



# भारतीय विज्ञान शिक्षा एवं अनुसंधान संस्थान मोहाली

शिक्षा मंत्रालय, भारत सरकार द्वारा स्थापित  
सैक्टर 81, नॉलेज सिटी, प. ओ. मनोली, एस. ए. एस. नगर, मोहाली, पंजाब 140306  
INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH MOHALI  
(Established by Ministry of Education, Govt. of India)

Sector-81, Knowledge city, PO-Manauli, SAS Nagar Mohali-140306, Punjab  
PAN No. - AAAAI1781K GSTIN – 03AAAAI1781K2ZS

• Phone : +91-172- 2240121 • Fax : +91-172-2240124 • <http://www.iisermohali.ac.in> • Email: [stores@iisermohali.ac.in](mailto:stores@iisermohali.ac.in)

CPPP/Institute Website

IISERM (1528)21/22-Pur

Dated: 12<sup>th</sup> January 2022

## **NOTICE INVITING E-TENDER**

Online tenders are invited on behalf of the Director, IISER Mohali in **TWO BID SYSTEM** for the **Supply and Installation of Lab Furniture** as per technical specification and details given below and BOQ list from the original manufacturer/supplier at CPPP i.e. <https://eprocure.gov.in/eprocure/app>. Tender documents may please be downloaded from the E-procurement portal website <https://eprocure.gov.in/eprocure/app> & Institute website [www.iisermohali.ac.in](http://www.iisermohali.ac.in).

-Sd-

Assistant Registrar (P&S)

**NOTE: This is a domestic Tender according to the DPIIT Order dated 15/07/2017 and subsequent amendments to the order for Public Procurement Preference & PROVISION FOR LOCAL SUPPLIERS TOWARDS PREFERENCE TO MAKE IN INDIA. The bidder required to declare on the letter head the percentage of Local content for the quoted instrument and submit with the Technical Bid. Bidder should also give details of the location(s) at which the local value addition is made.**



# भारतीय विज्ञान शिक्षा एवं अनुसंधान संस्थान मोहाली

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## **E-TENDER NOTICE**

Tender Ref.- IISERM(1528)21/22-Pur	Dated : 12 <sup>th</sup> January 2022
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### **Critical Date Sections**

Sr.	Description	Date	Time
1.	Tender Publishing Date and time	12 <sup>th</sup> January 2022	6:00pm
2.	Tender Document download start Date & Time	12 <sup>th</sup> January 2022	6:00pm
3.	Bid Submission start Date & Time	12 <sup>th</sup> January 2022	6:00pm
4.	Bid Submission End date and Time	21 <sup>st</sup> January 2022	Upto 11:00am
5.	Tender opening Date and Time	22 <sup>nd</sup> January 2022	At 11:30am

Online tenders are invited on behalf of the Director, IISER Mohali in **TWO BID SYSTEM** for following item(s) from the original manufacturer/supplier at CPPP i.e. <https://eprocure.gov.in/eprocure/app>. Tender documents may please be downloaded from the E-procurement portal website <https://eprocure.gov.in/eprocure/app> & Institute website [www.iisermohali.ac.in](http://www.iisermohali.ac.in). Tender fee in shape of Demand Draft of Rs 590/- (Non-refundable) should be submitted by bidder in favour of the Registrar, IISER Mohali payable at Mohali or through Online mode in Institute Account (Canara Bank Saving Account Number 4790101001912 and IFSC Code CNRB0004790) However, scanned copy of the Tender fee/UTR copy should be uploaded on website along with technical bid. The hard copy (if tender fee is paid) of the same in original to be sent to the address mentioned below duly superscribing the supply/work name and reference/tender ID on the envelope and same must reach before opening of the bid and if not received before due date the bid will be summarily rejected. **Micro & MSME/NSIC and Firms registered and the firms registered with concerned Ministries/ Departments, the bidders are exempted from payment of Tender Fee as per GOI notifications/GFR (2017) and Ministry of Finance OM No. F.9/4/2020-PPD dated 12 November 2020.**

**Bidders will also be required to execute bond/undertaking Bid Security Declaration Form attached as ANNEXURE-I for availing exemption to submit Tender Fee.**

**The Original Tender Fee should be sent to (if not paid online/NEFT):**

Assistant Registrar (P&S)  
Indian Institute of Science Education and Research Mohali  
Sector-81, Knowledge City, SAS Nagar, Mohali, Punjab,  
India, Pin: 140306

**Non-receipt of original Tender Fee will lead to rejection of tender.**

## **ITEM WISE DETAILS**

<b>S. No.</b>	<b>Description</b>	<b>Qty. (in units)</b>
<b>1.</b>	<b>Wall side work bench of size 1830mm L x 750mm W x 900mm H</b> having granite top and one shutter and drawer, reagent rack, cable trunking, 5/15 switch/socket at every 2' distance and wiring with 6sqmm cable.(WWB2, as per drawing enclosed) – <b>AS PER ANNEXURE III</b>	<b>03</b>
<b>2.</b>	<b>Wall side work bench of size 1500mm L x 750mm W x 900mm H</b> having granite top and one shutter and drawer .(WWB2A, as per drawing enclosed) – <b>AS PER ANNEXURE III</b>	<b>01</b>
<b>3.</b>	<b>Wall side work bench of size 1220mm L x 750mm W x 900mm H</b> having granite top and one shutter and drawer, reagent rack, cable trunking, 5/15 switch/socket at every 2' distance and wiring with 6sqmm cable. .(WWB3, as per drawing enclosed) – <b>AS PER ANNEXURE III</b>	<b>01</b>
<b>4.</b>	<b>Island work bench of size 1830mm L x 1500mm W x 900mm H</b> , having granite top and one shutter and drawer, reagent rack, cable trunking, 5/15 switch/socket at every 2' distance and wiring with 6sqmm cable.(IWB2)(as per drawing enclosed) – <b>AS PER ANNEXURE III</b>	<b>01</b>
<b>5.</b>	<b>Sitting table of size 1500mm L x 600mm W x 750mm H</b> with one lockable drawer 75mm height, having white cedar bawarian birch laminated post formed top with hardwood lipping.(STT2)(as per drawing enclosed ) – <b>AS PER ANNEXURE III</b>	<b>05</b>
<b>6.</b>	<b>Sitting table of size 900mm L x 750mm W x 750mm H</b> with one lockable drawer 75mm height, having white cedar bawarian birch laminated post formed top with hardwood lipping.(STT1)(as per drawing enclosed) – <b>AS PER ANNEXURE III</b>	<b>01</b>
<b>7.</b>	<b>Visitor chair</b> seat should be made of cushion15 mm thick hot pressed PU moulding. Upholstery with high quality fabric. Back provided with black nylon netting so as to provide comfort to the person's back. Provided with arms. Frame should be made from 25 dia CRC A pipe and should be powder coated thickness 50-60 micron.	<b>09</b>
<b>8.</b>	<b>Supplying and placing Bar Stool.</b> The seat shall be made of 15mm thick hot pressed commercial plywood upholstered with high resilience polyurethane foam 30mm thick having density 32kg/m <sup>3</sup> with leatherite tapestry 0.8mm thick and 535 GSM and the back shall be made of metal insert pipe upholstered with high resilience polyurethane foam 25mm thick having density 32kg/m <sup>3</sup> with leatherite tapestry 0.8mm thick and 535 GSM. The chair shall have 3600 revolving mechanism. The pneumatic seat height adjustment for healthy seating, user can adjust seat height upto 150mm with BIFMA standard class-3 gas-lift to suit them using the lever under the seat. Footrest shall be provided of MS chrome plated round pipe of Dia 15.8mm. The Pedestal should have five legged injection moulded in 30% glass filled black nylon having pitch circle Dia. 650 mm fitted with 5 nos. gliders which shall be made of injection moulded in black nylon 30% glass filled. The seat shall be 440±10 mm(D) X 455±10 mm(W) and back size shall be 535±10 mm(W) X 260±10 mm(H) from seat. Overall height shall be = 875±10 mm.	<b>04</b>
<b>9.</b>	<b>ALMIRAH GLASS DOOR</b> SIZE: Height 1970mms, Width 915mms, Depth 485mms supply of Steel	<b>03</b>

	Almirah big size manufactured from CRCA sheet conforming to IS: 513-1994 grade 'D' material. The CRCA sheet of uniform thickness of 22 gauge for the body and shelves, 20 gauge for doors frame duly cut and bend with the help CNC machines The doors should be provided with 4mm thick toughened glass having high quality rubber beading on all four sides and further holding with sheet metal strips. Welding on the front frame of the doors should not be acceptable. The front twin door frame should be in single sheet with built in up and down cut outs of size 790mm x 290 mm for fitment of toughened glass. The doors are provided with 3 way bolting system. The top and bottom end of the locking rod should be horizontally hook type and to be inserted into the horizontal slot and 3-waylock should be operated by single key. The almirah shall be equipped with four adjustable shelves manufactured from 22 gauge CRCA sheet, thereby making five compartments in the almirah. The steel shelf shall be capable of carrying a uniformly distributed load of 80	
10.	<b>Fume hood with underneath cupboards</b> should also connected to the ventilation (ducted) through fume hood exhaust. Must be supplied with 8mm wire capable of handling 8 KVA load with 15 amp plug point of size 1200 mm (as per specifications enclosed) – <b>AS PER ANNEXURE III</b>	01
11.	<b>FRP ducting 200 mm dia</b> (payment shall be made on actual quantum of duct installed at the site)	60 rmt
12.	<b>Wall side sink unit of size 600x750x900mm</b> made up of MS powder coated sheet with granite top (WSU, as per drawing enclosed) – <b>AS PER ANNEXURE III</b>	01
13.	<b>Rack storage cabinet</b> of made up of rust free stainless steel having size 6'x2'x5' as per drawing enclosed – <b>AS PER ANNEXURE III</b>	02
<b><u>NOTE/ TERMS:</u></b>  <b>1. The bidder must have supplied, directly lab furniture including fume-hood in Govt/Semi Govt./Autonomous bodies/Central PSU/State Govt of value at least Rs.5.00 lakh. (bidder not having experience of manufacturing/ supplying fume hoods will be rejected.) Competition certificate alongwith detail PO to be uploaded and provided.</b>  <b>2. Warranty: One Year</b>		

**A) IMPORTANT NOTES:-**

- I. **This is a domestic Tender according to the DPIIT Order dated 15/07/2017 and subsequent amendements to the order for Public Procurement Preference & PROVISION FOR LOCAL SUPPLIERS TOWARDS PREFERENCE TO MAKE IN INDIA. Bidders should also give details of Localtions(s) ;at which the local value addition is made. Bidders are requested to furnish the declaration regarding local content/locations in Annexure II through CPPP portal.**
- II. **Restriction under Rule 144 (xi) of the General Financial Rules (GFRs). 2017 under sub clause 3, in terms of DOE, MoF No. F.18/37/2020-PPD dated: 8<sup>th</sup> February, 2021:**
  - (i) A bidder is permitted to procure raw material, components, sub-assemblies etc. from the vendors from countries which shares a land border with India. Such vendors will not be

required to be registered with the Competent Authority, as it is not regarded as "sub-contracting".

- (ii) However, in case a bidder has proposed to supply finished goods procured directly/indirectly from the vendors from the countries sharing land border with India, such vendor will be required to be registered with the Competent Authority.

- III. **The online updated Price BOO is in INR format. Bids are invited in INR only against domestic tender.**
- IV. **The Online bids should be submitted directly by the original manufacturer/supplier. If quotation is submitted/filled by any representative/agent/dealer then they must upload a authority certificate from the principal company.**
- V. **All MSME/NSIC/Startup Units shall be considered as per provisions/rules prescribed by Govt of India.**
- VI. **Auto-extension of last date for E-Tenders has been activated by CPP Portal which has participation 2 bids or less.**

#### **B) SUBMISSION OF TENDER**

- I. All bid/ tender documents are to be uploaded online at Central Public Procurement portal i.e. <https://eprocure.gov.in/eprocure/app> only and in the designated cover/ part on the website against tender ID. Tenders/ bids shall be accepted only through online mode and no manual submission of the same shall be entertained except tender fee and Annexure I (Bid Securing Declaration Form). Late tenders will not be accepted.
- II. The online bids shall be opened at the office of the Assistant Registrar (P&S), IISER Mohali, on above given date and time. If the tender opening date happens to be on a holiday or non-working day due to any other valid reason, the tender opening process will be attended on the next working day at same time and place. IISER Mohali will not be responsible for any error like missing of schedule data while downloading by the Bidder.
- III. The bidder shall upload the tender documents duly filled in and stamped by the authorized signatory on each and every page. Tender not submitted/uploaded in the prescribed form and as per the tender terms and conditions shall be liable for rejection.
- IV. The bidder shall upload scanned copy of the PAN Card, GST number duly signed and stamped. **Also bidders applying against ‘MSME/NSIC Certificate’ issued by appropriate Authority, should ensure that the certificate attached is relevant to the area of service/supply. For example, If the tender is for “supply & installation of Desktop” the certificate should be issued for activity/area of “Computer supply and services activities etc” otherwise bid will be REJECTED without notice.**
- V. E-procurement system ensures locking on the scheduled date and time. The system will not accept any bid after the scheduled date and time of submission of bid.

#### **C) INSTRUCTIONS**

1. The Online bids should be submitted directly by the original manufacturer/supplier, If quotation is submitted/filled by any representative/agent/dealer then they must upload a authority certificate from the principal company for quoting the price otherwise such quotation will be rejected.
2. The quantity mentioned in this inquiry is and shall be deemed to be only approximate and will not in any manner be binding on the Institute. Before the deadline for submission of the online bid, IISER Mohali reserves the right to modify the tender document terms and conditions. Such amendment/modification will be notified on website against said tender ID.

3. The rates offered should be FOR Chandigarh/Mohali in case of firms situated outside Chandigarh/Mohali, and free delivery at the Institute premises in case of local firms. Conditional tenders will be summarily rejected.
4. In case of Ex-godown terms the amount of packaging forwarding freight etc. should clearly be indicated by percentage or lump sum amount. Institute has policy not to make any advance payments towards any purchase, Letter of credit can be opened if required.
5. THE INSTITUTE IS EXEMPTED FROM CUSTOM DUTY under notification no-TU/V/RG-CDE(1062)/2016 CUSTOM DT. 12.10.2018.
6. Tax: This Institute is not exempted from the payment of GST. The current rate (i.e. percentage of GST should be clearly indicated included or excluded) wherever chargeable. Please also provide/upload the copy of PAN card, GST number duly self-attested.
7. Concessional GST is applicable for all the items purchased for Research labs vide Ministry of Finance, notification no. 45/22017 dated 14.11.2017 and 47/2017 dated 14.11.2017.
8. Bidder/s quoting in currency other than **Indian Rupee (INR)** should explicitly mention the currency in which tender quoted wherever applicable in Technical Bid along the tender documents.
9. The delivery period should be specifically stated. Earlier delivery will be preferred.
10. **The firms are requested to provide/upload detailed description and specifications together with the detailed drawings, printed leaflets & literature of the article quoted** and also should enclose Technical Compliance Sheet. The name of the manufactures and country of manufacture should also invariably be stated. In the absence of these particulars and documents, the quotation is liable for rejection. Tenders not accompanied by detailed information as required, are liable to be rejected.
11. If any information furnished by the bidder is, at any stage found to be incorrect, false or fabricated, the Institute/purchaser shall have the absolute right to forfeit E.M.D. and security deposits, in addition to cancellation of contract, forfeiting the warranty/performance Guarantees and other action in accordance with law, such as black-listing, risk & cost etc.
12. Validity of offer: 90 days.
13. The warranty period after satisfactory installation should be mentioned and firm should replace all manufacturing defect parts/ whole item under warranty without any extra cost including clearance, freight, taxes. Security deposit/Performance Bank Guarantee @ 3% of the value of supply order, in terms of *Ministry of Finance, DoE, GOI, OM. No. F.9/42020-PPD dated 12-11-2020 and extension of vide circular no. F.9/4/2020-PPD dated: 30<sup>th</sup> December 2021* as per norms may be sought from the firms.
14. The right to reject all or any of the quotation and to split up the requirements for itemized L-1 or relax any or all the above conditions without assigning any reason is reserved by the IISER Mohali. For any corrigendum and addendum please be checked the website <https://eprocure.gov.in/eprocure/app> and <http://www.iisermohali.ac.in>
15. Disputes, if any, shall be subject to jurisdiction in the court of Mohali only.

–Sd–  
Assistant Registrar (P&S)

## **ANNEXURE-I**

### **Bid Securing Declaration Form**

Date: \_\_\_\_\_ E-Tender No. \_\_\_\_\_ E-Tender ID \_\_\_\_\_

To (insert complete name and address of the purchaser)

I/We. The undersigned, declare that:

I/We understand that, according to your conditions, bids must be supported by a Bid Securing Declaration.

I/We accept that I/We may be disqualified from bidding for any contract with you for a period of one year from the date of notification if I am /We are in a breach of any obligation under the bid conditions, because I/We

a) have withdrawn/modified/amended, impairs or derogates from the tender, my/our Bid during the period of bid validity specified in the form of Bid; or

b) having been notified of the acceptance of our Bid by the purchaser during the period of bid validity (i) fail or reuse to execute the contract, if required, or (ii) fail or refuse to furnish the Performance Security, in accordance with the Instructions to Bidders. I/We understand this Bid Securing Declaration shall cease to be valid if I am/we are not the successful Bidder, upon the earlier of (i) the receipt of your notification of the name of the successful Bidder; or (ii) thirty days after the expiration of the validity of my/our Bid.

Signed: (insert signature of person whose name and capacity are shown)  
in the capacity of (insert legal capacity of person signing the Bid Securing Declaration)

Name: (insert complete name of person signing the Bid Securing Declaration)  
Duly authorized to sign the bid for an on behalf of (insert complete name of Bidder)

Dated on \_\_\_\_\_ day of \_\_\_\_\_ (insert date of signing)  
Corporate Seal (where appropriate)

(Note: In case of a Joint Venture, the Bid Securing Declaration must be in the name of all partners to the Joint Venture that submits the bid)

*PS: Furnish the above in original stationary/letter head with signed and sealed.*

## **ANNEXURE-II**

### **SELF DECLARATION**

[For Local Content of Products, Services or Works]

To,

The Director

Indian Institute of Science Education and Research  
(Established by Ministry of Education, Govt. of India)

Sector-81, Knowledge city, PO-Manauli,

SAS Nagar Mohali-140306, Punjab

1. With reference to Order no P.-45021/2/2017 PP (BE-II) dated 04.06.2020 and No. P-45021/2/2017-PP(BE-II) dated 16-09-2020 of DPIIT, Ministry of Commerce and Industry, Govt. of India, we fall under the following category of supplier (please tick the correct category) for the items for which this tender has been floated and being bided.

- ☐ Class I local supplier – has local content equal to more than 50%. Local contents added at \_\_\_\_\_ (name of location).
- ☐ Class II local supplier – has local content more than 20% but less than 50%. Local contents added at \_\_\_\_\_ (name of location).
- ☐ Non-local supplier – has local content less than or equal to 20%. Local contents added at \_\_\_\_\_ (name of location).

2. We are solely responsible for the abovementioned declaration in respect of category of supplier. False declarations will be in breach of the Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which we may can be debarred for up to 2 years as per Rule 151(iii) of the General Financial Rules along with such other actions as may be permissible under law.

Signature & seal of the company

Name and address of the organization

.....  
.....  
.....

**Note:** In cases of procurement for a value in excess of Rs. 10 crores, the 'Class-I local supplier' / 'Class-II local supplier' shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.



## **ANNEXURE-III**

### **2.0 FUME HOODS**

#### **2.1 Standard Fume Hood Performance Requirements**

- Fume hoods shall be of complete KD (Knock down) construction with airfoil design to insure maximum operating efficiency. Foil sections at the front facials of the hood shall minimize eddying of air currents at the hood face and the rear baffle system shall minimize turbulence in the upper portion of the hood interior.
- ✓ Test Method – The hood shall be tested by a third party as per the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) Standard 110-1995 and EN-14175.

#### **2.2 Quality Assurance**

- The laboratory fume hood manufacturer shall provide fume hood work tops and casework all **manufactured & shipped with** proper packing & should take the full responsibility of the entire scope of works as specified in the tender.
- **Each fume hood should come Pre Wired along with PDI (Pre Dispatch Inspection Report)**

#### **2.3 Specifications**

- **Superstructure Frame** – A free-standing rigid panel structure of steel (G.I.)
- **Interior Walls**- Double wall ends, not more than 6" wide, shall be provided to maximize interior working area. The area between the double wall ends shall be closed to house the remote control valves. Cutouts to be provided inside the fume hood for service line accessibility. The same to have a cover with a fastener free design. The vertical facias shall contain the required service controls, electrical switches and receptacles.
- **Airfoil** – A streamlined airfoil shall be integral at the bottom of the hood opening on bench and distillation hoods. This foil shall provide a nominal 20mm open space between the foil and the top front edge of the work surface to direct an air stream across the work surface to prevent back flow of air. The sash to be provided with a separate handle which also provides for air flow when in completely closed position. The foil shall be 1.2mm steel to resist denting and flexing.
- **Baffle**- A stable, non-adjustable baffle with a single slot on the back baffle to aid in distributing the flow of air into and through the hood. The baffle shall be spaced out from the back liner and shall be removable for cleaning.
- **Duct Collar**- A 8"-10" diameter polyethylene funnel shaped rectangular duct collar shall be located in the top of the hood plenum chamber.
- **Lighting**- Two fluorescent light fixture (inclusive of CFL tubes) of 20 volts each to be provided in the fume hood. The lighting fixture to be completely outside the fume hood area.
- **Sash**- A sash provided should be move in a vertical rising steel frame without any noise. The bottom of the sash frame shall have a full length metal handle. The ash

track has minimum protrusion to avoid any kind of turbulence. The sash shall be counterbalanced with weights to prevent tilting and binding during operation. The glass panels shall be 5mm toughened glass mounted in an leveled channel with roller for smooth operation.

- **Plumbing Services** – Utility services like Nitrogen, Vacuum, Compressed Air & Potable water shall consist of remote control valves as selected located within the end panels, controlled by in and out facility with flexible hose passing through the side panels of the hood, with color coded plastic handles. Interior fitting for water shall be with powder coated brass. All gas valves for regular lab gases to have standard needle valve and push and turn type arrangement for all burning gases to be supplied. All supplied valves to clear the following pressures test conditions: Gas Fittings- 7 bar, Water fittings-10 bar.
- **Electrical Services** – The hood superstructure shall be fully wired and should have a control box with MCB blower starter all safety devices like trip etc. Inlet to be of 3 phase power supply and the whole electrical to be of plug and play type. It also has 4 nos. electrical sockets and switches of Northwest make (230 V, 5/16 A, 50 Hz). Connection has to be made from fume hood to the scrubber blower with atleast 3 phase 4 sqmm cable (approximate length 40 mtr per fume hood all in scope of contractor/agency)
- **Liner-** Interior liner panels shall be 6 mm thick Phenol resin base industrial laminate.
- **Digital Panel-** Fume hoods shall be provided with an alarm system to detect low and high hood face velocities. The alarm system shall indicate the actual face velocity of sash position. The system has an air velocity sensor mounted on the interior side liner of the hood where it is easily accessible for cleaning. The velocity monitor shall have a digital display of the air velocity through the hood face in feet per minute. The alarm signals shall activate any time the face velocity falls below the low velocity alarm set point or rises above the high velocity alarm set point. There shall be both visual and audible alarm signals. The audible alarm shall have a mute. Low and high alarm contacts shall be provided for remote monitoring.
- **Lattice Rod Assemblies** – 12mm diameter solid SS rods shall be completed with the PP clamps to form a lattice arrangement to hold the test samples and rotors within the fume hood.
- **Centrifugal Blower-** Silent high efficiency remote blower consisting of continuous rating motor and chemical resistant impeller. The blower is designed to give a face velocity at safe working height as per the international safe velocity norms. (ANSI/AIHA Z9.5). The blower body is polypropylene UV treated, high density and chemical (corrosion) resistant and is mounted on a metallic stand
- **Ducting** – Rigid Ducting 200 mm of PP ( Polypropylene ) + FRP ( Fibre Reinforced Polyester ) and flexible ducting with flanges, bends, damper transitions, clamps etc all complete. Flexible joint is provided in the ducting in order to avoid transmitting the blower vibrations to the hood. A weather proof rain cowl has to be provided at the outlet of blower.

• **SCRUBBERS SPECIFICATIONS:**

**General Details**

	Separate 1 no. for each LCV fume hoods of 6 feet width
Capacity	1000 CFM for one 6 feet width
	LCV fume hoods
Working temp.	Ambient
Design temp.	60 degree celcius
Type	Vertical Packed Bed scrubber with circulation tank and recirculation pipes and fittings.
Motor(MAKE-KIRLOSKAR/ SIEMENS	3.0 HP, 1450 RPM, CI body, Impeller PP coated
Pump(MAKE-KIRLOSKAR/ AMBICA/ KRANTI	0.50 HP, 2900 RPM Capacity 50 ltr/min, Head 5 mtrs
Bottom/room/ shell	PP + FRP
Manway necks/Reinf. Pads	PP + FRP
Manway flanges	PP + FRP
Nozzle necks	PP + FRP
Nozzle flanges	PP + FRP
Gasket	Natural resin – 3mm
Bolts and nuts	GI
Tank	3 mm PP + 5 mm FRP
Scrubber	3 mm PP + 3 mm FRP
Outside of tank	Smoke grey
Inside of tank	NIL

### **\*Other**

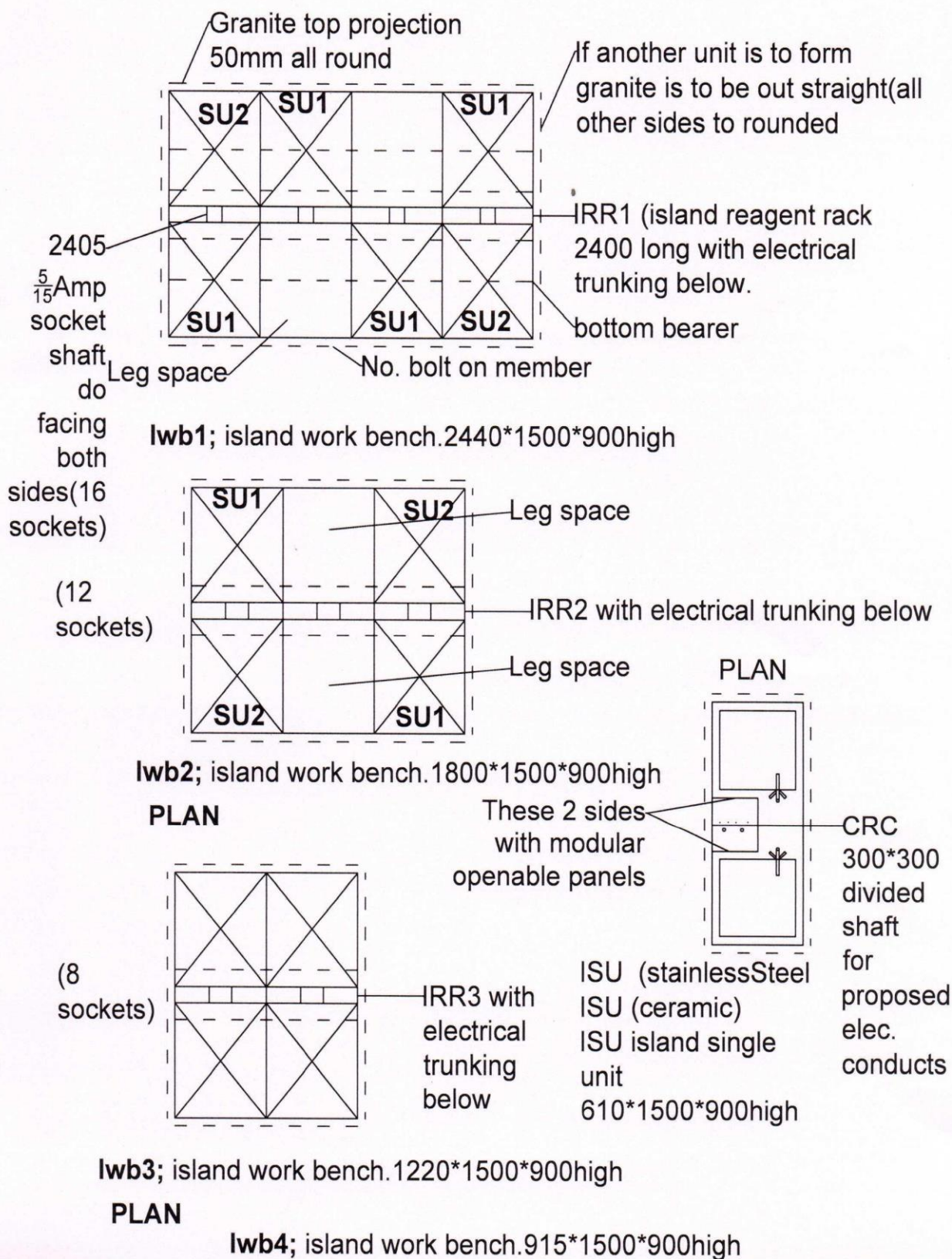
Accessories like overflow provision and water level indicator.

Less space occupation, maximum efficiency and maximum recollection. All nozzles shall be provided with FRP gussets.

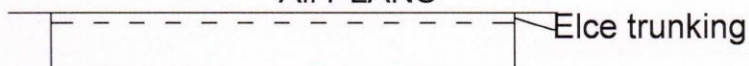
Water fill shall be done to take care of leakage. Floor space requirement of 2 m X 2m.

Water fill test shall be done to take care of leakage

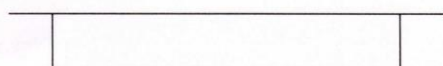
- **Base Cabinets** – Fume hoods are designed to rest on a bench (high base stand, pedestal or a cabinet) which is a complete rigid steel structure. Gauge of steel used in its construction shall be 0.8 mm GI.
- **Transition-** Used to connect fume hood with ducting should be designed to reduce the static pressure and is made up of PP-FRP.
- **Work Surface** – Hood work surface shall be 20mm thick jet black granite made in the form of a watertight pan, not less than 7 mm deep to contain spillage. Worktop will have oval 100mm x 200mm 'PP' Cup-Sink for drainage. The work surface and cup drain shall be available in black colour



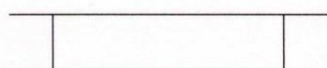
### All PLANS



**WRR1** wall reagent rack 8'1'2'3''\*high

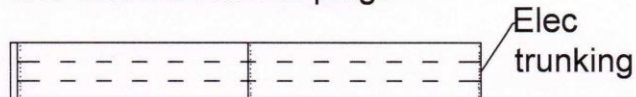


**WRR2** wall reagent rack 6'1'2'3''\*high



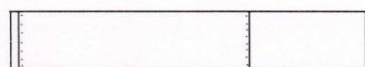
**WRR3** wall reagent rack 4'1'2'3''\*high

Note; All racks formly fixed to wall  
by chemical resistant (85) screw  
and suitable normal plugs

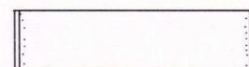


**IRR1** Island reagent rack 8'1'2'3''\*high

Note; All reagent racks to be attached  
to bench tops without toppling  
possibility



**IRR2** Island reagent rack 6'1'2'3''\*high



**IRR3** Island reagent rack 4'1'2'3''\*high

**IRR4**

Note; All reagent racks are to be of  
cnc sheets of adequate strength

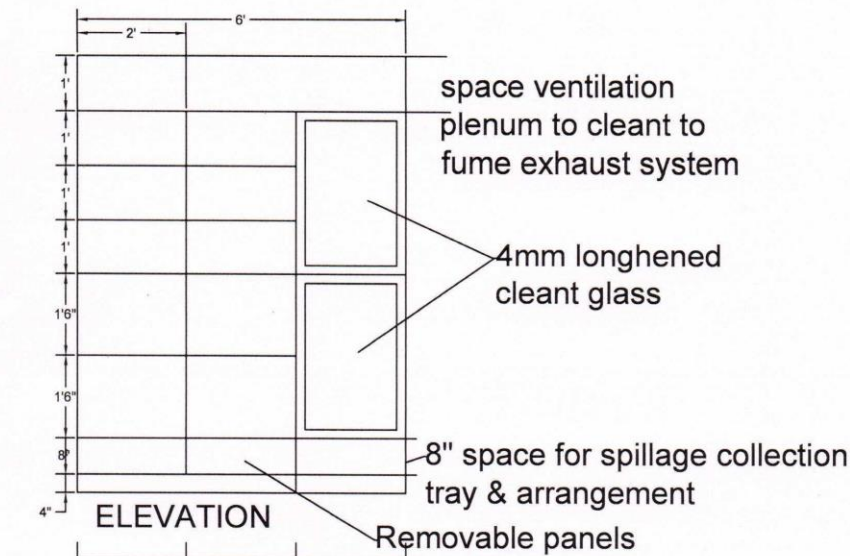
- For all these built on shaft at 4'9" height with electrical trunking below.
- Every 2' space 2ms  $\frac{5}{15}$  Amp sockets.
- Top of rack at 7' wt and intermediate shaft at 1'6" ht.

### ELECTRICAL

- For all these bolt on shaft at 1'6" above waste top with electrical end trunking below.
- Every 2' space 2ms  $\frac{5}{15}$  Amp sockets, facing both sides.

Top of rack at  
5'6" height  
& intermediate  
shaft at 4'6" ht

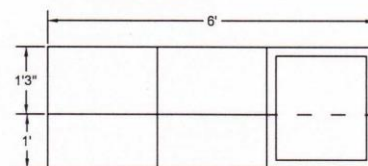
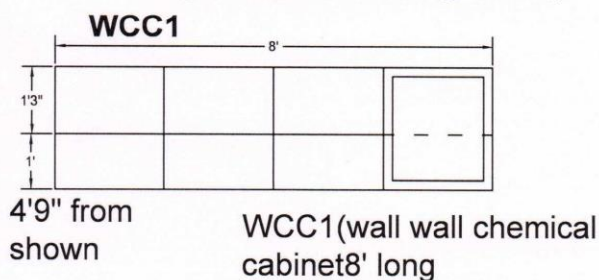




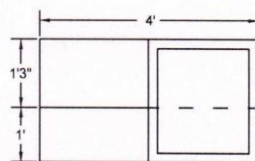
- All the 3 shutter and 3 bottom shutter shaft the individually lockable brushed stainless pull handles to be provided
- leveling bolts/brushes to provided at the bottom

**VCC:** Ventilation chemical copboard (vcc)2'6" deep

(To be constructed out of crc sheets with each shelf beaing with adequate stiffenets to take the loading (1 shelves 10 kgs;1'6"shelves;20kgs each)



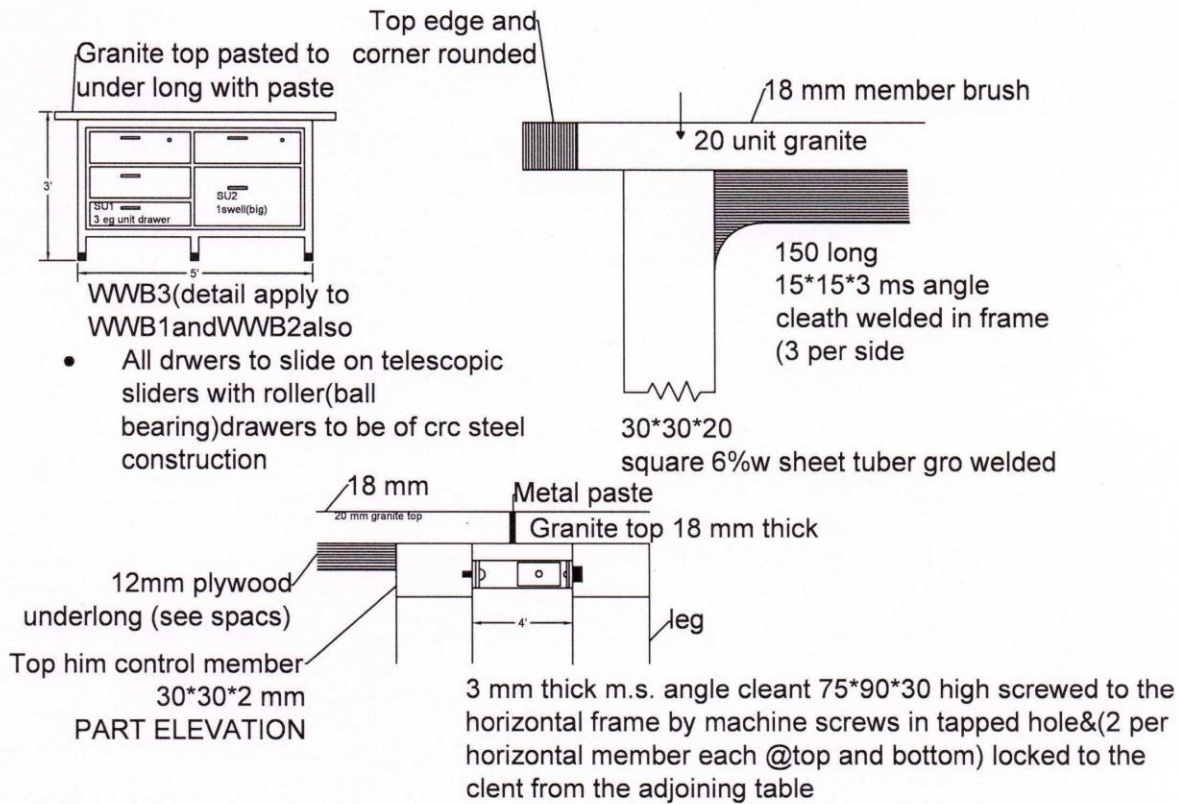
WCC2;6' long



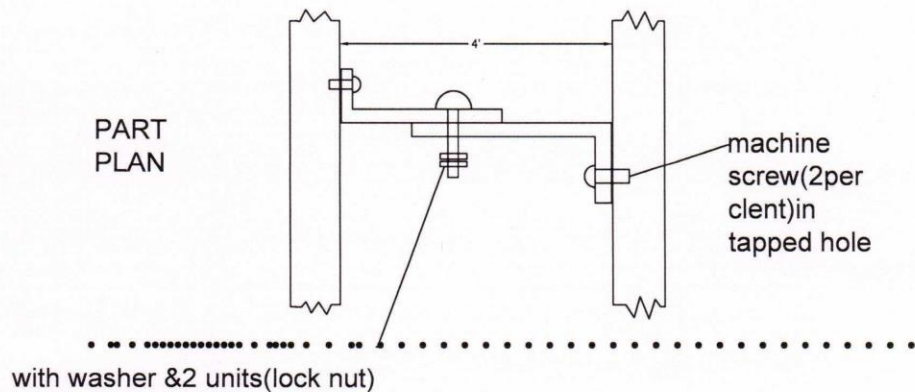
WCC3; 4' long

- Only one shutter shown for clerity in each cabinet
- All cabinets 1'3" deep
- Electrical trunking tube provided below all cabinets

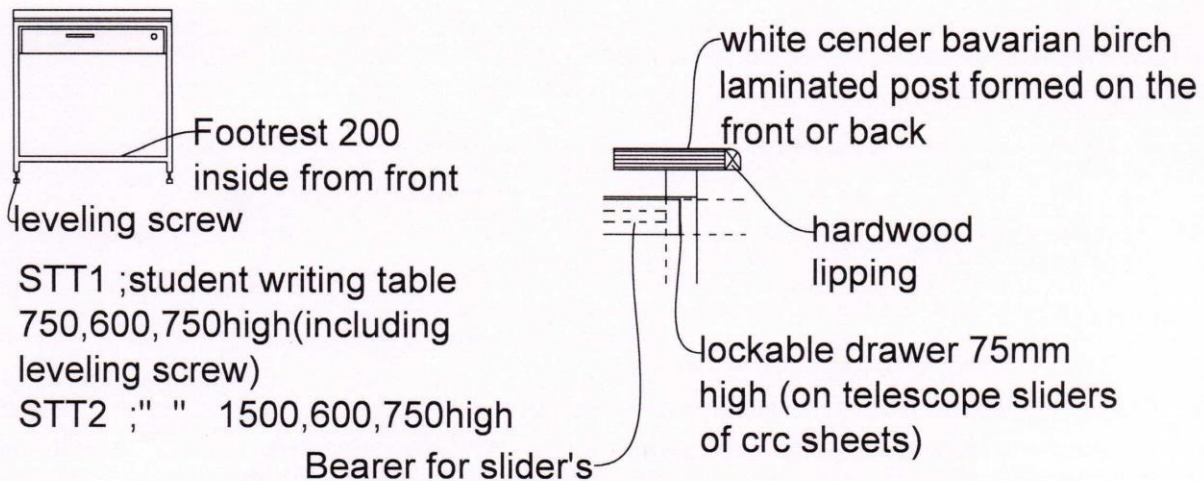
2ms 15/5 amp out lets every 2'



T Tpical detail for connecting work benches (after installation)







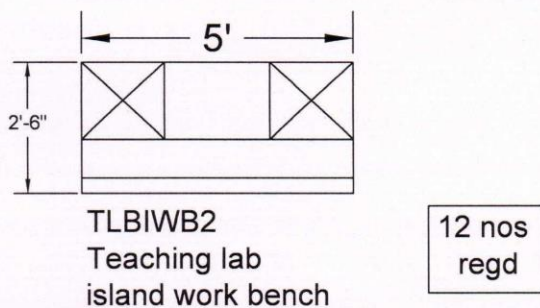
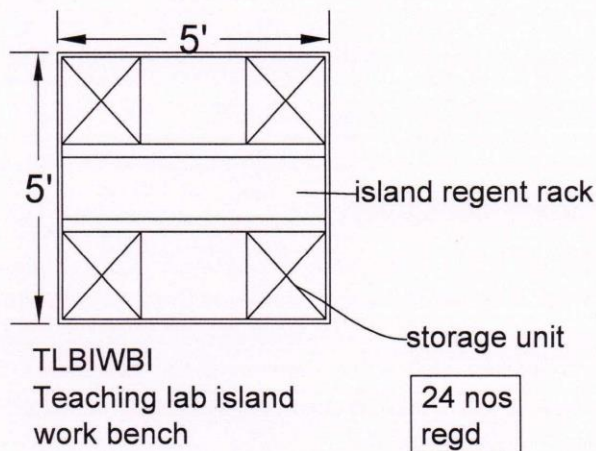
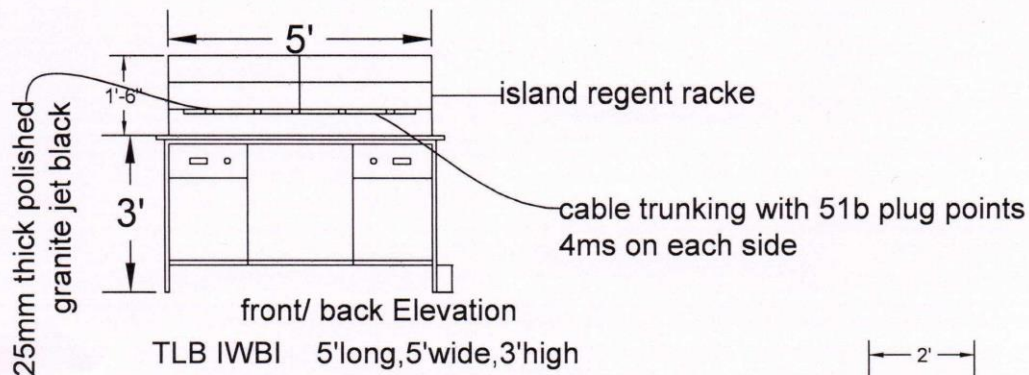
STT1 ; student writing table  
750,600,750high(including  
leveling screw)  
STT2 ; " " 1500,600,750high

List of additional types tables with some changes based on  
wwb (wall work beanch)on sheats 1 and 2;

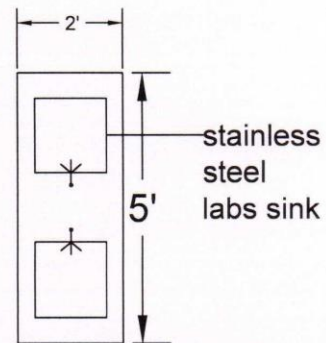
WWB1W; wall work beanch 8',2'wide,3'high with

WWB2W; " " 6',2'wide,3'high  
WWB3W; " " 4',2'wide,3'high  
SSP2 ; special table 6' ,4'wide,2'6"high with white top  
SPT3 ; " " 4',4'wide 2'6" high. SPT3  
STT1 ; students'writing table 2'6"long, 2'6"wide and  
2'6"high with laminate top(see detail SST1alone)  
and 1drawer 3" high 2'6"(n)  
SST2 ; " " 5'long,2'wide,2'6"high with 2  
drawers 2'6" wide(n)3" high STT2

BSU ;big sink unit  
ISU ;islant utility shaft



All construction detail similar to research lab tables



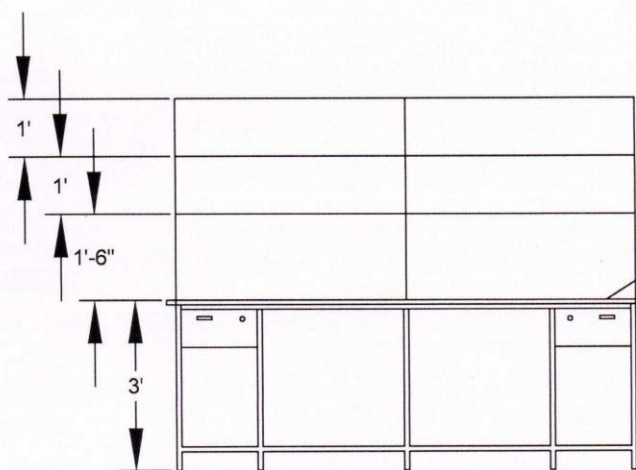
TLB ISUI  
Teaching lab biology island sink unit

18 nos  
Regd

cable trunking  
204'

TEACHING LAB  
BIOLOGY

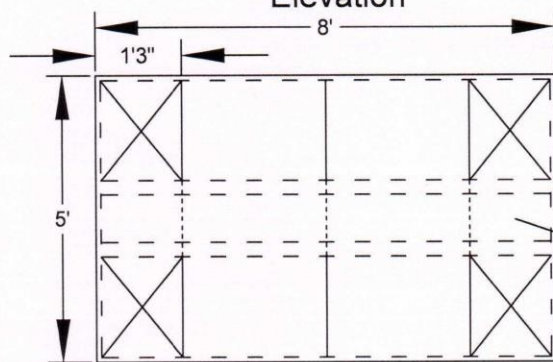




polished let  
black granite  
25mm thick

CABLE TRUNKING  
204'

front/Back  
Elevation



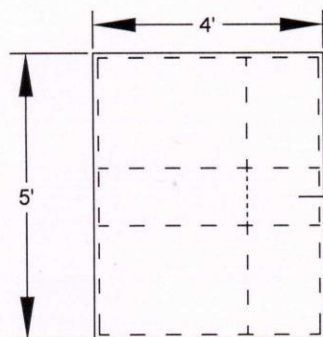
cable teaching  
lab chemistry  
will have 12  
fumehoods  
4'wide,3'deep,8'high

TLFH

Island  
reagent  
rack  
1'  
wide

plan

Teaching Lab Chemistry  
Island Work Bench



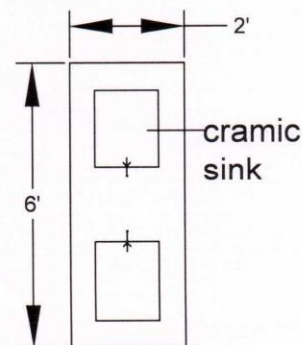
island reagent  
rack with cable  
trunking below

18 nos  
reqd

TLC IWB2

construction details similar  
to research lado cables

teaching chemistry curve lab

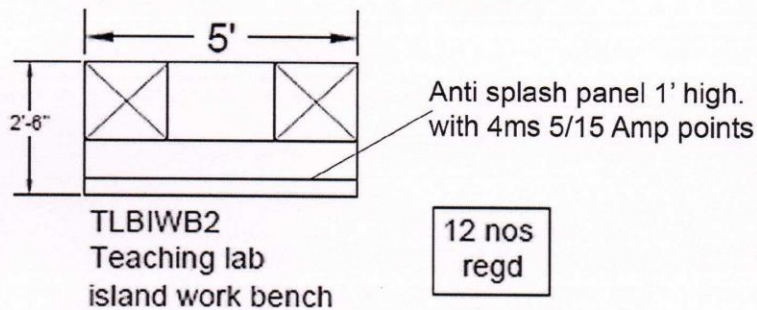
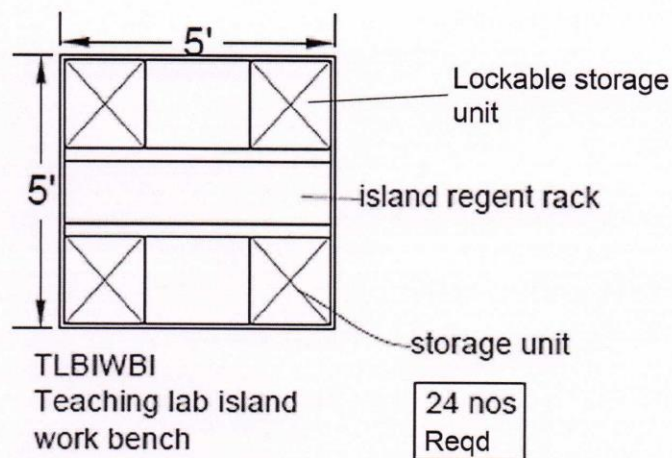
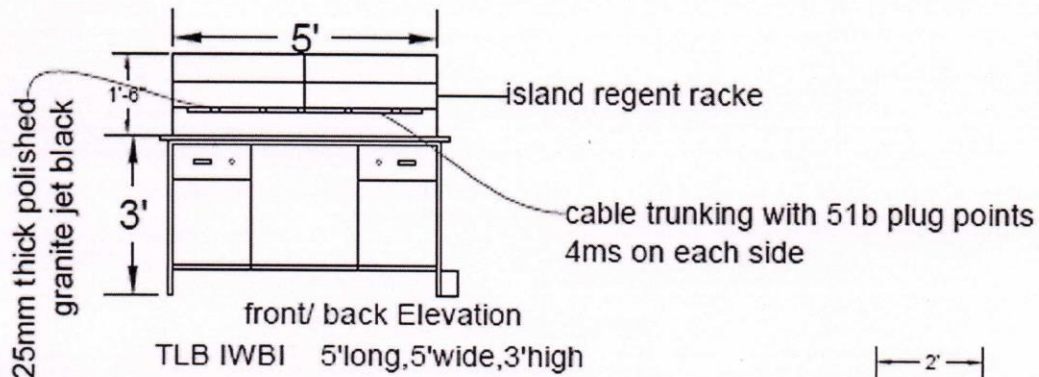


ceramic  
sink

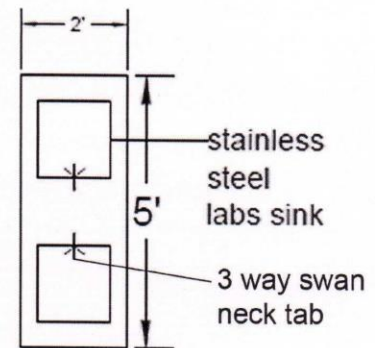
TLC ISU

12 nos  
regd

TEACHING  
LAB  
CHEMISTRY



All construction detail similar to research lab tables



TLB ISUI

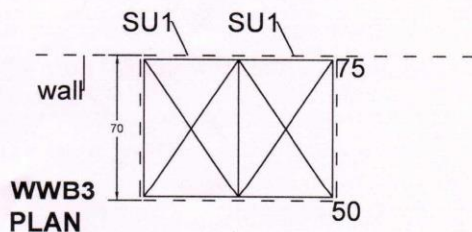
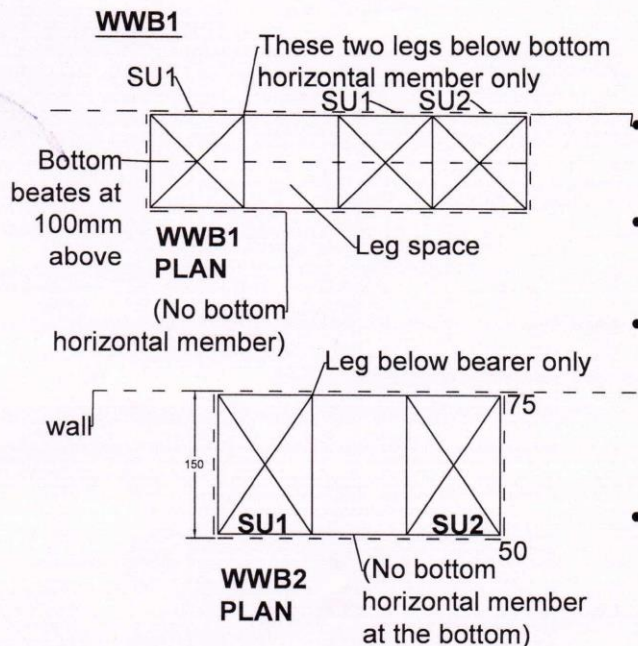
Teaching lab biology island sink unit

18 nos  
Reqd

cable trunking  
204'

TEACHING LAB  
BIOLOGY





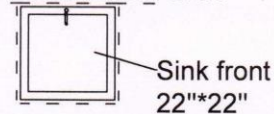
- All work benches 900 and 750mm deep (all work top sides)
- WWB1; wall work bench 2440(8') long.
- WWB2; wall work bench 1830(6') long.
- WWB2 1500 long.
- WWB3; wall work bench 1220 long.
- WSU; sink unit against wall 610 long.

WWB2N; wall work bench  
 6'3" high \* 2' wide  
 • WWB2WD; " "  
 6'3" high \* 3' wide  
 • WWB3WD; " "  
 4'3" high \* 3' wide

- Granite top projection 75mm at the back (No rounding) with 100 high splashrack of same material
- Other 3 sides projected to be 50mm top edge  $\frac{1}{4}$  rounded and polished
- Note; where 2 unit are formed that side not to be rounded but straight cut and polished

- All storage units should name group rocking system (or all drawers in one vertical now should have one key)

#### WALL SINK UNIT



WSU(ss); Stainless Steel Sink  
 WSU(c); Ceramic Sink  
 (600 wide, 900 deep, 900 high)

- Expect where mentioned otherwise all tops will be 1st quality plain jet black ceramic polished and rounded/straight cut as below
- see sheet 3 below