### INSTITUTE FOR PLASMA RESEARCH

An Aided institute of department of Atomic Energy, Govt. of India) Near Indira Bridge, Bhat. DIST.GANDHINAGAR - 382 428 (INDIA) PHONE :(079-2396 2000),FAX :91-079-23962277

Web: www.ipr.res.in

# MINOR FABRICATION WORKS ENQUIRY

Office Copy

ENQUIRY NO: IPR/MFW/21-22/126

Date: 17-02-2022

Due Date: 09-03-2022 13:00 IST

Please send your offer in sealed envelope specifying Inquiry No, Date & Due Date, ALONG WITH your credentials for the following items:

Important Note:

Please note that e-mail quotations are not acceptable however you may send your queries (if any) to rkumar@ipr.res.in

Please Ensure that your sealed quotation reaches this office not later than above mentioned due date and time.

Kindly go through the following document properly before Quoting which are available on the IPR web portal i.e., <a href="http://www.ipr.res.in/documents/tenders.html/">http://www.ipr.res.in/documents/tenders.html/</a> attached here with.

- 1. Technical specification as enclosed.
- 2. Instruction to the bidders & terms and Condition (refer Form NO:IPR-MFW-01-V1)
- 3. Bidding format(refer Biddingformat MFW-Bid.pdf)

GST fro Goods and Services (IGST/CGST/SGST TAX BENEFITS): PLEASE REFER clause no:8 of Form No:IPR-MFW-01-V1

QUOTATION SHOULD BE ADDRESSED TO RAJESH KUMAR ONLY.

Sr.No.	Description	Quantity	Rate
1	Fabrication of SS304 piping and support structure for exhaust gas	1	No.

#### Free Issue Material

Sr.No.	Description	Quantity	Unit	Value
--------	-------------	----------	------	-------

Note: Please quote with complete technical details (Technical Compliance sheet and product data sheet)

Encl: As per attachment

Sd/-

RAJESH KUMAR Scientific Officer-G

17-02-22

## **Technical Specification Sheet**

### Fabrication of SS304 piping and support structure for exhaust gas

#### 1. Scope of work:

- i. Supply and erection of Stainless Steel pipe outside the lab building along with the lab wall at IPR Neutron & Ion Irradiation Facility. The piping layout includes, Exhaust Fan, valves, Flanges, Cowl section, Filters etc.
- ii. Supply and erection of support structure for vertical SS pipes along the lab wall at IPR Neutron & Ion Irradiation Facility as per the drawing given in Annexure -1.

#### 2. The detailed scope of work is as below:

- i. Supply, installation and testing of material/equipment as per Schedule of quantity (SOO).
- ii. The piping shall be laid vertically from ground to the height of approx. 13 meter. It needs scaffolding arrangement to do piping outside of laboratory building. Arrangement of scaffolding etc. is in contractor scope.
- iii. Laboratory building is made up of RCC, so accordingly equipment's for drilling has to be bring by contractor.
- iv. Pipes support structures need to be prepared at regular interval as per the drawing for laying pipes.
- v. Arrangement of manpower, welding equipment, welding consumables, material-handling equipment, gas, tools and tackles, scaffolding etc. needed to carry out installation, testing & commissioning needs to be arranged by the contractor.
- vi. Required metric thread studs/nuts/bolts/washers/anchor fasteners/supports etc. need to be arranged by the contractor as per SOQ in Annexure-2. The items supplied by the contractor should confirm relevant IS codes.
- vii. The painting work for pipes, fittings and support structures are in the scope of the contractor. Color shade shall be decided by the IPR Engineer-in-Charge.
- viii. The expenditures incurred for all the tests (including DPT & Radiography) shall be met by the contractor.

## 3. Technical specifications of components and welding:

- **A. Piping specification:** All pipes pipe bends, bolting which includes bolts, bolt studs, cap screws, nuts, washers etc. and fittings in the exhaust line are selected in according to the recognized standard (ASME B31.3) for the designed pressure of 5 bars and temperature of 25-45°C
  - i. Gas exhaust Piping: All the pipes and all fittings shall be made of SS 304 material. Seamless pipes as per ASTM A312 grade TP 304, Schedule 10, Schedule 5 and as per ANSI 36.19 shall be considered.
  - ii. Support structure material: Carbon steel or better material required for these support structures should be of good quality conforming to the requirements of ASTM-A-6/A-6M or equivalent.
- iii. Pickling and passivation treatment shall be performed as per ASTM 380 and no traces of oil or grease must remain on the surface of metal in the as-delivered conditions.

- iv. Welding material shall be chosen in accordance with clause no. 328.3 of ASME B31.2 and from reputed manufacturers only. All welding material used in the fabrication of part/components shall conform to the requirements of ASME Section VIII, Division-1.
- v. The requirements of ASME Section IX shall be met for applicable qualified welding procedure specification
- vi. Supply of all welding consumables, filler wires, Argon cylinders etc. required for assembly & erection of pipelines as per actual site condition, material for Liquid Penetrant testing, as applicable are in scope of contractor.
- vii. All joints in the pipe system shall generally to be done by welding, unless otherwise mentioned, or directed at site. All welding shall be done by certified welder.
- viii. Vendor has to establish welder qualification of the welder at IPR site by performing sample welding of 2-1/2" pipe in 6G position at site in presence of IPR representatives. Testing of the joint using RT will be done by vendor and after successful test report only the welder will be allowed to perform the actual welding work in front of IPR representative and tested for DP and Radiography test. DP and radiography testing of sample joints shall be arranged by contractor on their own cost at reputed test lab.
- ix. After satisfactorily test report of sample testing, welder shall be allowed to carry further welding of the pipes. Rest of the welds joints shall have 100% visual inspection, 100% DP test and pressure test (up to 7 bar). Before welding of pipes, make proper 'V' notch at the joints by chamfering the end of pipe with surface grinder. Also pursing of Argon gas throughout the welding is required All electrodes shall be selected to match the mechanical and chemical properties of the parent material.
- x. Radiography charges for sample piece shall be borne by contractor. Additional radiography required due to poor quality of welding, will be done at contractor's cost.
- xi. Fittings and accessories: All fitting likes elbows, Tees, reducer/expander, coupling etc. shall be of SS 304 Fittings used on welded piping shall be of the weldable type.
- xii. Pipe flanges: All flanges including flanges of valves are to be slip on serrated finished flanges (SORF) as per ASME B16.5, class 150 SORF flanges.
- **B. Piping Installation:** Piping shall be properly supported on, or suspended from, stands, clamps, and hangers as specified and as required. The contractor shall adequately design all the brackets, saddles, anchors, clamps and hangers and be responsible for their structural sufficiency.
- **C. Welding:** Welder should follow welding procedure as perr clause 328 of ASME B31.3. Also following points to be considered by the welder.
  - i. Only reputed brand electrodes like Advani/ESAB/D&H/ equivalent should be used for carrying out welding.
  - ii. The welding should be uniform and free from any welding defects.
- iii. In case of defect being identified in any weld joint, the joint shall be grounded off to the base metal and shall be re-welded. Weld repair has to be done as per clause 328.6 ASME B31.3
- iv. Vendor has to provide welding performance report of the Welder, who will be performing the weld joints at IPR site.

### **D.** Inline-Exhaust Fan Specification:

i. Type of exhaust fan: Inlineii. Flow rate: 100-150 CFM.

iii. Static Head of Pump: 50 mm of Water column.

iv. Material of Construction of impeller: Stainless steel

v. **Overall Body of the FAN**: GI

vi. **Power supply**: Single Phase, 230 volt.

Preferable line size of the fan shall be 4"- 6".

Preferred brand: Kruger/Comefri/Nikotra/Punker

**E. Outlet Filter Specification:** A suitable Stainless steel mesh type filter having 100 micron mesh size and can protect outside dust, leaves etc. The filter will be implemented at the outlet of the exhaust fan. Body of the filter should be of GS or CI.

### F. Drain Ball Valve Specification:

i. **Type**: Three piece full bore

ii. **Operating temperature range**: 0 to 40  $^{0}$ C

iii. Media: Gas & water

iv. **MOC of Body**: SS 304 as per SOQ

v. **MOC of ball**: SS 304 solid

vi. **Seat:** PTFE

vii. MOC of handle: MS/SS/equivalent with plastic cover

viii. **Seat leakage**: Tight shut off (Class VI) ix. **End connection**: 1" Threaded connection

**G. Air Dampner valve:** A suitable Air Dampner valve is required to control inlet air flow as per following specification

i. **Media of valve working**: Tritium gas

ii. Working static pressure: up to 50 mm WC

iii. **MOC**: GI body

iv. Leakage: Class 3/100 % leak tight

v. **Size**: 2-1/2"

vi. End connection: Flange

#### 4. Measurement:

Unless otherwise specified, measurement for piping for the project shall be on the basis of center line measurements described herewith. Piping shall be measured in units of length corrected to centimeter along the center line of installed pipes including all pipe fittings, flanges (with gaskets, nuts, and bolts for jointing), unions, bends, elbows, tees, concentric and/or eccentric reducers, inspection pieces, expansion loops etc. The above accessories shall be measured as part of piping length along the center line of installed pipes, and no special multiples of pipe lengths for accessories shall be permitted. The quoted rates for center line linear measurements of piping shall include all wastage allowances, pipe supports including hangers, MS channel, wooden haunches, nuts, check nuts, vibration isolator suspension where specified or required, and any other item required to complete the piping installation as per the specifications. None of these items will be separately measured nor paid for. However, drain valve (ball valve), Dampener valve, SS mesh filter, Exhaust fan etc. shall be separately counted and paid as per their individual unit rates. Fabrication of all types of pipe supports, provided as per the instruction of Engineer in- Charge, will be paid on weight basis, excluding weight of fasteners. Radiography charges shall be borne by contractor. Additional radiography required due to poor quality of contractor's welder, will be done at contractor's cost.

### 5. Inspection, Testing and Acceptance:

- **A. Inspection:** Visual examination to be done in accordance with the requirements of ASME BPVC, Section V, Article 9
  - i. Sufficient materials and components selected at random to satisfy the examiner that they conform to specifications and are free from defects. Progressive sampling shall be done as per the requirements defined in Chapter VI clause 341.3.4 in case when the spot or random examination reveals a defect.
  - ii. Visual inspection of 100% of all completed welds will be done.
  - iii. Random examination of the assembly of the threaded, bolted and other joints to satisfy that it meets the requirements of para 335 of B 31.3.
  - iv. Random examination during erection of piping including checking of alignment, supports and cold spring.

#### **B.** Testing:

- i. **Radiographic or Ultrasonic Testing**: Not less than 5% of the Total circumferential butt and miter groove welds shall be examined fully by radiography in accordance with the requirements defined in para 344.5 of ASME B31.3 or by Ultrasonic Testing in accordance with Para 344.6 of ASME B31.3.
- ii. After the piping job is completed, the entire piping shall be flushed out with air.
- iii. DP TEST: 100% Dye Penetration test shall be carried out for all piping work in accordance with the requirements defined in Para 344.4 of ASME B31.3.
- iv. Air Pressure testing should be carried out at a pressure of 7 bar in SS304 pipe lines.
- v. Leakage, if any observed during testing should be rectified immediately.
- **C. Documentation Checking:** Vendor must submit manufacturing records to prove that procured material and component(s), followed manufacturing and fabrication process, pickling and passivation operation, inspection and testing operations are in-line with the specification.

Acceptance of the complete work will be done after meeting all the above criteria of Inspection, Testing and Documentation work.

#### 6. Site clearance:

The scope of work includes site clearance (after completion of job), hence all area shall be cleared of debris and excess material left during the fabrication / commissioning related work.

#### 7. Completion period:

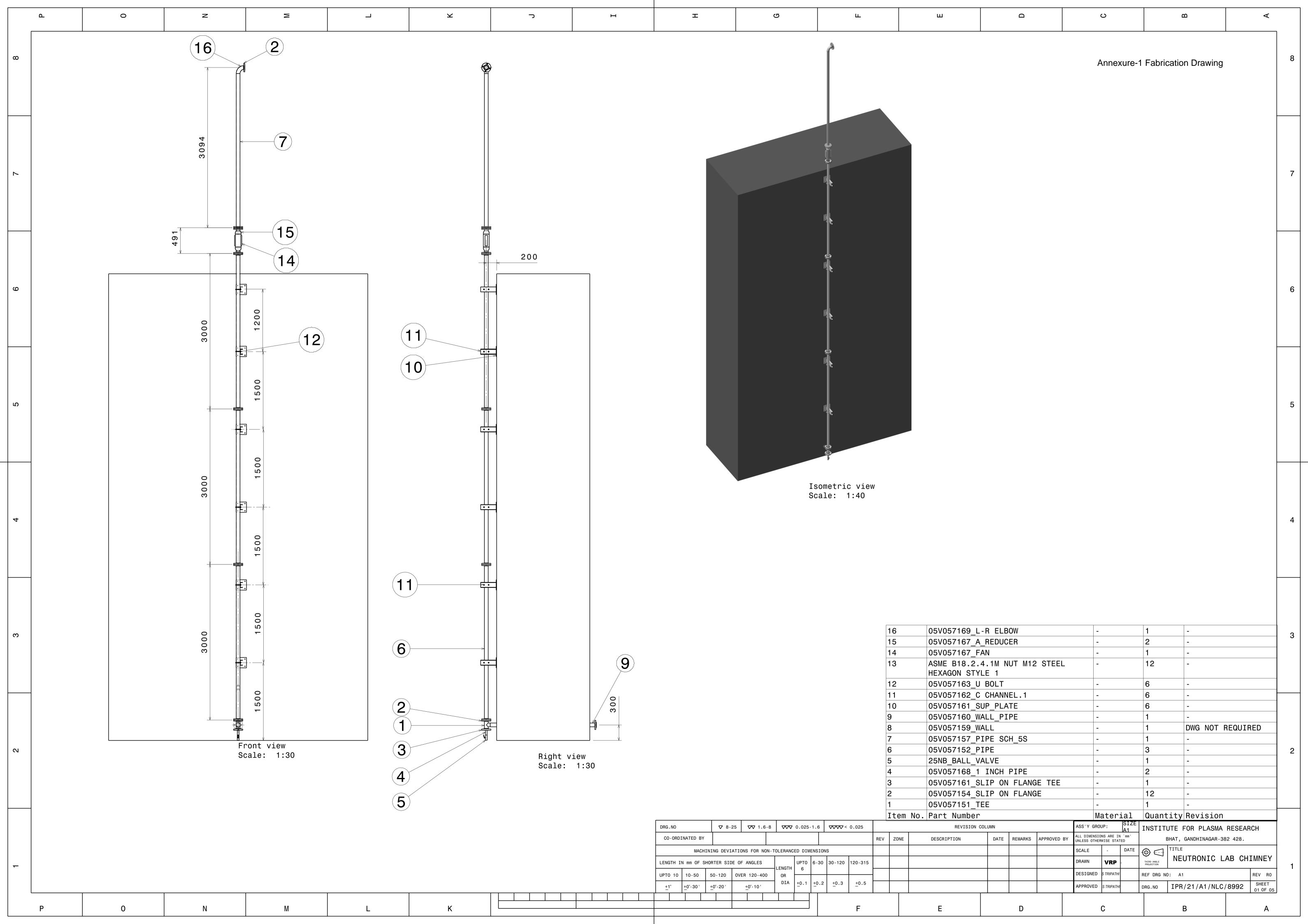
The total completion period is One month from the date of P.O.

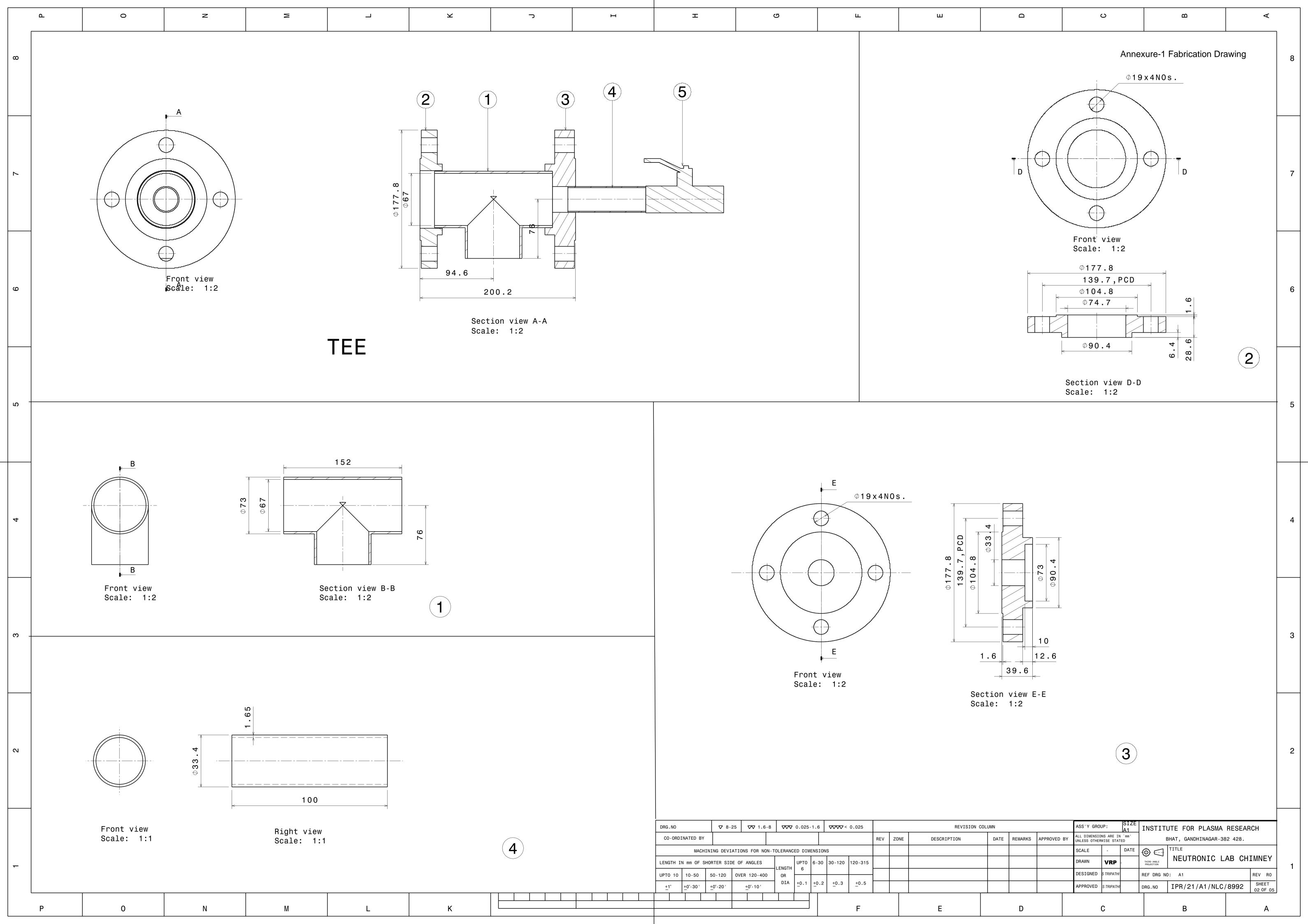
#### 8. Guarantee:

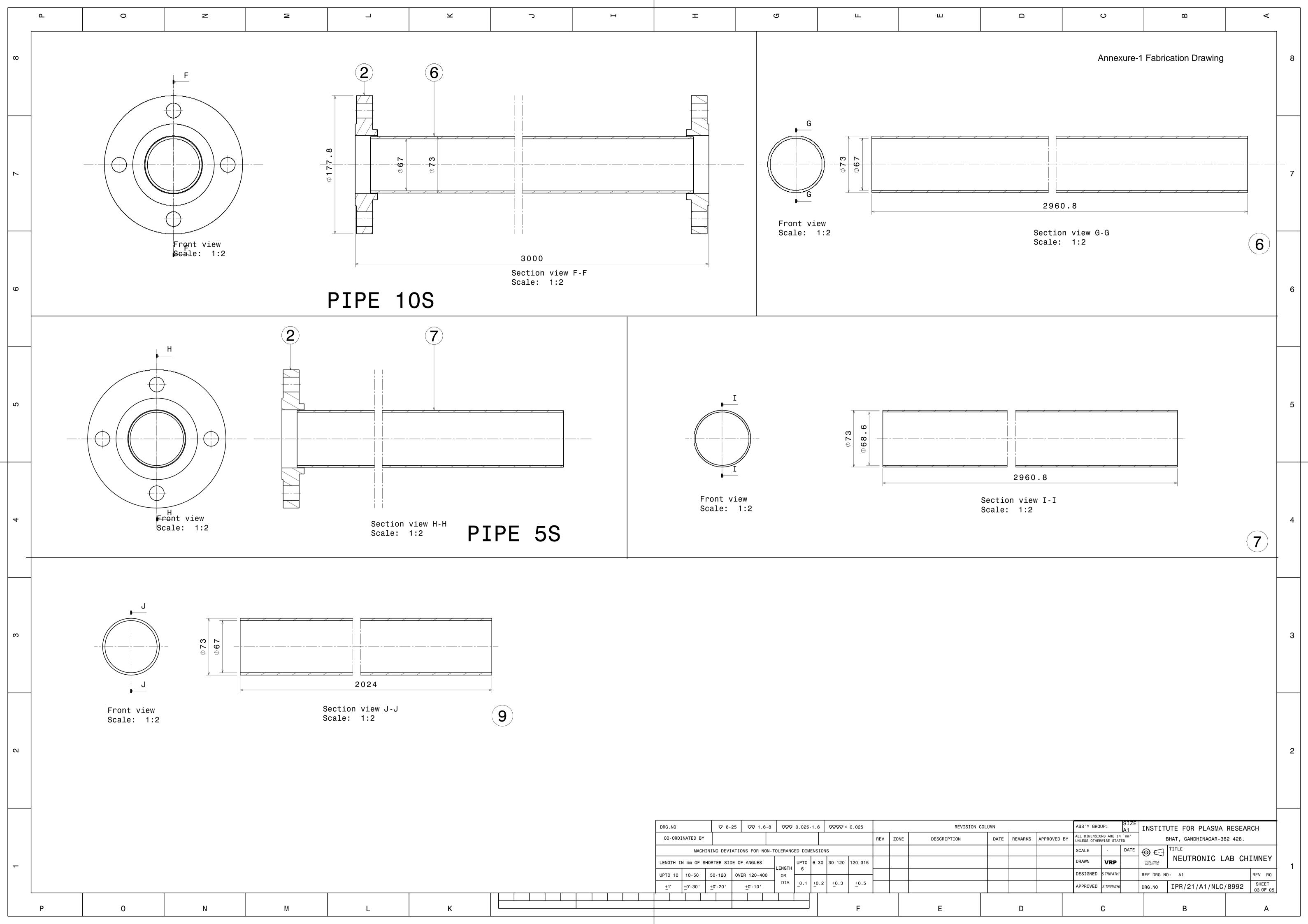
The overall job guarantee shall be of one year against any fault. Any repair/services shall be provided at no extra cost to IPR during this period.

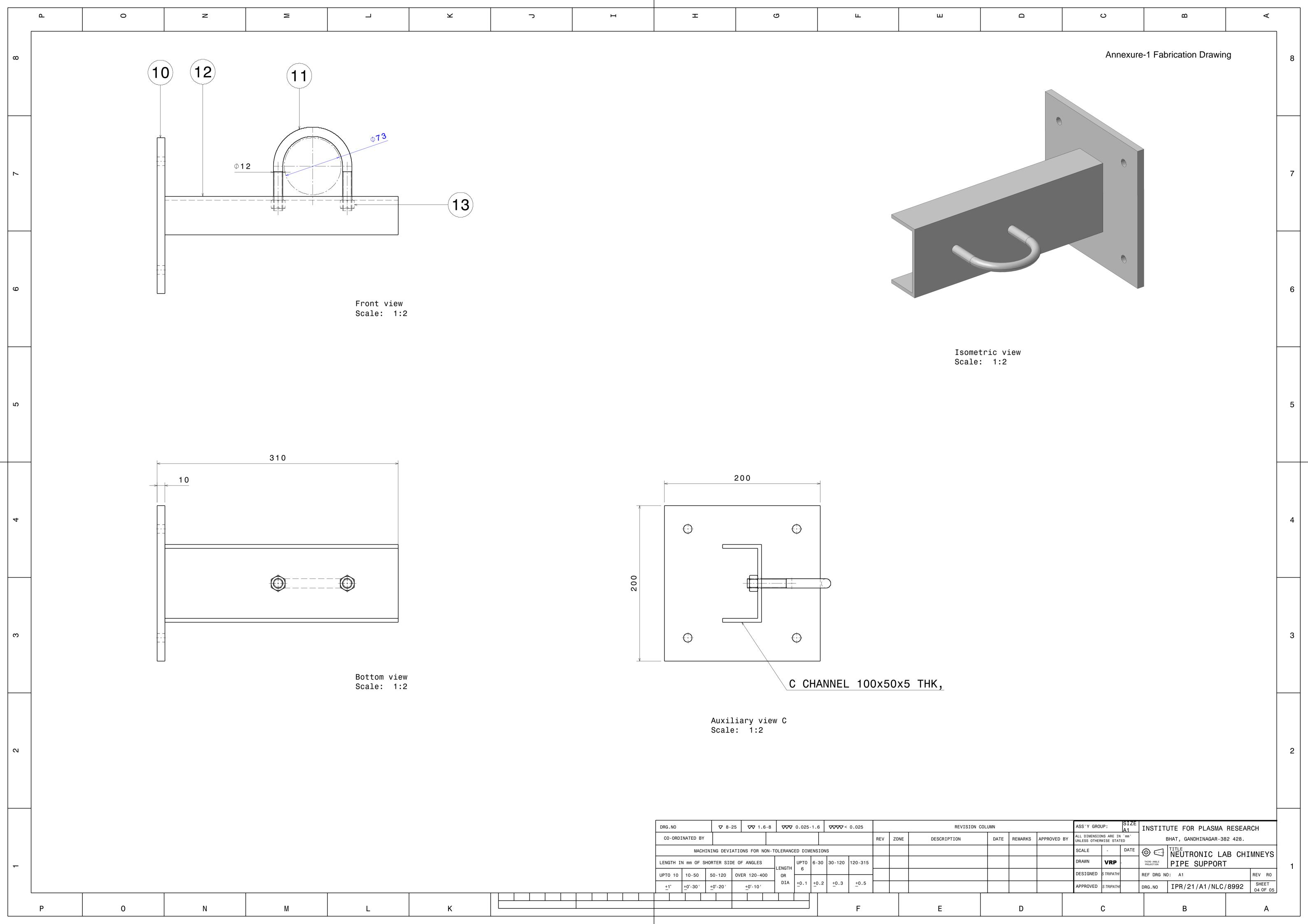
# Annexure-2 - Schedule of Quantity (SOQ)

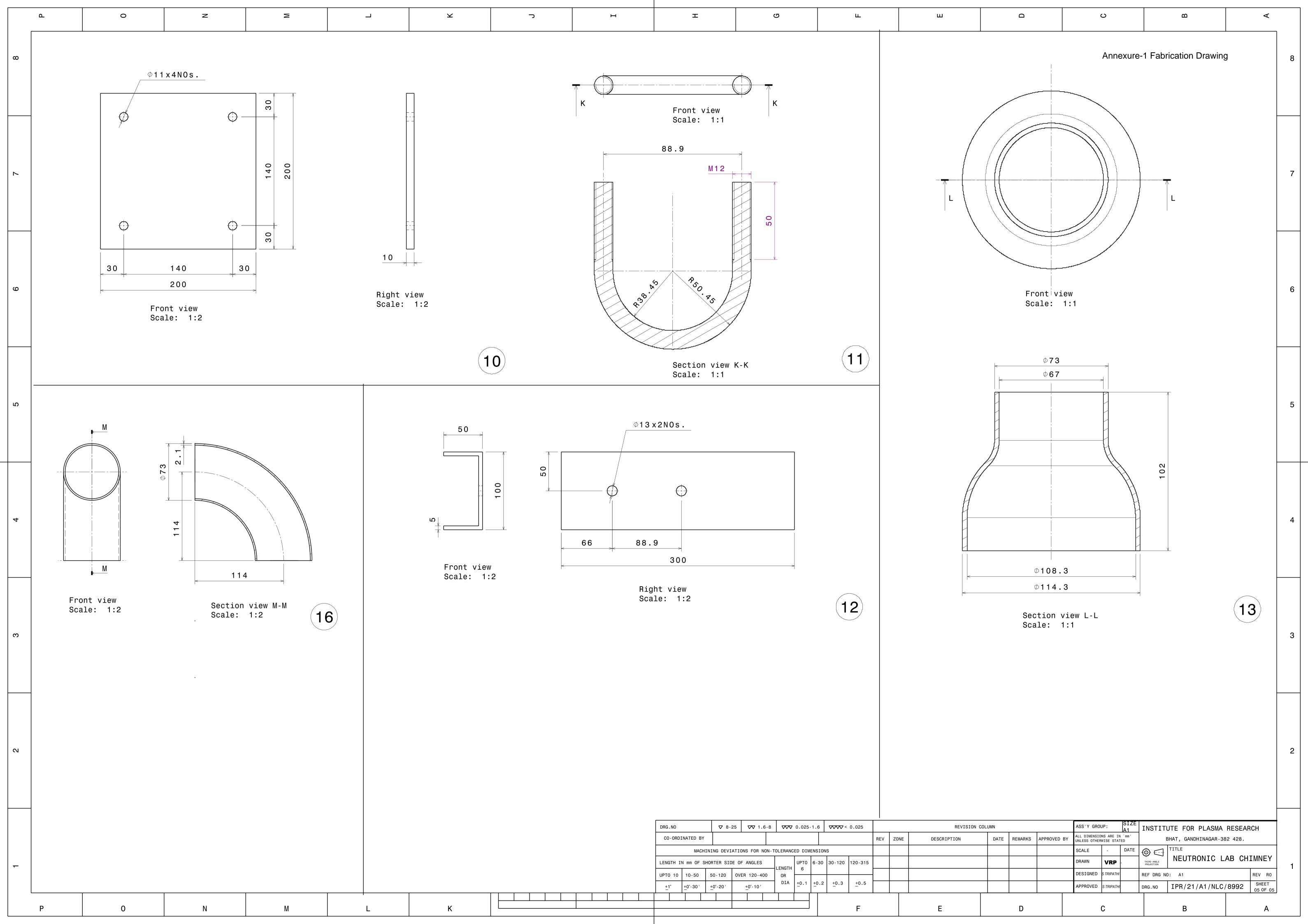
Sr. No.	Item Description	Quantity	Units	
1	Seamless, Schedule 10 Stainless Steel 304 Pipe of size 2-1/2 "	9	Mt.	
2	Seamless, Schedule 5 Stainless Steel 304 Pipe of size 2-1/2	3	Mt.	
3	ANSI 150 class Slip on Serrated finish flanges for 2-1/2" pipe size along with rubber gasket, Nuts bolts and washer	14	Nos.	
4	ANSI 150 class Slip on Serrated finish flange for of 2-1/2"  TEE along with rubber gasket ,Nut bolts and washer	1	Nos.	
5	2-1/2" size Tee	1	Nos.	
6	2-1/2" size 90 deg Elbow	1	Nos.	
7	2-1/2" size 45 deg Elbow	1	Nos.	
8	In-line Exhaust Fan of preferable size 4 "-6" as per the given technical specification along with SS 304 Seamless Pipe in which the FAN will be fitted and connected to main line with expander.	1	Nos.	
9	Stainless Steel fine mesh (100 micron) Filter suitable for 2-1/2" line size.	1	Nos.	
10	MS Support structure C- channel	20	Kg	
11	MS Support Structure Plate	113	Kg	
12	SS U Bolts along with Rubber sleeve	12	Nos.	
13	2-1/2" to 4" Expander/Reducer	2	Nos.	
14	SS Ball valve of size 1" having threaded end both side to connect with drain line	1	Nos.	
15	Suitable Air Dampener valve for line size 2-1/2" gas line to be put before the exhaust Fan	1	Nos.	
16	U-Bolts along with Nuts and washers as per drawing	12	Nos.	











# **Technical Compliance Sheet**

# Fabrication of SS304 piping and support structure for exhaust gas

Sr. No.	Description	IPR specification	Vendor response		
1.	Scope of the work	As per sr. 1 of technical specification	Accepted/Not accepted		
2.	Detailed scope of the work	As per sr. 2 of technical specification	Accepted/Not accepted		
3.	Technical specifications of	Piping specification	Accepted/Not accepted		
	components and welding	Piping Installation	Accepted/Not accepted		
		Welding	Accepted/Not accepted		
		Inline-Exhaust Fan Specification	Accepted/Not accepted		
		Outlet Filter Specification	Accepted/Not accepted		
		Drain Ball Valve Specification	Accepted/Not accepted		
		Air Dampener valve	Accepted/Not accepted		
4.	Measurement	As per sr. 4 of technical	Accepted/Not accepted		
		specification			
5.	Inspection, Testing and	Inspection	Accepted/Not accepted		
	Acceptance	Testing	Accepted/Not accepted		
		Documentation Checking	Accepted/Not accepted		
6.	Site clearance	As per sr. 6 of technical specification	Accepted/Not accepted		
7.	Completion period	As per sr. 7 of technical specification	Accepted/Not accepted		
8.	Guarantee	As per sr. 8 of technical specification	Accepted/Not accepted		

Bidder's sign with official Stamp



# प्लाज़्मा अनुसंधान संस्थान

(भाट. इनदीरा पल के पास. गांधीनगर382428 - . गजरात) भारत

# Institute for Plasma Research

Bhat, Near Indira Bridge, Gandhinagar – 382428, Gujarat (INDIA)

Phone: +91-79-23962000 Fax: +91-79-23962277 Website: www.ipr.res.in



Form No: IPR-MFW-01.V1

#### INSTRUCTIONS TO BIDDERS AND TERMS AND CONDITIONS

- 1. The Quotation and any order resulting from this enquiry shall be governed by our Conditions of Work Order and Contractor quoting this enquiry shall be deemed to have read and understood the same completely.
- 2. Where counter terms and conditions have been offered by the Tenderer, the same shall not be deemed to have been accepted by IPR unless our specific written acceptance thereof is obtained.
- 3. **Quotation:** Quotation should be submitted in the prescribed QUOTATION FORMAT attached with this Enquiry and the same should be submitted in a sealed envelope super-scribing the same with our enquiry No., date, due date and brief description of item on or before the due date. Late/delayed/incomplete/unsigned quotations will not be considered. Envelopes received without Enquiry number, date, due date and brief description of item may be rejected. The quoted prices should be firm for a period of 90 days from due date for placing order. IPR is not bound to accept lowest rate/s. IPR reserves the right to place on one or more parties. The scope of supply includes insurance by the Contractor.
- 4. **Specifications:** Goods should be offered strictly confirming to our specifications/drawings. Deviation, if any, should be clearly indicated by the contractor in their quotation. The Tenderer should also indicate the Make/Type number of the goods offered and catalogues, technical literature and samples, wherever necessary should accompany the quotation. Clarification/s on drawings should be obtained before submitting quotation.
- 5. **Terms of Prices:** Quotation should be submitted on door delivery basis without extra charge wherever possible. For quotations on Ex-Works, Ex-godown basis the approximate packing and forwarding charges should be indicated by the contractor. In the case of local contractors, the goods are to be delivered at our stores free of charge.
- 5.1 In respect of tenders on Ex-works basis, in case the tenderer has not mentioned in the offer packing, forwarding and transportation charges for safe delivery up to Purchaser's site, 2% of the price quoted towards packing (in respect of both local and outstation firms), 1% of the basic price quoted towards safe delivery charges in respect of local tenderer and 3% of the basic price quoted towards safe delivery charges in respect of outstation firm will be added for comparison of offers on safe door delivery at Purchaser's site.
- 5.2 Prices are required to be quoted according to the units indicated in the tender form/Enquiry. When Quotations are given in terms of units other than those specified in the tender form, relationship between the two sets of units must be furnished
- 6. Tender should be free from Correction and Erasures. Corrections, if any, must be attested. All amounts shall be indicated both in words as well as in figures. Where there is difference between amounts quoted in words and figures, amount quoted in words shall prevail. Unsigned quotations will summarily be rejected. If there is a discrepancy between the unit price and total price, unit price shall prevail.
- 7. IPR shall be under no obligation to accept the lowest or any tender and reserves the right of acceptance of the whole or any part of the tender or portion of the quantity offered and the tenderers shall supply the same at the rate quoted.
- 8. Goods & Services Tax (GST): The details of Taxes/GST and other levies legally applicable and intended to be claimed should be clearly indicated in the tender. Where this is not done, no claim on these accounts would be admissible later.

#### a) GST for Goods (IGST/CGST/SGST TAX BENEFITS):

IPR is entitled to avail tax benefit as per the following notifications issued by Ministry of Finance, Department of Revenue, Government of India:

- (1) No: 47/2017-INTEGRATED TAX (RATE) DATED 14/11/17 for IGST
- (2) No: 45/2017-CENTRAL TAX (RATE) DATED 14/11/17 for CGST

And,

IPR is entitled to avail tax benefit as per the following notifications issued by Finance Department, Government of Gujarat:

(1) No. 45/2017-STATE TAX (RATE) DATED 15/11/17 for SGST

As per above notifications IPR will bear only 5% IGST for procurement of goods from outside Gujarat & 2.5% CGST and 2.5% SGST (total 5%) for procurement of goods within Gujarat. Vendors are required to charge tax as per these notifications while quoting/supplying the goods. Deviations, (if any) should be clearly mentioned in the quotation/offer.

#### Please specify the HSN codes while quoting.

#### b) GST for Services:

As applicable. Specify the SAC codes wherever services are involved.

- 9. **Delivery Date:** Delivery period is essence of the Contract. Contractor must indicate the firm delivery date by which the goods will be dispatched or delivered by them from the date of our order. Delivery period shall be clearly indicated against each item separately.
- 10. **Price/ Purchase Preference:** Purchase/Price preference to industries will be given as per the policy of the Government of India in force at the time of evaluation provided their offer is in compliance with the conditions of the policy.

An Aided Institute of Department of Atomic Energy, Government of India



# प्लाज्ञमा अनुसंधान संस्थान

भाट, इनदीरा पल के पास, गांधीनगर382428 - , गुजरात) भारत

## Institute for Plasma Research

Bhat, Near Indira Bridge, Gandhinagar – 382428, Gujarat (INDIA)

Phone: +91-79-23962000 Fax: +91-79-23962277 Website: www.ipr.res.in



- 11. **Liquidated Damages:** The successful Vendor/Bidder should pay liquidated damages @ ½% (half percent) of the total work order value for the delay of each week in the scheduled date of completion of the work envisaged in the Work Order subject to a maximum of 5% (Five percent) of the total Work Order value.
- 12. **Inspection**: Goods on its arrival at IPR will be inspected by Stores, and his decision in the matter will be final. However, where the items are required to be inspected at the Contractors Premises, Contractor has to give advance notice regarding readiness of the Goods to enable us to depute our representative for inspection.
- 13. **Payment:** Payment will be arranged for accepted goods only within 30 days from the date of receipt of goods at IPR and bills in our accounts section, completed in all respects.
- 14. No correspondence will be entertained within 30 days from the date of receipt of good and bills, whichever is later.
- 15. **Guarantee**: The Stores offered should be guaranteed for a minimum period of twelve months, from that date of acceptance, against defective Goods, design, workmanship, operation or manufacture. For defects noticed and communicated during the Guarantee period, replacement/rectification should be arranged free of cost within a reasonable period of such notifications. In case where our specifications call for a guarantee period more than 12 months specifically, then such a period shall apply.
- 16. **Performance Bank Guarantee**: If demanded by IPR, the successful bidder will have to furnish Performance Bank Guarantee for 10% of the order value (basic price) from a Nationalized/Scheduled Bank/State Bank of India, valid throughout the Guarantee/Warranty period. The scheduled banks approved by IPR are Axis Bank, HDFC Bank, ICICI Bank and IDBI Bank. Bank Guarantees submitted other than from banks approved by IPR will not be accepted.
- 17. **Security Deposit:** If demanded the successful Bidder will have to furnish to the Purchaser an interest free security deposit for 10% (Ten percent) of the order value in the form of Bank Guarantee of an equivalent amount from a nationalized/ scheduled Bank/State Bank of India within 15 days from the date of work order and the said Guarantee should be valid till the goods are accepted by IPR. The scheduled banks approved by IPR are Axis Bank, HDFC Bank, ICICI Bank and IDBI Bank. Bank Guarantees submitted other than from banks approved by IPR will not be accepted. The Security deposit shall be forfeited in case the selected Bidder does not start the work within the time limit specified or fail to complete the work within the stipulated delivery period or fail to comply with any of the terms and conditions in the work order. On successful completion of scope of work and its acceptance by IPR, Contractor should send a letter requesting return of the original BG.
- 18. The Contractor shall at all times indemnify the purchase against all claims which may be made in respect of the stores for infringement of any right protected by Patent Registration of design or Trade Mark and shall take all risk of accidents or damage, which may cause failure of supply from whatever cause arising and the entire responsibility for sufficiency of all means used by him for the fulfilment of the contract.
- 19. **Free Issue Material (FIM):** Successful tenderer will have to arrange insurance showing beneficiary as "Institute for Plasma Research" at their risk and cost towards adequate security for the materials/property provided/issued by the Purchaser as Free Issue Material for the due execution of the contract.
- 20. The Director, IPR reserves the right to accept or reject any quotations fully or partly or to cancel the enquiry without assigning any reason.
- 21. **Jurisdiction**: The contract shall be governed by the Laws of India for the time being in force. The Courts of Gandhinagar only shall have jurisdiction to deal with and decide any legal or dispute arising out of this Contract.

(This	need	to he	nrinted	in	Bidders	letter	head)
111113	neeu	to be	Dilliceu	111	Diducts	ierrei	neau

- 1. Please quote with complete technical details along with technical compliance sheet.
- 2. Quotation should be submitted in the format given below, else IPR shall not consider the offer by the vendor.

NAME OF PARTY:	
ENQUIRY NO:	
QUOTATION No. & DATE:	

Currency of Quotation: Indian Rupees

Sr. No.	Item Description	HSN/SAC Code	Quantity	Unit Rate (Basic)	Packaging & forwarding (P&F)	Applicable GST	Rate (incl P&F and GST)	Total Value
		Couc	а	b	С	d	e = b + c + d	f = a * e
1								
2								
3								
4								
5								
6								

Sr. No.	Particular	Remarks
I.	Ex-works / FOR Destination	
II.	Freight	
III.	Insurance	
IV.	Delivery Period	
V.	Payment (IPR terms will apply)	
VI.	Guarantee / Warrantee	
VII.	Validity Period	
VIII.	Discount (if any)	
IX.	Remarks	

Place: Authority Signatory

Date: Company Seal

#### Note:

- 1. Bidder should submit the copy of GSTIN / ARN Certificate along with the offer
- 2. Bidder should specify the SUPPLY and SERVICE rates/ charges separately wherever applicable