top platform but it should not have metal sheets as cover.

- b) The internal wiring should be done by the supplier. Power Inlet should be placed inside the right **Vertical Box**. The right vertical box should be easily openable by the user in such a way that power cable from outside can be easily connected to the power inlet in the right vertical box.
- c) Cable: 1.1 kV grade ISI marked FRLS PVC insulated single core stranded copper conductor cable which conforms to IS 694. Size: 4mm^2 .
- d) Electrical sockets and switches: 5/15 Amp (or 6/16 Amp) two-in-one electrical sockets and 15 Amp (or 16 Amp) one way switch for each sockets. The sockets and switches should be fixed on PVC modular sockets.
- e) Total number of electrical sockets:
 - (i) On Service Box 1: $2 \times 2 = 4$ numbers.
 - (ii) On Service Box 2: (Front side) $2 \times 2 = 4$ numbers; (rear side) $1 \times 2 = 2$ numbers.
- f) The electrical sockets and switches should be connected at the places mentioned in the drawing.
- g) Approved Brands for electrical sockets and switches: LEGRAND, ABB, CRABTREE, GELCO, LISHA, NORTH-WEST, STANDARD, L&T, ROMA(ANCHOR), LITASKI, FINOSWITCH(FINOLEX), TOYAMA, SCHNEIDER, HAGER, MK, VEGA, KOLORS, EON, SALZER.

5.8 Drawings





6. WORK BENCH TYPE E

- | | | |
|--|------|-----|
| (a) Dimension: Length=1500mm, Depth=1000mm, Height=905mm | | |
| (b) Metal Frame: 14 gauge mild steel | .... | 6.1 |
| (c) Worktop: 25±1 mm thick BWP plywood. | .... | 6.2 |
| (d) Drawer | .... | 6.3 |
| (e) Drawings | .... | 6.4 |

6.1 Metal Frame

- a) All metal frames should be made of **14 gauge mild steel** with rectangle hollow profile tubes.
- b) Frame Dimensions:
 - 1. C frame structures: 60mm x 40mm (minimum)
 - 2. Horizontal support frames for worktop: 50mm x 30mm (minimum)
 - 3. Bottom support frame: 60mm x 40mm (minimum)
 - 4. Foot Rest: 40mm x 30mm
- c) Frames mentioned above are minimum. The manufacturer can add extra frames for stable configuration of the table.
- d) All metal pieces should be welded together properly and strongly.
- e) Metal frames should conform to the latest Indian Standards.
- f) The profile ends should be covered and protected with injection moulded ABS end caps.
- g) High Quality Feet Levellers (tough plastic/nylon) are to be installed under each leg.
- h) The work surface should be fixed on the metal framework using galvanized metal screws with proper size.
- i) **Specification of Powder Coating**
 - (i) Powder coating should be with Epoxy powder
 - (ii) Colour: light grey
 - (iii) The specific gravity of powder should be such that it gives DFT (Dry Film Thickness) of 60 - 70 micron.
 - (iv) SCRATCH HARDNESS TEST as per DIN 53153 shall be conducted and results should be such that no scratch shall show bare metal with a load of 3 kgs.

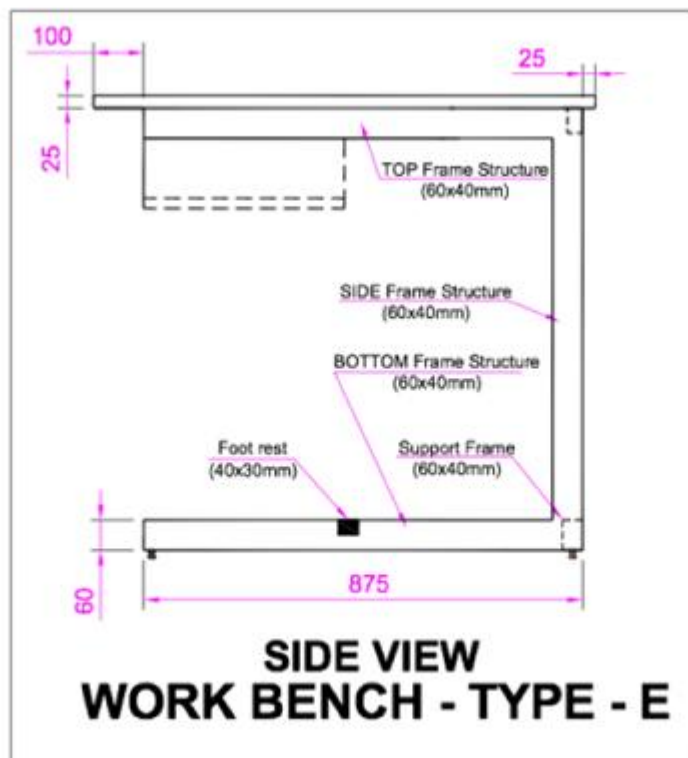
6.2 Worktop

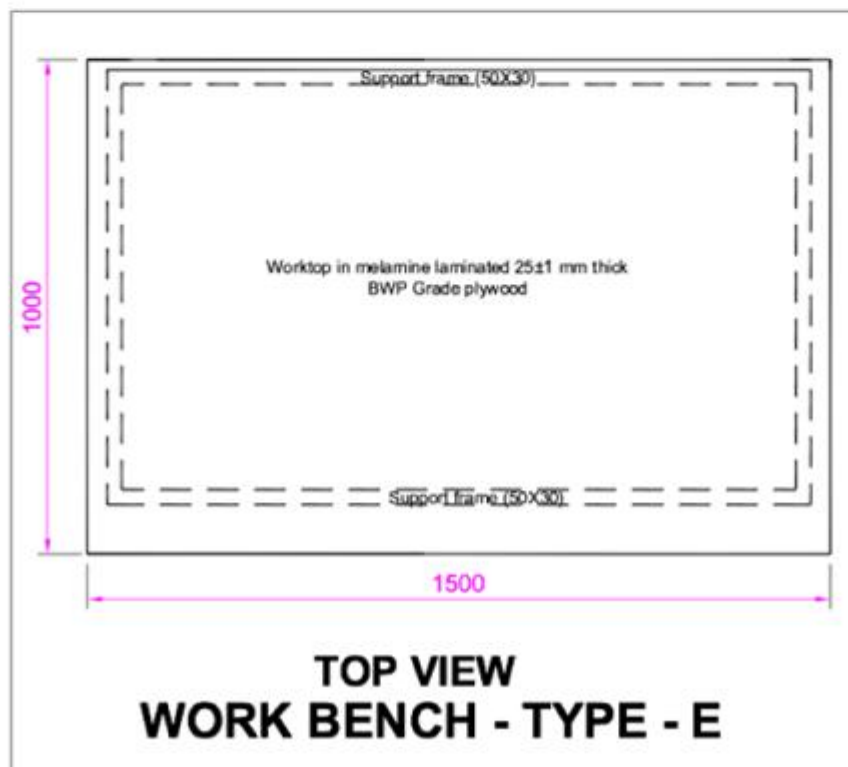
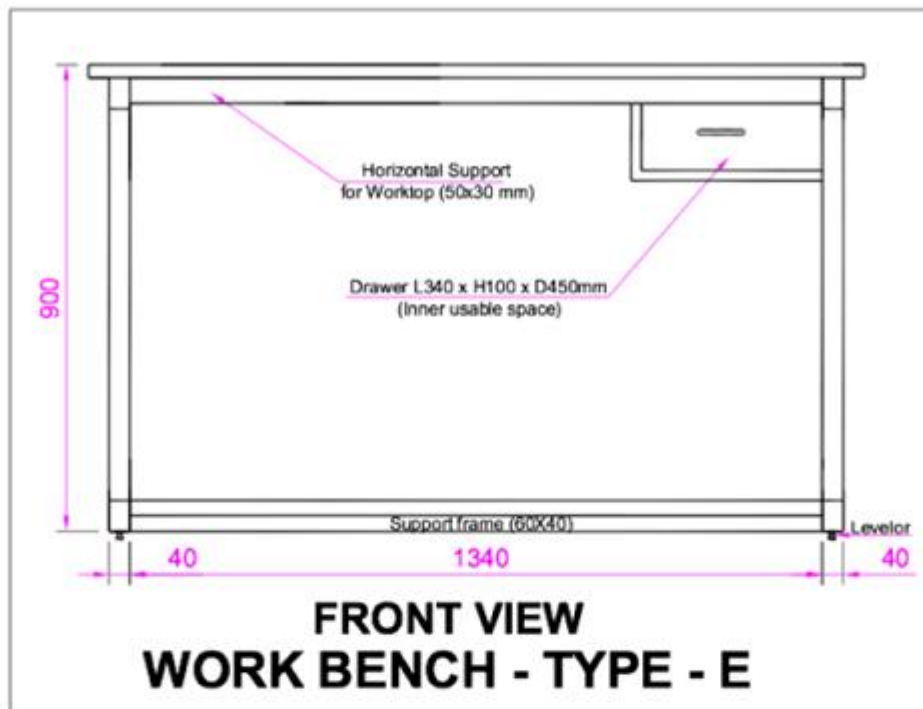
- a) Dimension: Length=1500mm, Depth=1000mm
- b) Worktop should be made up of melamine laminated 25±1 mm thick BWP (Boiling Water Proof) plywood.
- c) The top should be factory-made, laminated with 0.9 ±.1 mm thickness
- d) Lamination colour: steam beach
- e) The melamine lamination should conform to BIS standards.
- f) The edges of the worktop should be sealed with 2mm thick PVC lipping/edge banding to protect from impacts, moisture and insects.
- g) The lipping, edging and lamination should be machine applied at high temperature and pressure.

6.3 Drawer

- a) Dimension (inner): 340mm (Length)x 100mm (Height) x 450 mm (Depth)
- b) It should be made up of 18±1mm thick BWP plywood laminated with 0.9±.1 mm thick melamine laminates on both sides.
- c) All exposed edges are lipped with PVC lipping not less than 2mm to protect from impacts, moisture and insects.
- d) The lipping, edging and lamination should be machine applied at high temperature and pressure.
- e) Drawers shall have rail arrangement for smooth operation, with best quality stainless steel handle
- f) Drawer channel: Telescopic Ball Bearing Drawer Channel
- g) Lock and keys with optimum security: Rust-proof components, Lock should be made of stainless steel and two /three numbers of keys made of brass with moulded plastic head.
- h) Number of drawers: 1
- i) Lamination colour: steam beach

6.3 Drawings





7. WORK BENCH TYPE G

(a) Dimension: Length=1500mm, Depth=1000mm, Height=905mm		
(b) Metal Frame: 14 gauge mild steel	....	7.1
(c) Worktop: 25±1 mm thick BWP plywood.	....	7.2
(d) Under bench cabinets	....	7.3
(e) Drawer	....	7.4
(f) Drawings	....	7.5

7.1 Metal Frame

- a) All metal frames should be made of **14 gauge mild steel** with rectangle hollow profile tubes.
- b) Frame Dimensions:
 1. C frame structures (two numbers):
 - I. Bottom frame: 80mm x 40mm (minimum)
 - II. All other frames: 60mm x 40mm (minimum)
 2. Vertical frames (frame connecting the bottom and top frames of C frame structures) (two numbers- left side & right side): 60mm x 40mm (minimum)
 3. Horizontal support frames for worktop:
 - I. Front side: 50mm x 30mm (minimum)
 - II. frame connecting two vertical frames : 20mm x 20mm (minimum)
 4. Bottom horizontal frame connecting two vertical frames to support under bench cabinets and drawers : 20mm x 20mm (minimum)
- c) Frames mentioned above are minimum. The manufacturer can add extra frames for stable configuration of the table.
- d) Metal frames should conform to the latest Indian Standards.
- e) All metal pieces should be welded together properly and strongly.
- f) The profile ends should be covered and protected with injection moulded ABS end caps.
- g) High Quality Feet Levellers (tough plastic/nylon) are to be installed under each leg.
- h) The work surface should be fixed on the metal framework using galvanised metal screws with proper size.
- i) **Specification of Powder Coating**
 - (i) Powder coating should be with Epoxy powder
 - (ii) Colour: light grey
 - (iii) The specific gravity of powder should be such that it gives DFT (Dry Film Thickness) of 60 - 70 micron.
 - (iv) SCRATCH HARDNESS TEST as per DIN 53153 shall be conducted and results should be such that no scratch shall show bare metal with a load of 3 kgs.

7.2 Worktop

- a) Dimension: Length=1500mm, Depth=1000mm
- b) Worktop should be made up of melamine laminated 25 ± 1 mm thick BWP (Boiling Water Proof) plywood.
- c) The top should be factory-made, laminated with 0.9 ± 1 mm thickness
- d) Lamination colour: steam beach
- e) The melamine lamination should conform to BIS standards.
- f) The edges of the worktop should be sealed with 2mm thick PVC lipping/edge banding to protect from impacts, moisture and insects.
- g) The lipping, edging and lamination should be machine applied at high temperature and pressure.

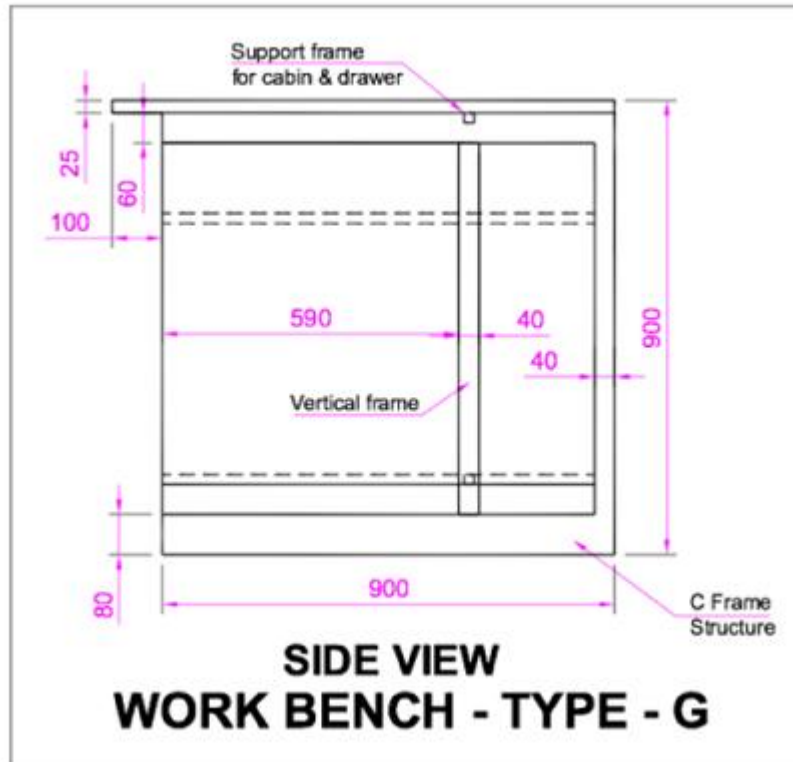
7.3 Under bench cabins

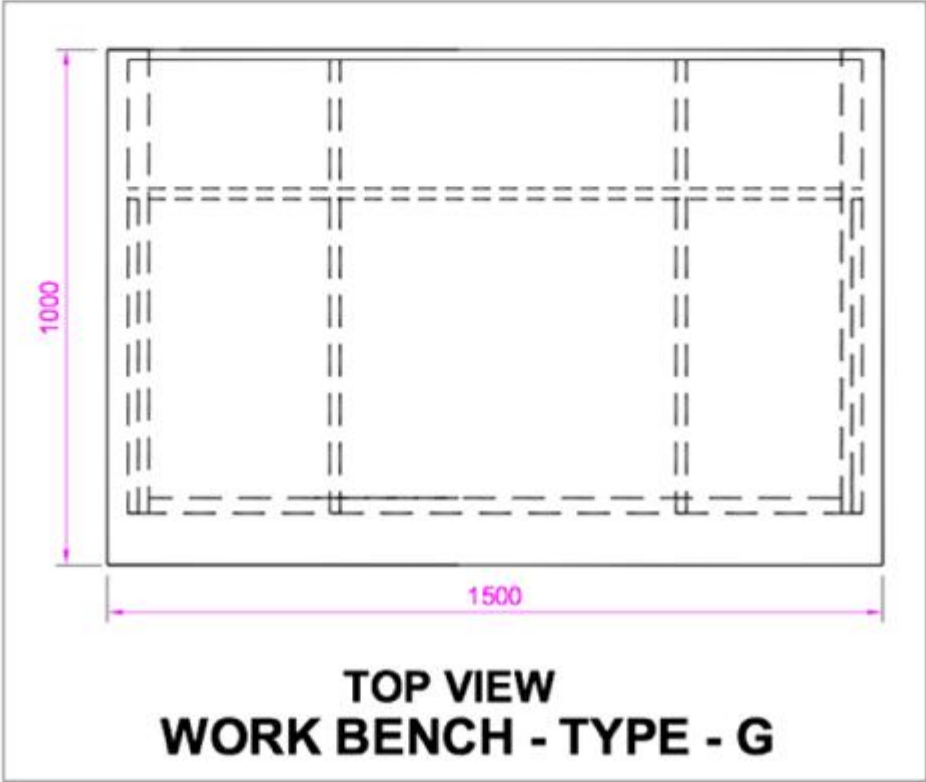
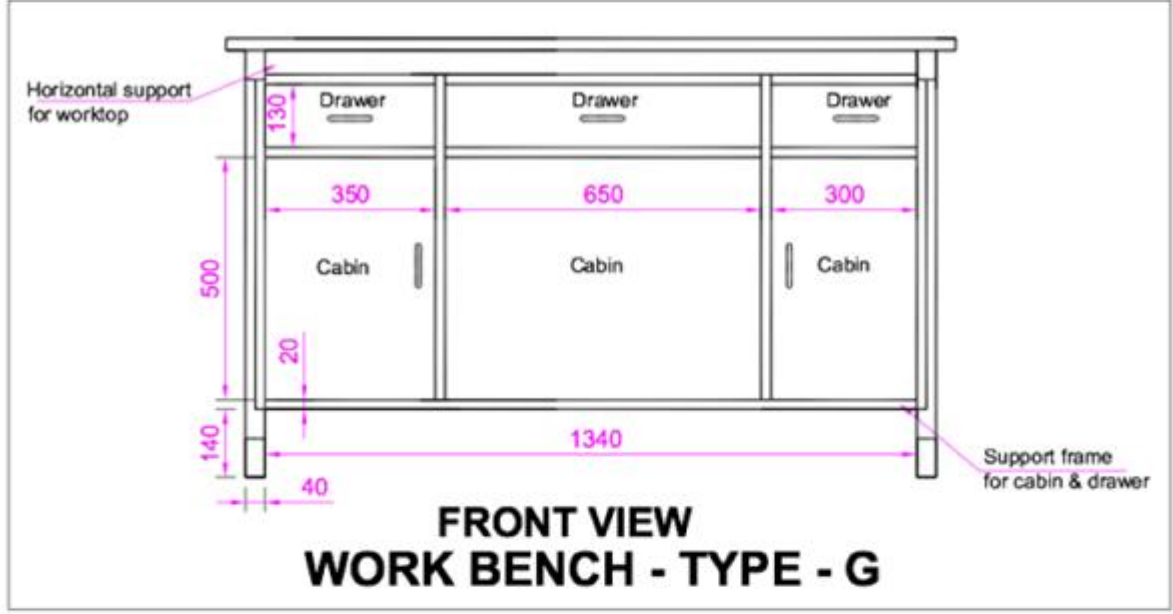
- a) Dimension of under bench cabins: As per the drawing given below.
- b) Under bench cabin should be made up of melamine laminated 18 ± 1 mm thick BWP plywood. Lamination thickness: 0.9 ± 1 mm.
- c) Lamination colour: steam beach.
- d) The edges should be sealed with 2mm thick PVC lipping/edge banding to protect from impacts, moisture and insects.
- e) The cabinet body should be made of permanent casework without any screws and mini-fix fittings (mini fix joints not accepted). There should not be gaps anywhere for dust accumulation inside of the cabinet body. All joints should be sealed and it should be easily cleanable.
- f) The lipping, edging and lamination should be machine applied at high temperature and pressure.
- g) Door of under bench cabinets should have smooth Anodized Aluminium grab rails powder coated with minimum 70 microns.
- h) Number of under bench cabins : 3.

7.4 Drawers

- a) Number of drawers: 3
- b) Dimension: As shown in the figures shown below
- c) It should be made up of 18 ± 1 mm thick BWP plywood laminated with 0.9 ± 1 mm thick melamine laminates on both sides.
- d) Lamination colour: steam beach
- e) All exposed edges are lipped with PVC lipping not less than 2mm to protect from impacts, moisture and insects.
- f) The lipping, edging and lamination should be machine applied at high temperature and pressure.
- g) Drawers shall have rail arrangement for smooth operation, with best quality stainless steel handle
- h) Drawer channel: Telescopic Ball Bearing Drawer Channel
- i) Lock and keys with optimum security: Rust-proof components, Lock should be made of stainless steel and two /three numbers of keys made of brass with moulded plastic head.

7.5 Drawings





8. Computer Table-Cubicle-Type 2

(a) Dimension: Length=1200mm, Depth=1600mm, Height =750mm		
(b) Metal Frames: 14 gauge mild steel	....	8.1
(c) Worktop: 25±1 mm thick BWP plywood.	....	8.2
(d) key board tray with mouse pad	...	8.3
(e) Electrical Fittings	....	8.4
(f) Drawings	....	8.5

8.1 Metal Frame

- a) All metal frames should be made of **14 gauge mild steel** with rectangle hollow profile tubes.
- b) Frame Dimensions:
 - i. C frame structures: 60mm x 40mm (minimum)
 - ii. Horizontal support for worktop: 50mm x 30mm (minimum)
 - iii. Bottom support: 60mm x 40mm (minimum)
- c) Frames mentioned above are minimum. The manufacturer can add extra frames for stable configuration of the table.
- d) Metal frames should conform to the latest Indian Standards.
- e) All metal pieces should be welded together properly and strongly.
- f) The profile ends should be covered and protected with injection moulded ABS end caps.
- g) High Quality Feet Levellers (tough plastic/nylon) are to be installed under each leg.
- h) The work surface should be fixed on the metal framework using galvanised metal screws with proper size.
- i) **Specification of Powder Coating**
 - i. Powder coating should be with Epoxy powder
 - ii. Colour: light grey
 - iii. The specific gravity of powder should be such that it gives DFT (Dry Film Thickness) of 60 - 70 micron.
 - iv. SCRATCH HARDNESS TEST as per DIN 53153 shall be conducted and results should be such that no scratch shall show bare metal with a load of 3 kgs.

8.2 Worktop

- a) Dimension: Length=1200mm, Depth=1600mm
- e) Worktop should be made up of melamine laminated 25±1 mm thick BWP plywood.
- f) The top should be factory-made, laminated with 0.9 ±.1 mm thickness
- g) Lamination colour: steam beach
- h) The melamine lamination should conform to BIS standards.

- i) The edges of the worktop should be sealed with 2mm thick PVC lipping/edge banding to protect from impacts, moisture and insects.
- j) The lipping, edging and lamination should be machine applied at high temperature and pressure.

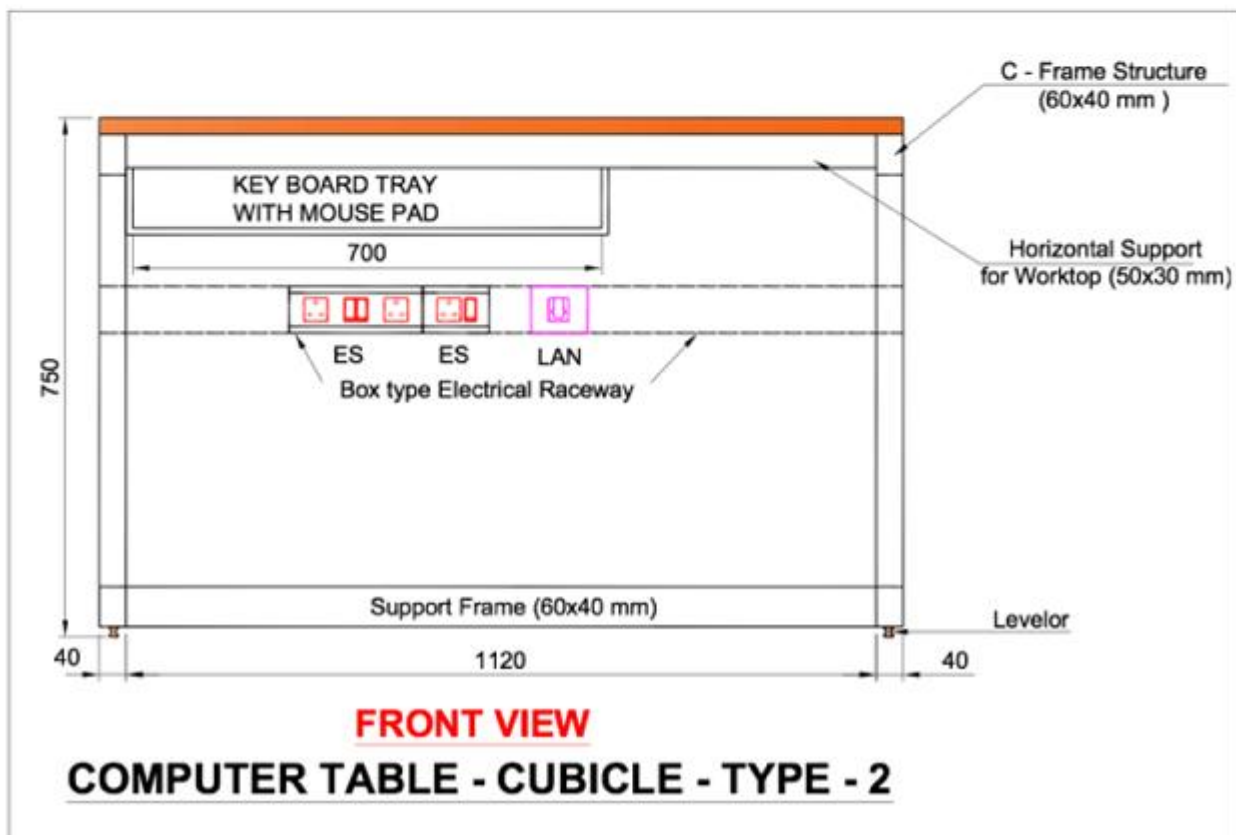
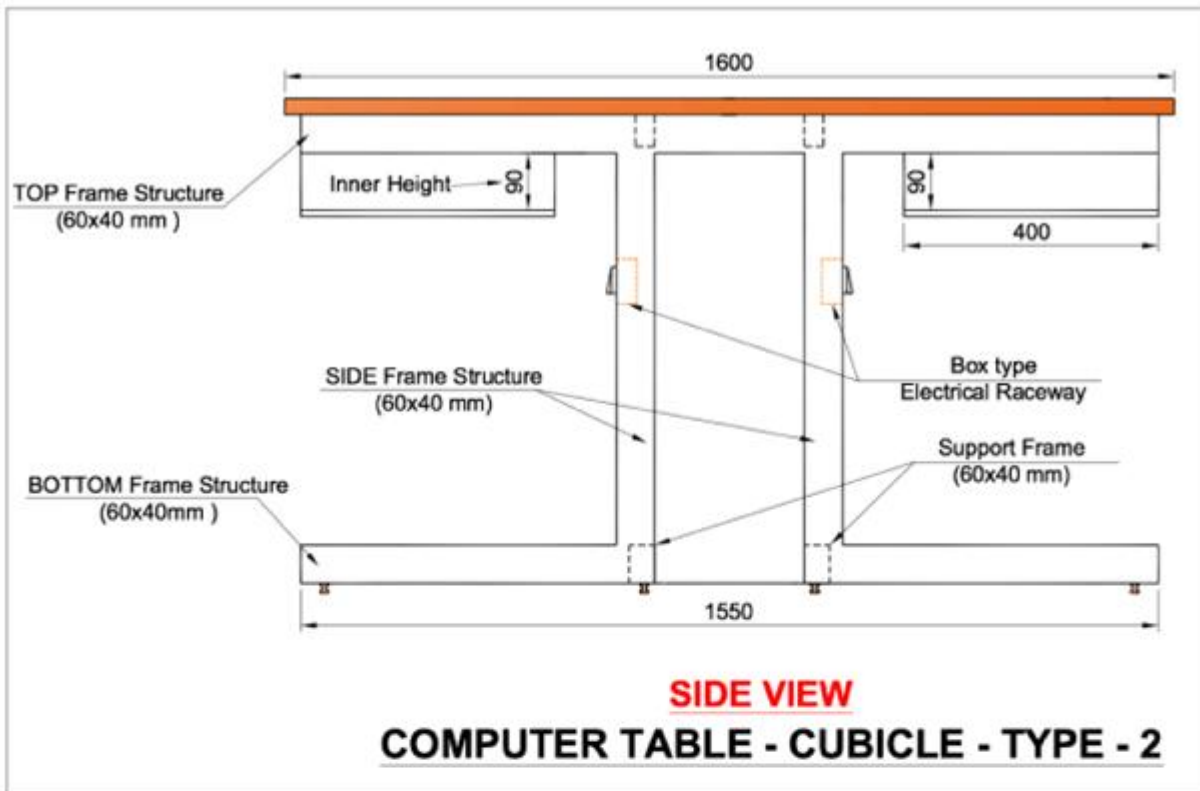
8.3 Key board tray with mouse pad

- a) Key board tray should be made up of melamine laminated 18±1 mm thick BWP plywood. Lamination thickness: 0.9±1mm.
- k) Lamination colour: Lamination colour: steam beach.
- l) The edges should be sealed with 2mm thick PVC lipping/edge banding to protect from impacts, moisture and insects.
- m) The lipping, edging and lamination should be machine applied at high temperature and pressure.
- n) Keyboard shall have rail arrangement for smooth operation. Keyboard tray slide channel: stainless steel telescopic ball bearing channel.
- j) Total number of keyboard tray with mouse pad: 2.

8.4 Electrical Fittings and Data Network Cables

- a) Appropriate module modular plates should be fixed on Galvanised Iron Raceway for 5/15 Amp (or 6/16 Amp) two-in-one electrical sockets, 15 Amp (or 16 Amp) one way switch for each sockets, and data network sockets. GI Raceway is fixed on the C-Frame structures. A single power Inlet for entire table and two Network Inlet should be fixed at one end of the table. (Basically there should be an easy access to give power and network to the table.) Power Inlet and Data Inlet should not project outside the table dimensions given above. Electrical Cable: 1.1 kV grade ISI marked FRLS PVC insulated single core stranded copper conductor cable which conforms to IS 694. Size: 4mm².
- k) Electrical sockets and switches: 5/15 Amp (or 6/16 Amp) two-in-one electrical sockets and 15 Amp (or 16 Amp) one way switch for each sockets. The sockets and switches should be fixed on GI Raceway
- l) Total number of electrical sockets: 2 x 3=6 numbers.
- m) The electrical sockets should be connected at the places mentioned in the drawing.
- n) Approved Brands for electrical sockets and switches: LEGRAND, ABB, CRABTREE, GELCO, LISHA, NORTH-WEST, STANDARD, L&T, ROMA(ANCHOR), LITASKI, FINOSWITCH(FINOLEX), TOYAMA, SCHNEIDER, HAGER, MK, VEGA, KOLORS, EON, SALZER.
- o) Total number of data sockets: 2 x 1 =2 numbers.
- p) Specifications for network cable: Cat-7 ethernet cable; The data sockets should ensure universal connectivity; Maximum data transmission speed: 10 Gigabits; Should support bandwidth upto 1000MHz.

8.5 Drawings



9. Computer Table-Type C-Three seater

- (a) Dimension: Length=3600mm, Depth=600mm, Height =750mm
- (b) Metal Frames: 14 gauge mild steel 9.1
- (c) Worktop: 25±1 mm thick BWP plywood. 9.2
- (d) CPU cabin and key board tray with mouse pad 9.3
- (e) Electrical Fittings 9.4
- (f) Drawings 9.5

9.1 Metal Frame

- a) All metal frames should be made of **14 gauge mild steel** with rectangle hollow profile tubes.
- b) Frame Dimensions:
 - i. C frame structures: 60mm x 40mm (minimum)
 - ii. Horizontal support for worktop: 50mm x 30mm (minimum)
 - iii. Bottom support: 60mm x 40mm (minimum)
- c) Frames mentioned above are minimum. The manufacturer can add extra frames for stable configuration of the table.
- d) Metal frames should conform to the latest Indian Standards.
- e) All metal pieces should be welded together properly and strongly.
- f) The profile ends should be covered and protected with injection moulded ABS end caps.
- g) High Quality Feet Levellers (tough plastic/nylon) are to be installed under each leg.
- h) The work surface should be fixed on the metal framework using galvanised metal screws with proper size.
- i) **Specification of Powder Coating**
 - i. Powder coating should be with Epoxy powder
 - ii. Colour: Sapphire Blue
 - iii. The specific gravity of powder should be such that it gives DFT (Dry Film Thickness) of 60 - 70 micron.
 - iv. SCRATCH HARDNESS TEST as per DIN 53153 shall be conducted and results should be such that no scratch shall show bare metal with a load of 3 kgs.

9.2 Worktop

- a. Dimension: Length=3600mm, Depth=600mm
- b. Worktop should be made up of melamine laminated 25±1 mm thick BWP plywood.
- c. The top should be factory-made, laminated with 0.9 ±.1 mm thickness
- d. Lamination colour: Grey
- e) The melamine lamination should conform to BIS standards.
- o) The edges of the worktop should be sealed with 2mm thick PVC lipping/edge banding to protect from impacts, moisture and insects.
- p) The lipping, edging and lamination should be machine applied at high temperature and pressure.

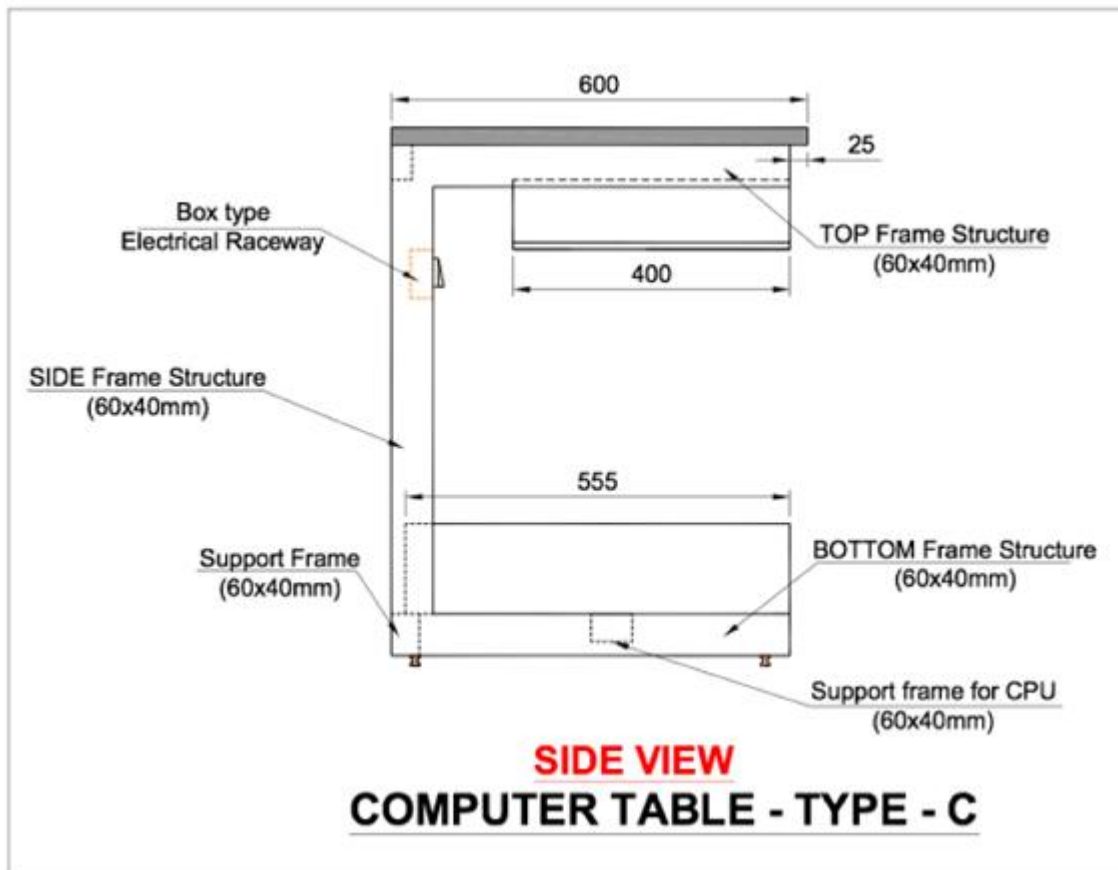
9.3 CPU cabin and key board tray with mouse pad

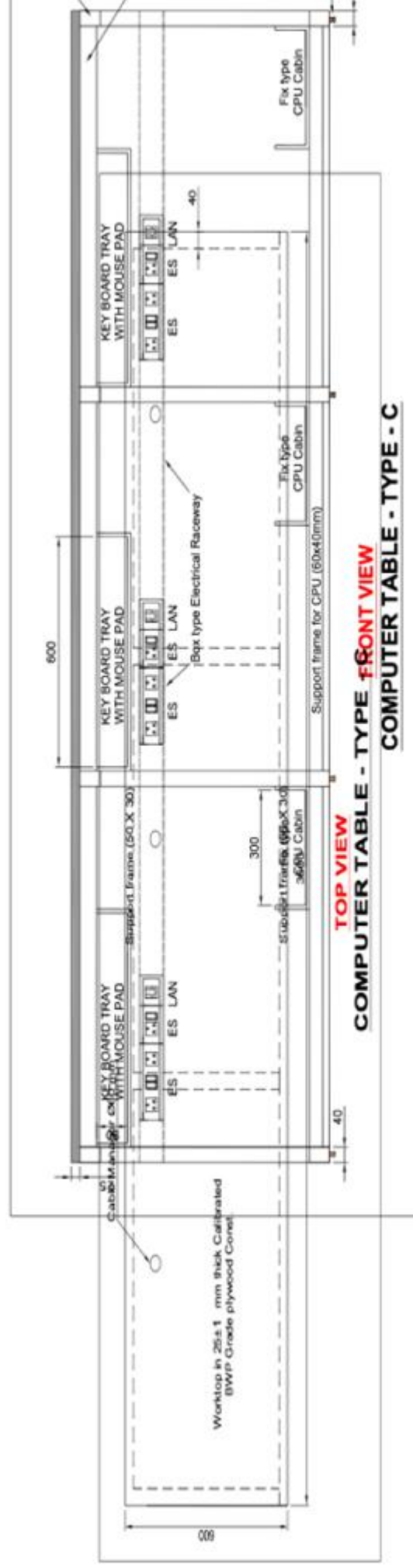
- a) CPU cabin and key board tray should be made up of melamine laminated 18 ± 1 mm thick BWP plywood. Lamination thickness: 0.9 ± 1 mm.
- b) Lamination colour: grey.
- c) Inner Dimension of CPU cabin: 300mm (Length)x 150mm (Height) x 555 mm (Depth). The CPU cabin should be kept open at front and back. (door is not required.)
- d) The edges should be sealed with 2mm thick PVC lipping/edge banding to protect from impacts, moisture and insects.
- e) The lipping, edging and lamination should be machine applied at high temperature and pressure.
- f) Keyboard shall have rail arrangement for smooth operation. Keyboard tray slide channel: stainless steel telescopic ball bearing channel. Dimension of the keyboard mentioned in the figures are inner dimension.
- g) Total number of CPU cabins: 3.
- h) total number of keyboard tray with mouse pad: 3.

9.4 Electrical Fittings and Data Network Cables

- a) Appropriate module modular plates should be fixed on Galvanised Iron Raceway for 5/15 Amp (or 6/16 Amp) two-in-one electrical sockets, 15 Amp (or 16 Amp) one way switch for each sockets, and data network sockets. GI Raceway is fixed on the C-Frame structures. A single power Inlet for entire table and two Network Inlet should be fixed at one end of the table. (Basically there should be an easy access to give power and network to the table.) Power Inlet and Data Inlet should not project outside the table dimensions given above. Electrical Cable: 1.1 kV grade ISI marked FRLS PVC insulated single core stranded copper conductor cable which conforms to IS 694. Size: 4mm^2 .
- b) Electrical sockets and switches: 5/15 Amp (or 6/16 Amp) two-in-one electrical sockets and 15 Amp (or 16 Amp) one way switch for each sockets. The sockets and switches should be fixed on GI Raceway
- c) Total number of electrical sockets: $3 \times 3 = 9$ numbers.
- d) The electrical sockets should be connected at the places mentioned in the drawing.
- e) Approved Brands for electrical sockets and switches: LEGRAND, ABB, CRABTREE, GELCO, LISHA, NORTH-WEST, STANDARD, L&T, ROMA(ANCHOR), LITASKI, FINOSWITCH(FINOLEX), TOYAMA, SCHNEIDER, HAGER, MK, VEGA, KOLORS, EON, SALZER.
- f) Total number of data sockets: $3 \times 1 = 3$ numbers.
- g) Specifications for network cable: Cat-7 ethernet cable; The data sockets should ensure universal connectivity; Maximum data transmission speed: 10 Gigabits; Should support bandwidth upto 1000MHz.

9.5 Drawings





10. Computer Table-Type E-Three seater

(a) Dimension: Length=3300mm, Depth=500mm, Height =750mm		
(b) Metal Frames: 14 gauge mild steel	....	10.1
(c) Worktop: 25±1 mm thick BWP plywood.	....	10.2
(d) CPU cabin and key board tray with mouse pad	....	10.3
(e) Partition	....	10.4
(f) Electrical Fittings	....	10.5
(g) Drawings	....	10.6

10.1 Metal Frame

- a) All metal frames should be made of **14 gauge mild steel** with rectangle hollow profile tubes.
- b) Frame Dimensions:
 - i. C frame structures: 60mm x 40mm (minimum)
 - ii. Horizontal support for worktop: 50mm x 30mm (minimum)
 - iii. Bottom support: 60mm x 40mm (minimum)
- c) Frames mentioned above are minimum. The manufacturer can add extra frames for stable configuration of the table.
- d) Metal frames should conform to the latest Indian Standards.
- e) All metal pieces should be welded together properly and strongly.
- f) The profile ends should be covered and protected with injection moulded ABS end caps.
- g) High Quality Feet Levellers (tough plastic/nylon) are to be installed under each leg.
- h) The work surface should be fixed on the metal framework using galvanized metal screws with proper size.
- i) **Specification of Powder Coating**
 - i. Powder coating should be with Epoxy powder
 - ii. Colour: light grey
 - iii. The specific gravity of powder should be such that it gives DFT (Dry Film Thickness) of 60 - 70 micron.
 - iv. SCRATCH HARDNESS TEST as per DIN 53153 shall be conducted and results should be such that no scratch shall show bare metal with a load of 3 kgs.

10.2 Worktop

- a) Dimension: Length=3300mm, Depth=600mm
- b) Worktop should be made up of melamine laminated 25±1 mm thick BWP plywood.
- c) The top should be factory-made, laminated with 0.9 ±.1 mm thickness
- d) Lamination colour: steam beech
- e) The melamine lamination should conform to BIS standards.
- f) The edges of the worktop should be sealed with 2mm thick PVC lipping/edge banding to protect from impacts, moisture and insects.
- g) The lipping, edging and lamination should be machine applied at high temperature and pressure.

10.3 CPU cabin and key board tray with mouse pad

- a) CPU cabin and key board tray should be made up of melamine laminated 18 ± 1 mm thick BWP plywood. Lamination thickness: 0.9 ± 1 mm.
- b) Lamination colour: steam beech.
- c) Inner Dimension of CPU cabin: 300mm (Length) x 150mm (Height) x 455 mm (Depth). The CPU cabin should be kept open at front and back. (door is not required.)
- d) The edges should be sealed with 2mm thick PVC lipping/edge banding to protect from impacts, moisture and insects.
- e) The lipping, edging and lamination should be machine applied at high temperature and pressure.
- f) Keyboard shall have rail arrangement for smooth operation. Keyboard tray slide channel: stainless steel telescopic ball bearing channel. Dimension of the keyboard mentioned in the figures are inner dimension.
- g) Total number of CPU cabins: 3.
- h) total number of keyboard tray with mouse pad: 3.

10.4 Partition

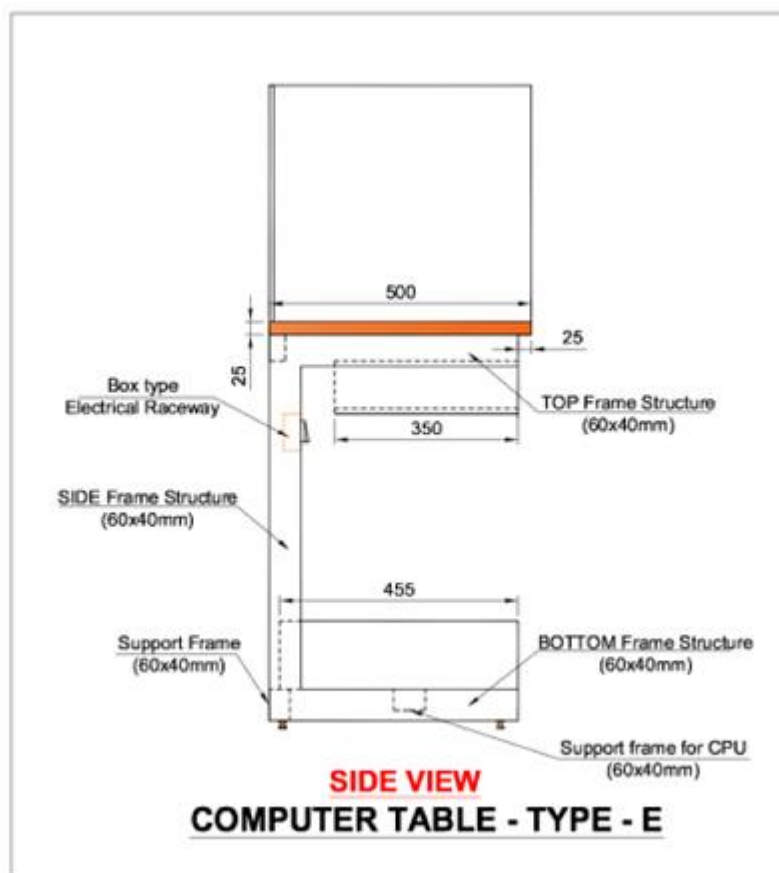
- a) Side Partitions: Dimensions: 600 mm (Depth) x 300 mm (Height)
 - 1. It should be firmly fixed and strong
 - 2. It should be made of 18mm thick BWP plywood laminated with 0.9 ± 1 mm thick melamine laminates on both sides.
 - 3. Lamination colour: dark brown
 - 4. The melamine lamination should conform to BIS standards.
 - 5. All exposed edges are lipped with PVC lipping not less than 2 mm to protect from impacts, moisture and insects.
 - 6. The lipping, edging and lamination should be machine applied at high temperature and pressure.
- i) 8 mm thick glass partition at back as shown in the figure.

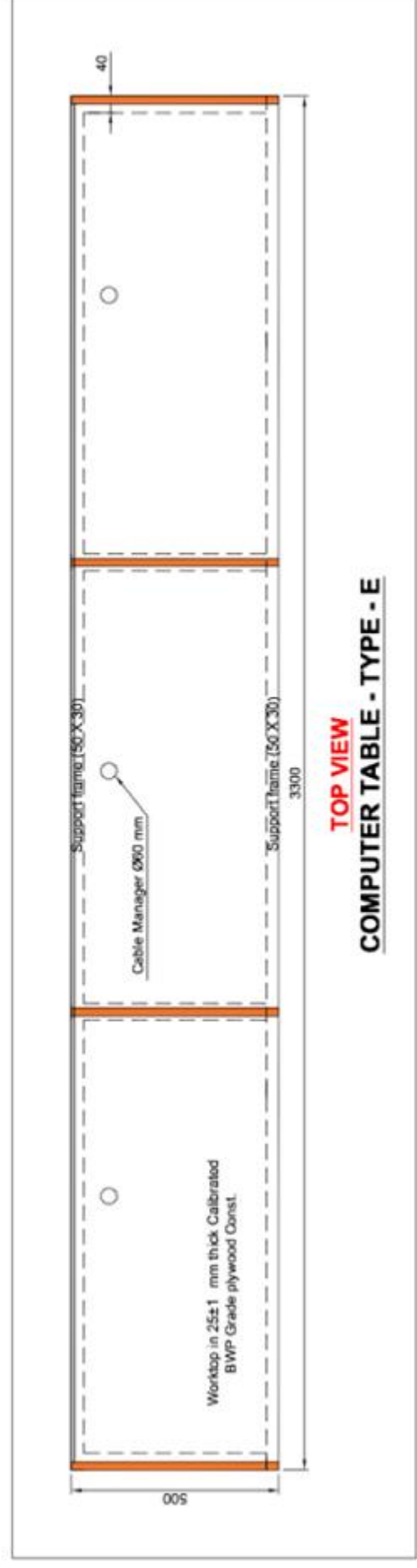
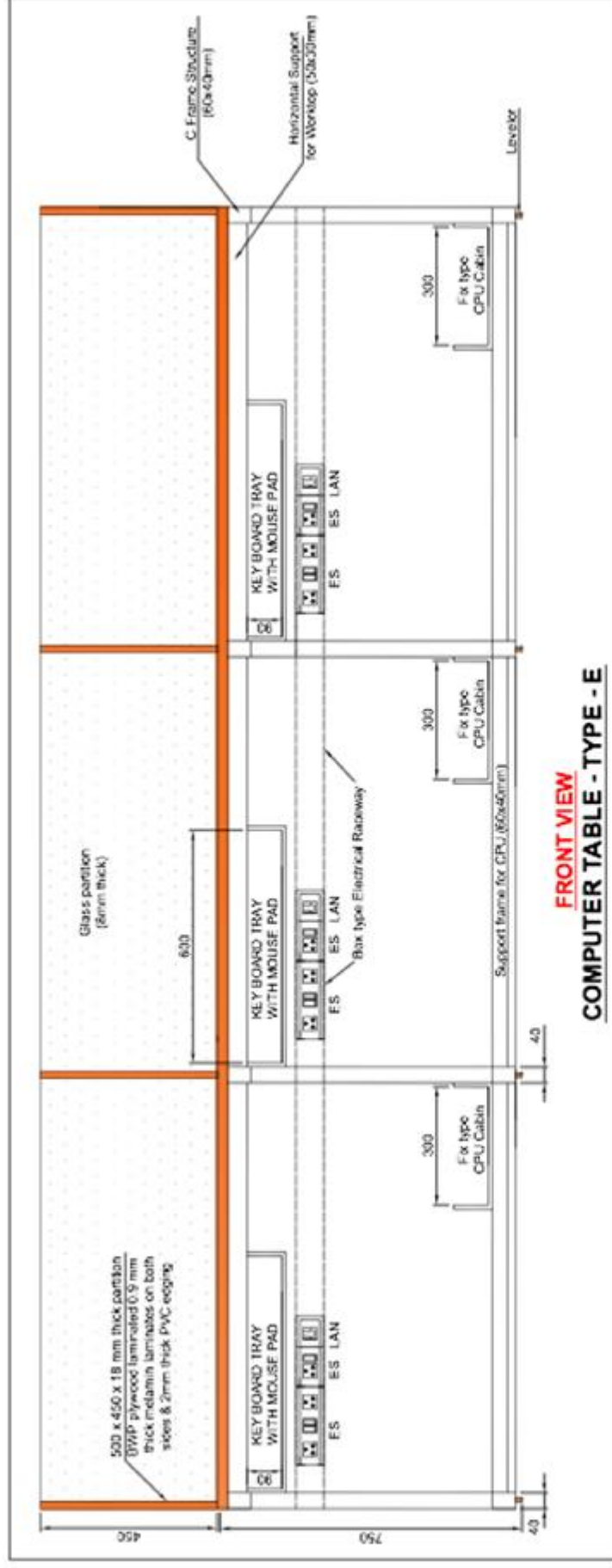
10.5 Electrical Fittings and Data Network Cables

- a) Appropriate module modular plates should be fixed on Galvanised Iron Raceway for 5/15 Amp (or 6/16 Amp) two-in-one electrical sockets, 15 Amp (or 16 Amp) one way switch for each sockets, and data network sockets. GI Raceway is fixed on the C-Frame structures. A single power Inlet for entire table and two Network Inlet should be fixed at one end of the table. (Basically there should be an easy access to give power and network to the table.) Power Inlet and Data Inlet should not project outside the table dimensions given above. Electrical Cable: 1.1 kV grade ISI marked FRLS PVC insulated single core stranded copper conductor cable which conforms to IS 694. Size: 4mm^2 .
- b) Electrical sockets and switches: 5/15 Amp (or 6/16 Amp) two-in-one electrical sockets and 15 Amp (or 16 Amp) one way switch for each sockets. The sockets and switches should be fixed on GI Raceway
- c) Total number of electrical sockets: $3 \times 3 = 9$ numbers.

- d) The electrical sockets should be connected at the places mentioned in the drawing.
- e) Approved Brands for electrical sockets and switches: LEGRAND, ABB, CRABTREE, GELCO, LISHA, NORTH-WEST, STANDARD, L&T, ROMA(ANCHOR), LITASKI, FINOSWITCH(FINOLEX), TOYAMA, SCHNEIDER, HAGER, MK, VEGA, KOLORS, EON, SALZER.
- f) Total number of data sockets: $3 \times 1 = 3$ numbers.
- g) Specifications for network cable: Cat-7 ethernet cable; The data sockets should ensure universal connectivity; Maximum data transmission speed: 10 Gigabits; Should support bandwidth upto 1000MHz.

6.5 Drawings





11. Research Scholar Table-Single Seater

(a) Dimension: Length=1200mm, Depth=600mm, Height =750mm		
(b) Metal Frames: 14 gauge mild steel	....	11.1
(c) Worktop: 25±1 mm thick BWP plywood.	....	11.2
(d) Drawer Specifications	....	11.3
(e) Side Partitions	....	11.4
(f) Drawings	....	11.5

11.1 Metal Frame

- a) The metal frames should be made of **14 gauge mild steel** with rectangle hollow profile tubes.
- b) Frame Dimensions:
 - 1. C frames: 60mm x 40mm
 - 2. Horizontal support frames for worktop: 50mm x 30mm
 - 3. Bottom support: 60mm x 40mm (minimum)
 - 4. Foot rest frame: 60mm x 30mm
- c) Frames mentioned above are minimum. The manufacturer can add extra frames for stable configuration of the table.
- d) Metal frames should conform the latest Indian Standards.
- e) All metal pieces should be welded together properly and strongly.
- f) The profile ends should be covered and protected with injection moulded ABS end caps.
- g) High Quality Feet Levellers (tough plastic/nylon) are to be installed under each legs.
- h) The work surface should be fixed on the metal framework using galvanised metal screws with proper size.
- i) **Specification of Powder Coating**
 - 1. Powder coating should be with Epoxy powder
 - 2. Colour: light grey
 - 3. The specific gravity of powder should be such that it gives DFT (Dry Film Thickness) of 60 - 70 micron.
 - 4. SCRATCH HARDNESS TEST as per DIN 53153 shall be conducted and results should be such that no scratch shall show bare metal with a load of 3 kgs.

11.2 Worktop

- a) Dimension: Length=1200mm, Depth=600mm
- b) Work surface should be made up of melamine laminated 25±1 mm thick BWP plywood.
- c) The top should be factory-made, laminated with 0.9±1mm thickness
- d) Lamination colour: dark brown
- e) The melamine lamination should conform to BIS standards.
- f) The edges of the worktop should be sealed with 2mm thick PVC lipping/edge banding to protect from impacts, moisture and insects.
- g) The lipping, edging and lamination should be machine applied at high temperature and pressure.

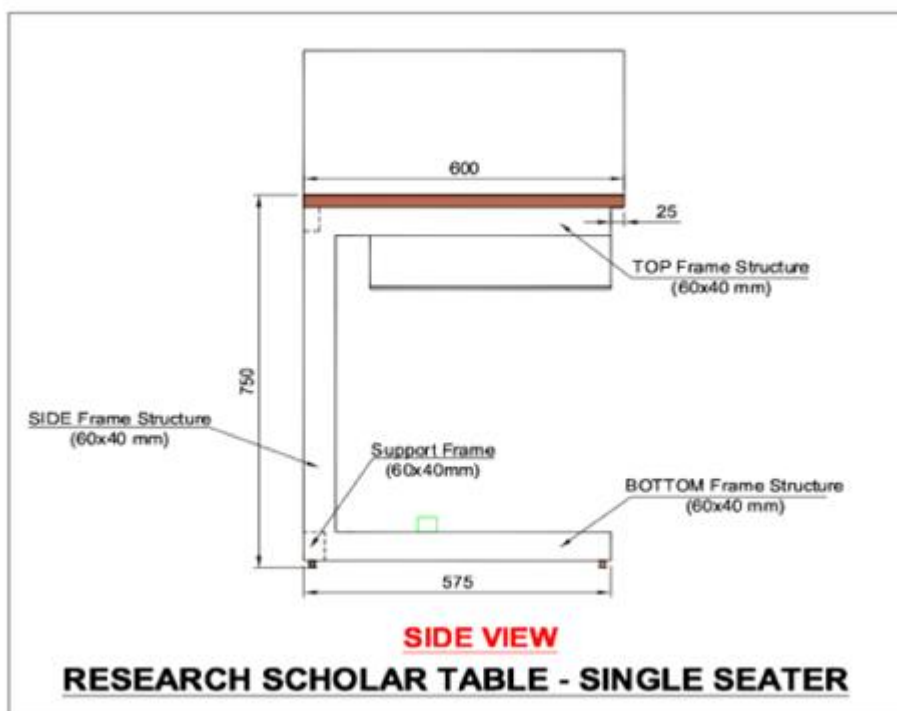
11.3 Drawer Specifications

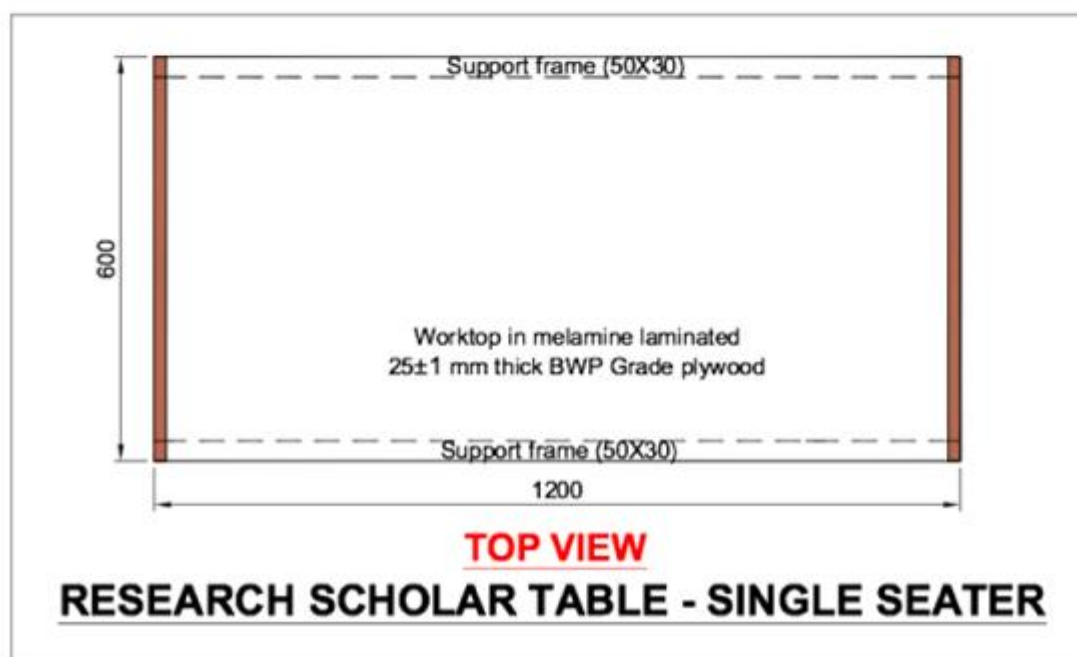
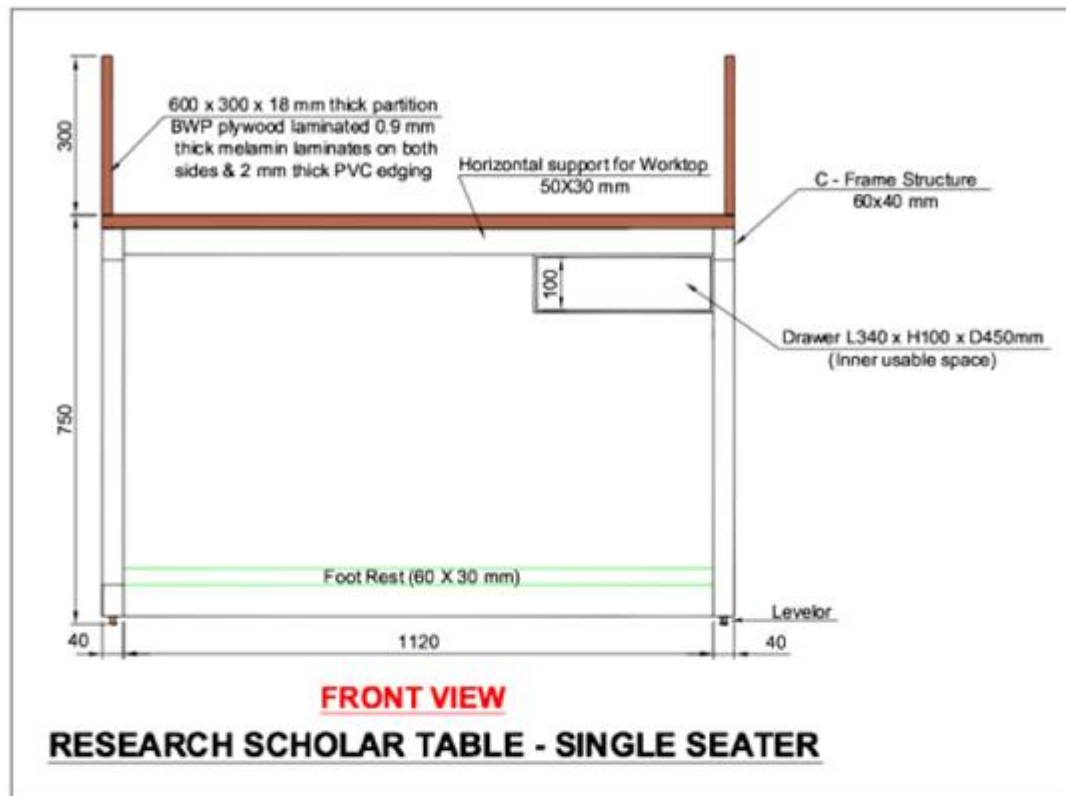
- a) Dimension (inner usable space): 340mm (Length)x 100mm (Height) x 450 mm (Depth)
- b) It should be made of 18±1mm thick BWP plywood laminated with 0.9±1 mm thick melamine laminates on both sides.
- c) Lamination colour: dark brown
- d) The edges of the worktop should be sealed with 2mm thick PVC lipping/edge banding to protect from impacts, moisture and insects.
- e) The lipping, edging and lamination should be machine applied at high temperature and pressure.
- f) Drawers shall have rail arrangement for smooth operation, with best quality stainless steel handle
- g) Drawer channel: Telescopic Ball Bearing Drawer Channel
- b) Lock and keys with optimum security: Rust-proof components, Lock should be made of stainless steel and two /three numbers of keys made of brass with moulded plastic head.

11.4 Side partitions

- a) Dimensions: 600 mm (Depth) x 300 mm (Height)
- b) It should be firmly fixed and strong
- c) It should be made of 18±1mm thick BWP plywood laminated with 0.9±1 mm thick melamine laminates on both sides.
- d) Lamination colour: dark brown
- e) The edges of the worktop should be sealed with 2mm thick PVC lipping/edge banding to protect from impacts, moisture and insects.
- f) The lipping, edging and lamination should be machine applied at high temperature and pressure.

11.5 Drawings





2. Research Scholar Table-Cubicle

(a) Dimension: Length=1200mm, Depth=1400mm, Height =750mm		
(b) Metal Frames: 14 gauge mild steel	....	12.1
(c) Worktop: 24±1 mm thick BWP plywood.	....	12.2
(d) Drawer Specifications	....	12.3
(e)Partitions	....	12.4
(f) Electrical Fittings	....	12.5
(g) Drawings	....	12.6

12.1 Metal Frame

- a) All metal frames should be made of **14 gauge mild steel** with rectangle hollow profile tubes.
- b) Frame Dimensions:
 - i. C frame structures: 60mm x 40mm (minimum)
 - ii. Front and back horizontal support for worktop: 50mm x 30mm (minimum)
 - iii. Bottom support frames: 60mm x 40mm (minimum)
 - iv. Foot rest (two numbers): 60mm x 30mm (minimum)
- c) Frames mentioned above are minimum. The manufacturer can add extra frames for stable configuration of the table.
- d) Metal frames should conform to the latest Indian Standards.
- e) All metal pieces should be welded together properly and strongly.
- f) The profile ends should be covered and protected with injection moulded ABS end caps.
- g) High Quality Feet Levellers (tough plastic/nylon) are to be installed under each leg.
- h) The work surface should be fixed on the metal framework using galvanised metal screws with proper size.
- i) **Specification of Powder Coating**
 - i. Powder coating should be with Epoxy powder
 - ii. Colour: light grey
 - iii. The specific gravity of powder should be such that it gives DFT (Dry Film Thickness) of 60 - 70 micron.
 - iv. SCRATCH HARDNESS TEST as per DIN 53153 shall be conducted and results should be such that no scratch shall show bare metal with a load of 3 kgs.

12.2 Worktop

- a) Dimension: Length=1200mm, Depth=1400mm
- b) Worktop should be made up of melamine laminated 25±1 mm thick BWP plywood.
- c) The top should be factory-made, laminated with 0.9 ±.1 mm thickness
- d) Lamination colour: light brown
- e) The melamine lamination should conform to BIS standards.
- f) The edges of the worktop should be sealed with 2mm thick PVC lipping/edge banding to protect from impacts, moisture and insects.
- g) The lipping, edging and lamination should be machine applied at high temperature and pressure.

12.3 Drawer Specifications

- a) Dimension (inner): 340mm (Length)x 100mm (Height) x 450 mm (Depth)
- b) It should be made of 18±1mm thick BWP plywood laminated with 0.9±1 mm thick melamine laminates on both sides.
- c) Lamination colour: dark brown
- d) The edges of the worktop should be sealed with 2mm thick PVC lipping/edge banding to protect from impacts, moisture and insects.
- e) The lipping, edging and lamination should be machine applied at high temperature and pressure.
- f) Drawers shall have rail arrangement for smooth operation, with best quality stainless steel handle
- g) Drawer channel: Telescopic Ball Bearing Drawer Channel
- h) Lock and keys with optimum security: Rust-proof components, Lock should be made of stainless steel and two /three numbers of keys made of brass with moulded plastic head.
- i) Total Number of Drawers: 2

12.4 Partitions

- a) Dimensions:
 - 1. left and right side: 1400 mm (Depth) x 300 mm (Height)
 - 2. Middle separation: 1200 mm (Length) x 300 mm (Height)
- b) It should be firmly fixed and strong
- c) It should be made of 18±1mm thick BWP plywood laminated with 0.9±1 mm thick melamine laminates on both sides.
- d) Lamination colour: dark brown
- e) The edges of the worktop should be sealed with 2mm thick PVC lipping/edge banding to protect from impacts, moisture and insects.
- f) The lipping, edging and lamination should be machine applied at high temperature and pressure.

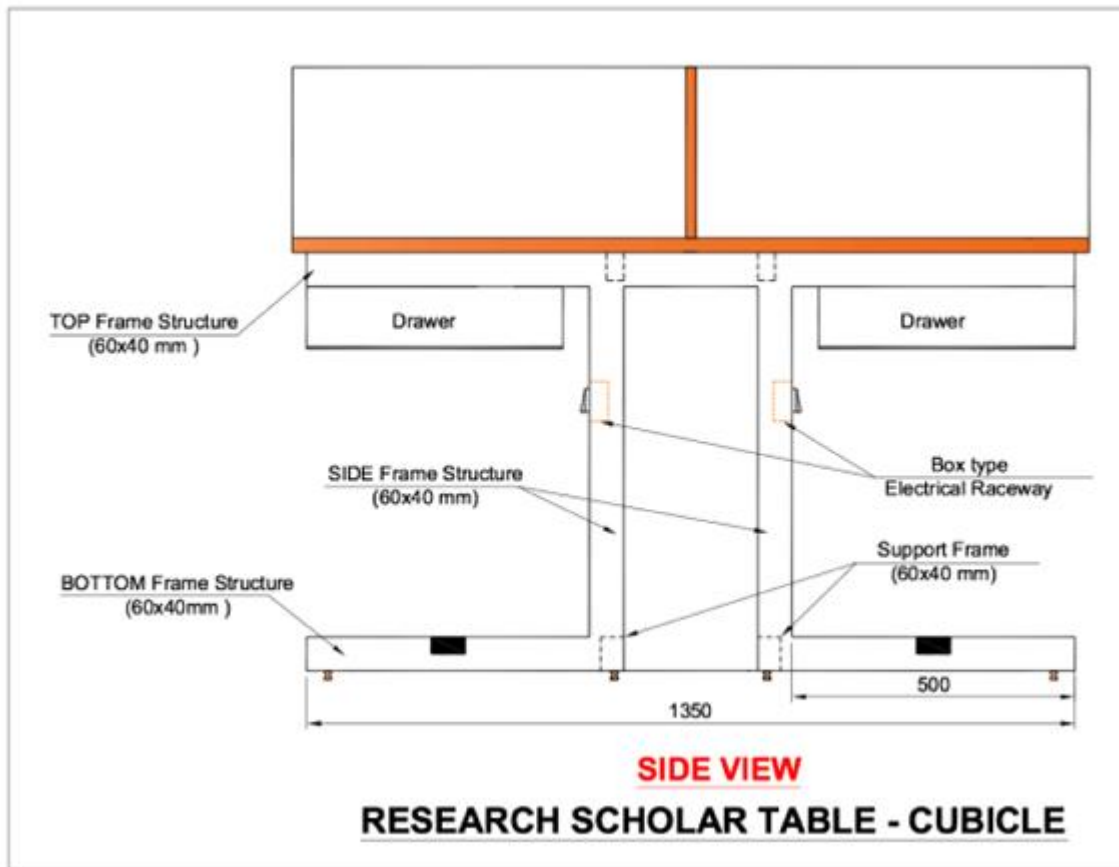
12.5 Electrical Fittings and Data Network Cables

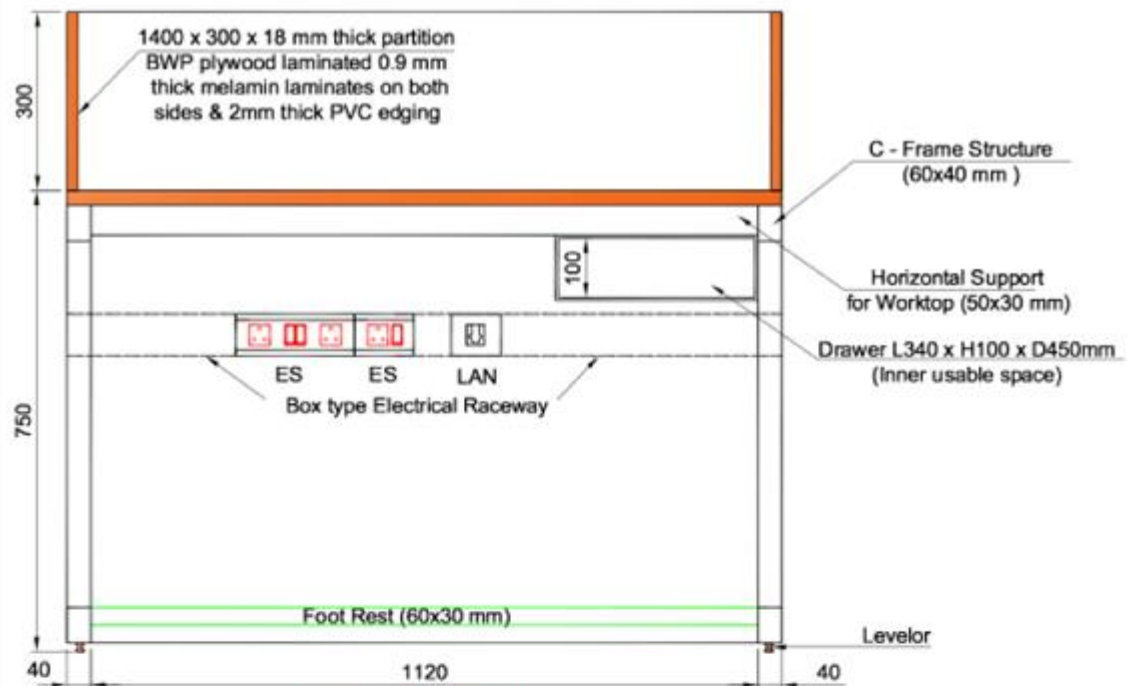
- a) Appropriate module modular plates should be fixed on Galvanised Iron Raceway for 5/15 Amp (or 6/16 Amp) two-in-one electrical sockets, 15 Amp (or 16 Amp) one way switch for each sockets, and data network sockets. GI Raceway is fixed on the C-Frame structures. A single power Inlet for entire table and two Network Inlet should be fixed at one end of the table. (Basically there should be an easy access to give power and network to the table.) Power Inlet and Data Inlet should not project outside the table dimensions given above. Electrical Cable: 1.1 kV grade ISI marked FRLS PVC insulated single core stranded copper conductor cable which conforms to IS 694. Size: 4mm².
- b) Electrical sockets and switches: 5/15 Amp (or 6/16 Amp) two-in-one electrical sockets and 15 Amp (or 16 Amp) one way switch for each sockets. The sockets and switches should be fixed on PVC modular sockets.
- c) Total number of electrical sockets: 2 x 3=6 numbers.
- d) The electrical sockets should be connected at the places mentioned in the drawing.
- e) Approved Brands for electrical sockets and switches: LEGRAND, ABB, CRABTREE, GELCO, LISHA, NORTH-WEST, STANDARD, L&T, ROMA(ANCHOR), LITASKI,

FINOSWITCH(FINOLEX), TOYAMA, SCHNEIDER, HAGER, MK, VEGA, KOLORS, EON, SALZER.

- f) Total number of data sockets: $2 \times 1 = 2$ numbers.
- g) Specifications for network cable: Cat-7 ethernet cable; The data sockets should ensure universal connectivity; Maximum data transmission speed: 10 Gigabits; Should support bandwidth upto 1000MHz.

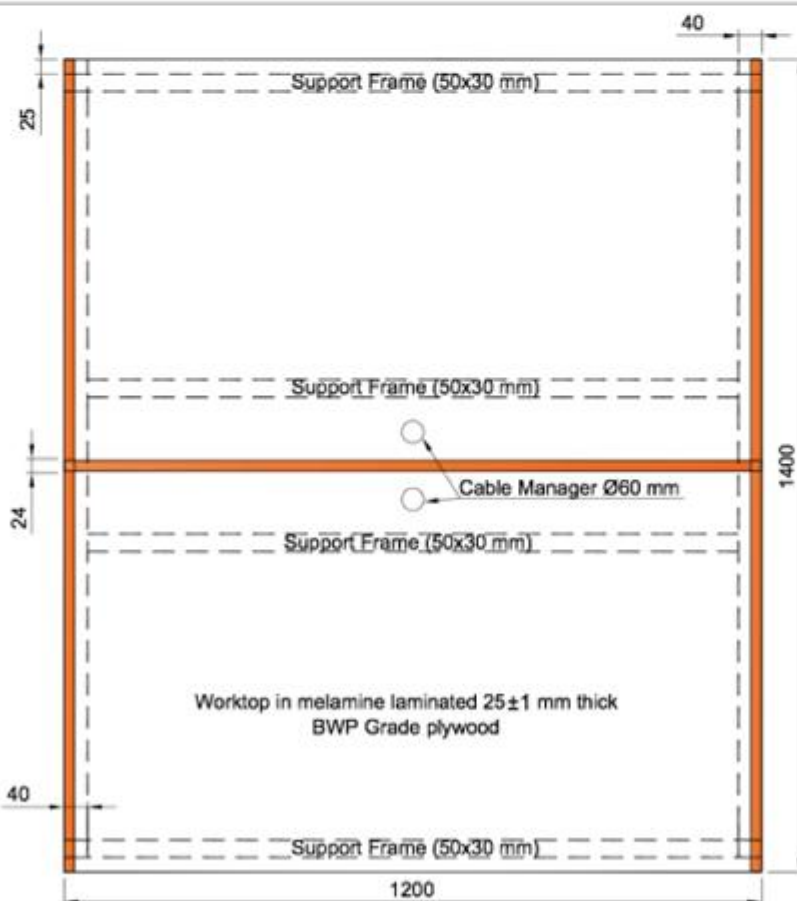
12.6 Drawings





FRONT VIEW

RESEARCH SCHOLAR TABLE - CUBICLE



TOP VIEW

RESEARCH SCHOLAR TABLE - CUBICLE

13. PU SEATED Lab Chair

13.1 Specifications

Sl. No.	Specifications	
1	Seat Height	584-711 mm
2	Seat Width	472 ± 2 mm 434 ± 2 mm 39 ± 1 mm waterfall front, shaped rear edge and 2mm ventilating ribs 421 ± 2 mm 319 ± 2 mm 2mm ventilating ribs
3	Seat Depth	
4	Seat thickness	
5	Seat design	
6	Backrest width	
7	Backrest height	
8	Additional requirement for backrest	
9	Colour	Black
10	Seat and backrest quality	Puncture, stain and moisture resistant
11	Frame material	steel
12	Seat and back rest material	Molded self-skinning high density polyurethane foam
13	Back support	Comfortable lumbar support with 2mm ventilating ribs.
14	Adjustment /Control	Independent seat and back tilt adjustment. Pneumatic seat-height adjustment.
15	Base	5-star chrome steel base
16	Foot ring	Yes, on steal frame.
17	Weight capacity	120 kg

18	Gauge of the steel	18 gauge steel
19	Chrome plating	Chrome finish on metal parts
20	Wheel casters	Movable on five 360-degree swivel polypropylene casters with non-slip floor glides

13.2 Representative Image



Commercial terms and Conditions Tender No. 201900661301 dated 14.05.2019

1. SPECIAL INSTRUCTIONS TO TENDERERS

- 1.1 The bidder is required to submit quotation in *TWO PART* viz, Technical and commercial bid and price bid separately. The first cover shall contain the technical and commercial details along with the format of price quotation without the price superscribing in the cover *“Technical and Commercial-Tender No. 201900661301, Due on 27.06.2019”*. ***The second cover shall contain the prices superscribing in the cover “price bid- Tender No. 2019006613 Due on 27.06.2019”. All the covers to be sealed and insert in another cover super scribing the “Tender No. 2019006613, Due on 27.06.2019” and submit immediately but not later than the due date mentioned against each tender. If the tender is received after the due date and time, the same shall be summarily rejected.***
- 1.2 The cost of tender **Rs.560/-** shall be submitted *along with Technical & Commercial bid by Demand Draft* drawn in favour of the Sr. Accounts Officer, IIST and payable at State Bank of India, Valiamala Trivandrum-695 547. ***In case the Demand Draft is not enclosed with the quotation, the bid shall be summarily rejected.***
- 1.3 **Payment:** Our normal payment term shall be E-Transfer for imports / within 30 days after supply/installation and acceptance for indigenous respectively.
- 1.4 The installation and commissioning of equipment to be done at our campus, Valiamala, Thiruvananthapuram-695 547. All pre-requisites such as foundation drawing, grouting and any consumables needed for carrying out the installation, if applicable, shall be separately mentioned in the technical bid.
- 1.5 Delivery terms shall be Ex-works/FOB/FCA for imports and FOR, Valiamala for indigenous.
- 1.6 For import cargoes, the purchase order shall be drawn directly to the foreign supplier through agents in India. We have our own freight forwarder and customs clearance at Trivandrum shall be done by us.
- 1.7 All duties and taxes, if applicable shall be quoted separately.
- 1.8 Accreditation documents such as current income tax/sales tax clearance certificate, clientele list with previous experience in the similar lines of supply must be provided with documentary evidence), Performance Certificate, authorization for import, after sales support in India etc. shall be explained in detail with proof.
- 1.9 **Earnest Money Deposit (EMD):-** Interest free EMD to ensure the earnestness of the vendor in the participation of the procurement process to the tune of **Rs. 1,63,973/- (Rupees One Lakh Sixty Three Thousand Nine Hundred and Seventy Three only)** by Demand Draft drawn in favour of the

Sr. Accounts Officer, IIST, Valiamala, Trivandrum may be enclosed with Technical & Commercial bid sealed cover. The EMD will be refunded to the unsuccessful tenderers within 30 days after placement of Purchase Order. **EMD will be forfeited in case the vendor withdrawn from the quotation. The tender not accompanied with EMD shall be treated as invalid tender and summarily rejected. For direct offers from NSIC, MSMEs, etc. EMD is not applicable.**

- 1.10 Security Deposit:-** Interest free Security Deposit @ 10% of the value of Purchase Order shall be payable by successful vendor for satisfactory execution of the Purchase Order.
- 1.11 Performance Bank Guarantee:** 10% of order value shall be submitted by the Vendor for Warranty obligation (12+2 Months).
- 1.12 Liquidated Damages:** The period of completion indicated shall be the essence of the contract. In the event of delayed date of delivery & Installation, the liquidated damages @ 0.5% per week or part thereof subject to a maximum of 10% of the contract value shall be recovered.
- 1.13 Force Majeure:** During the continuance of the contract, should a part or whole of the items covered by this contract be delayed in delivery due to reasons of force majeure condition which shall include lockouts, strikes, riots, civil commotions, fire, flood, windstorm, explosion, labour disturbance, act of any Govt. or any agency, judicial action, sabotage act of civil disobedience, act of public enemy, technical failure, accidents, acts of God and war, stoppage of deliveries by Govt. etc, each party undertakes to advise the other as soon as it becomes a way of the circumstance of such force majeure, so that action under the provisions of this contract can be mutually reviewed and agreed upon between contractor and IIST. If the force majeure condition extended over a period of six months, both the parties of the contract shall mutually discussed and arrived at an agreement for the continuation/ termination of the contract forthwith.
- 1.14 Arbitration:** Dispute if any shall be settled mutually, failing which, it will be referred to a one-man arbitrator appointed by Director, IIST in accordance with the Arbitration and Conciliation Act, 1996 and any alteration/modifications thereof, whose decision shall be final and binding on both the parties
- 1.15** IIST reserves the right to either accept/reject any tender/s without assigning any reason/s whatsoever.
- 2. Terms & Conditions of Tender Form No. DOS PM:20, Form No. DOS PM:22 & Form No. DOS PM:23 as per attachment.**

Sd/-
(M.B Subash Chandran)
Deputy Registrar (Grade –I), Purchase
For and on behalf of Director, IIST