

## ENQUIRY - LOCAL

OFFICE COPY

ENQUIRY NO

: I-IEN20058

Date

: 22/12/2020

Due Date

: 12/01/2021 by 5:00 PM (IST)

We invite your rate/s for the following item/s. The Instructions to bidders and Terms & Conditions are attached herewith.

### Important Note :

1. Enquiry No., Date & Due Date should appear on the envelope otherwise your offer will be rejected.
2. Address quotation only to the Purchase officer.
3. ITER-India, IPR is entitled to avail concessional rate of GST @ 5% (2.5% CGST and 2.5% SGST) as per Central Goods and Services Tax (CGST) Notification No. 45/2017-Central Tax (Rate) dated 14th November, 2017, State Goods and Services Tax (SGST) Notification No. 45/2017 – State Tax (Rate) dated 15th November, 2017 and IGST @5% as per Notification No. 47/2017-Integrated Tax (Rate) dated 14th November, 2017. Therefore, please consider GST in your quotation accordingly.

Sr No.	Material Description	Quantity	Unit
1	SUPPORT STRUCTURE-Temporary working platform MS +Aluminum	1	NOS


### Note :

- (1) Submit your quotation in hard copy (in duly sealed envelope) AT THE ABOVE ADDRESS. No Tender fees & EMD needs to be submitted for this enquiry.
- (2) Any clarification on this enquiry may be sought from the Purchase Officer, ITER-India
- (3) Quote with complete technical details.
- (4) Quotation should invariably be submitted in the attached format (Quotation Format) ONLY else ITER-India may not consider your offer.
- (5) Attached herewith Annexure -I for Technical Specifications and Engineering drawings. (Total pages 20)
- (6) Payment shall be made within 30 days from the date of final acceptance of ordered items of purchaser and on receipt of error free invoice and other necessary documents at our end.
- (7) Each Party shall bear their own expenses including travel, boarding, lodging & other for visit to other Party's end.
- (8) Bidder shall sign & stamp each & every page of Enquiry, Annexures and Drawings which will be considered as an acceptance by the bidder. Compliance sheet attached after the drawings to be filled, signed & stamped and to attach along with offer.
- (9) The bidder under the category of MSME Enterprise shall attach a MSME Certificate (Udhyog Aadhar) along with the offer.
- (10) TDS as per CGST Act: As per provisions of section No. 51 of the CGST Act 2017, TDS @ 2% (IGST 2% or CGST 1% and SGST 1%) will be deducted while making payment to the suppliers where total value of orders/contracts/work orders exceeds Rs. 2.5 lakhs, in the event of order in Indian Rupees. Necessary TDS Certificate will be issued to the supplier after TDS deduction.
- (11) GEM Availability Report Id: GEM/GARPTS/03122020/5X1PK7W36CL2 dated 03.12.2020
- (12) Only Class-I Local Suppliers and Class-II Local Suppliers are eligible to bid for this enquiry. Refer Government

notification no. P-4501/2/2017-PP (BEII) dated 16.09.2020 issued by Ministry of Commerce & industry in this regard Provisions as per this notification as amended from time to time shall apply for this tender/enquiry including bid evaluation.

- (13) Class-I Local Suppliers and Class-II Local Suppliers will submit duly signed self declaration on their letter head as per Annexure-II along with the offer failing which bid may not be considered for further evaluation.
- (14) Micro and Small Enterprises (MSEs) must be the manufacturer of the offered product in case of bid for supply of goods. Traders are excluded from the purview of Public Procurement Policy for Micro and Small Enterprises. In respect of bid for Services, the bidder must be the Service provider of the offered Service. Relevant documentary evidence in this regard shall be submitted along with the bid in respect of the offered product or service.

Encl:- as above

  
Rakhi Dharamdasani  
OFFICER-I (PURCHASE & STORES)  
ITER-India (IPR)

## TERMS AND CONDITIONS

1. The quotation and any order resulting from this enquiry shall be governed by our Conditions of Order and supplier quoting against this enquiry shall be deemed to have read and understood the same in to
2. Where counter terms and conditions have been offered by the Tenderer, the same shall not be deemed to have been accepted by ITER-India unless our specific written acceptance thereof is obtained.
3. Quotation: Your quotation superscripting our enquiry No., date, due date and brief description of item should be submitted to the Purchase Officer, ITER-India in sealed envelope on or before the due date. Late/Delayed/incomplete 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. ITER-India is not bound to accept lowest rate/s. Bidder shall submit the price bid/offer on Bidder's letter head with official seal and sign on each page.
4. The bid documents shall be prepared in English language only
5. All pages of the bid documents shall be numbered. Each page of the bid document shall be stamped and initialized.
6. In the event of any date indicated above is a declared Holiday, the next working day with the same time limit shall become operative for the respective purpose mentioned herein
7. In case of deviation in payment terms including demand of advance other than specified in payment schedule and accepted by ITER-India, prevailing Prime Lending Rate (PLR) of SBI will be loaded for price comparison purpose
8. ITER-India and their authorized representatives may visit the Contractor/Sub-contractors if required as part of technical evaluation process
9. ITER-India reserves the right to place order on one or more parties.
10. Specifications: Material should be offered strictly conforming to our specifications/drawings, if any. Deviation, if any, should be clearly indicated by the supplier in their quotation. The Tenderer should also indicate the Make/Type number of the materials offered and catalogues, technical literature and samples, wherever necessary should accompany the quotation. Clarification/s on specifications/drawings should be obtained from Purchase Officer before submitting quotation.
11. Terms of Prices: Quotation should be submitted on door delivery basis, duly packed & insured without extra charge wherever possible. In the case of Indian suppliers, the material is to be delivered at our stores free of charge duly packed & insured.
12. Unit rate/s should be valid throughout the validity of Purchase Order for addition/deletion purposes. Break-up of price should be furnished. The quoted price should not be subject to price escalation for whatsoever reasons. The quoted price shall be firm, fixed and non-revisable during the validity/extended validity of Purchase Order.
13. 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.
14. 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.
15. ITER-India 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 rates quoted. ITER-India also reserves the right to split the order at its sole discretion.
16. Octroi is not applicable at present.
17. Delivery Date/Period: Delivery period is essence of the Order. Supplier must indicate the firm delivery date by which the materials will be dispatched / delivered by them from the date of our order.
18. Delivery period shall be clearly indicated against each item separately.
19. Inspection: Materials on its arrival at ITER-India will be inspected by our Engineer/Stores In-Charge, and his decision in the matter will be final. However, where the items are required to be inspected at the Suppliers Premises, Supplier has to give advance notice to the Purchaser regarding readiness of the material to enable Purchase/Stores section to depute his representative for inspection.
20. Payment: Payment will be arranged for accepted materials only within 30 days from the date of acceptance of materials at ITER-India and receipt of error free bills in our accounts section, complete in all respects.
21. No correspondence will be entertained within 30 days from the date of receipt of material and bills, whichever is later.
22. Warranty: The Stores/Items offered should be guaranteed for a minimum period of twelve months from the date of acceptance, against defective materials, 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 notification. In case where our specifications call for a guarantee period more than 12 months specifically, then such a period shall apply.
23. The Contractor/Supplier shall at all times indemnify the purchaser 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 fulfillment of the Order.
24. Successful tenderer will have to furnish in the form a Bank Guarantee or in Indemnity Bond form as called for by the Purchaser towards adequate security for the materials/property provided/issued by the Purchaser as Free Issue Material for the due execution of the Order. Insurance for the Free Issue Material shall be arranged by the Supplier/Contractor at his risk and cost.
25. Non-compliance to tender specifications and/or tender scope and/or tender terms and conditions are liable for rejection. Decision of ITER-India in respect of non-compliance shall be final and binding on the bidders.
26. Canvassing in any form with regard to this tender will lead to rejection of the bid.
27. The Project Director, ITER-India reserves the right to accept or reject any quotations fully or partly or to cancel the enquiry without assigning any reasons.
28. This enquiry is not a commitment and the Purchaser reserves the right to reject or cancel any or all offers.
29. Jurisdiction: The Order shall be governed by the Laws of India for the time being in force. The Courts of Ahmedabad/Gandhinagar only shall have jurisdiction to deal with and decide any legal or dispute arising out of this Order.
30. Unsuccessful bidders will not be intimated about the results of the enquiry/tender.
31. Purchase will not be responsible for payment of any interest to the Supplier, in case of delay in releasing payment.
32. The price evaluation shall be carried out on Landed price.



## FORMAT FOR SUBMISSION OF QUOTATION

Enquiry No. : I-IEN20058  
Name Of Party : OFFICE COPY  
Quotation No. & Date :  
Due on : 12/01/2021 by 5:00 PM (IST)

Sr No.	Material Description	Qty	Unit	Rate	Total
1	SUPPORT STRUCTURE-Temporary working platform MS +Aluminum	1	NOS		
				Grand Total	

### COMMERCIAL TERMS & CONDITIONS \*

Sr.No	Description	Bidder's Compliance
1	Free Door delivery	
2	Packing & Forwarding (To Specify, if any)	
3	Safe Delivery Charges (Please mention if not included in rate mention above)	
4	Delivery Period (Please refer Sr. No. 16 of attached Annexure - I)	Comply Yes/No (In case of No Please provide details)
5	Payment:ITER-India payment terms will apply (Refer Sr. No. 6 of Note)	Comply Yes/No (In case of No Please provide details)
6	Warranty (Refer Sr. No. 23 of Terms and Conditions)	Comply Yes/No (In case of No Please provide details)
7	Validity Period (Refer Sr.No. 3 Of Terms and Condition)	Comply Yes/No (In case of No Please provide details)
8	GST ( Not to be included in quoted rates)	
9	GST(Refer Sr.No.3 of Important Note)	Comply Yes/No (In case of No Please provide details)
10	GST Registration No. (To specify)	
11	Udhyog Aadhar No. & Category (Micro/Small/Medium Enterprise)	
12	HSN Code	
13	Discount (To specify, If any)	
14	Remarks	

\* Fill in the applicable details


Place:

Authorised Signatory:

Date:


Company Seal



	<b>ITER-India</b> <b>(Institute For Plasma Research)</b>	Enquiry No.
		I-IEN20058

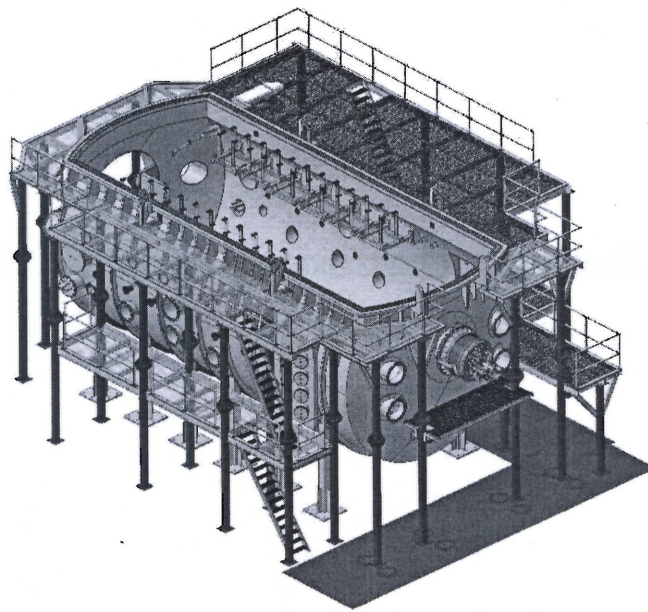
### **Annexure-I**

**Contract document for Engineering procurement and construction of temporary work platform for INTF vessel.**

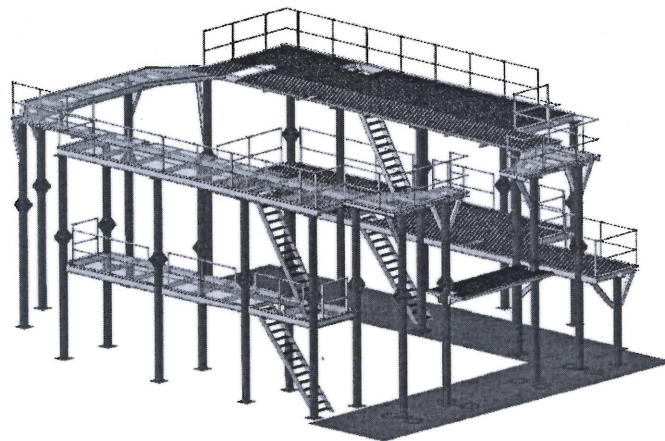
	<b>ITER-India</b> <b>(Institute For Plasma Research)</b>	Enquiry No.
		I-IEN20058

# 1. **PROJECT DESCRIPTION:**


A temporary work platform was proposed alongside the INTF vessel for easy working, assembly and experiment activities inside ITER-INDIA DNB Lab. Temporary work platform was constructed with MS structures as shown in the Fig1, 2 with a provision for easy assembly and dis assembly when required. The detailed scope of work described as below. The main feature of mezzanine floor is the removable chequered plate and removable structure for easy access and maintenance.



*Figure 1: Three dimensional view of temporary working platform with vessel.*



*Figure 2: CAD view of temporary working platform.*


	<b>ITER-India</b> <b>(Institute For Plasma Research)</b>	Enquiry No.
		I-IEN20058

## 2. **Scope of work:**

The scope of work involves the following:-

- 1) Generation of engineering drawings based on conceptual drawing supplied by ITER-India for the temporary work platform for INTF vessel. Vendor has to follow the dimensions of structural members as provided by ITER-India. (Conceptual drawing provided by ITER-India mainly includes the dimension of structural member excluding the joint details of structural members. The same has to be included by vendor in the manufacturing drawing.) The chequered plates/aluminium grating and structural beams shall be removable/modular so as to provide access from crane, maintainability and assembly of components around vessel. (ITER-India will provide the conceptual drawing to the suppliers. Supplier has to provide the final engineering drawing to ITER-India as per specifications).
- 2) An assessment of the conceptual drawing provided by ITER-India is to be done by vendor to meet the fabrication, erection and installation requirements with respect to required IS code. Vendor is required to suggest changes (if any) in the engineering drawing to suit the manufacturing and erection requirements.
- 3) A staircase which has to be removed and a spiral stair case has to be fabricated as per the CAD drawing before fabrication of structure.
- 4) The structure shall be designed in modular section for the ease of construction. Aluminium grates shall be use used for modularity, ease of construction and to decrease the weight. Bolting shall be used wherever there is a joint between aluminium and MS.
- 5) Joint design shall be provided by the vendor wherever welding and bolting connections are made and shall be approved by ITER-INDIA. It should be based on relevant IS code and shall withstand the loads of industrial structure. It shall withstand minimum of 250Kg /m2
- 6) Preparation of manufacturing / fabrication drawing and provide them to ITER-India for review and approval. Manufacturing/ Fabrication drawings shall include the details of all joint connections in between the structural members
- 7) Preparation of assembly, erection, inspection, & testing plan for the structure as per approved manufacturing drawing and get approval on same with ITER-India.
- 8) Procurement of all the items required for execution of work shall be under the scope of vendor.
- 9) Fabrication of structural / construction elements as per the approved drawing meeting the requirements of erection plan. Construction elements include all beams, channels, chequered plate, nuts and bolts.
- 10) Loading, transportation and unloading at ITER-India lab (IPR) site of various construction elements and shifting to the assembly/fabrication point shall be under the scope of vendor.



	<b>ITER-India</b> <b>(Institute For Plasma Research)</b>	Enquiry No.
		I-IEN20058

- 11) Submission of various inspection reports of material /material test certificates to ITER-India.
- 12) Final Paint application over the fabricated structure. Two coats of paint after primer application, As per ITER-India proposed colour scheme along with primer shall be applicable.
- 13) Safety handrails shall be provided by the supplier wherever necessary as suggested by ITER-India.

### **3. ENGINEERING DRAWINGS/DESIGN:**


Conceptual drawing provided with the tender documents contains the dimensions for structural members i.e. beam channels, gratings, and chequered plate and configuration dimension of structure. However, based on these drawings vendor must prepare the engineering drawings and fabrication drawings highlighting the details of the joint and the connections between structural members. Conceptual Drawings for working platform are provided in Annexure 1. Details and position of safety handrails are to be provided by vendor in the fabrication drawing with the approval of ITER-India.

### **4. BASIC SCOPE OF DELIVERABLE:**

1. Generation of Engineering drawings and Fabrication drawing listing the details of connection joints between several structural members and placement of hand rails.
2. All the structural members including beam, channels, Aluminium parts and grating as per approved fabrication drawings and construction of the structure.
3. Test certificates for raw materials.
4. Final Inspection and testing reports as per section 13 of this specification.


### **5. GENERAL TERMS AND CONDITIONS:**

1. The job needs to be carried out in an in-house building structure, safe procedure to be adopted for working all the time.
2. During hot work, precaution has to be taken to prevent any un-wanted incidents.
3. Vendor shall arrange supervision for fabrication & erection activity. Also vendor shall obey IPR safety rules/norms during site work.
4. Vendor shall depute a qualified supervisor having relevant experience for supervision of fabrication and erection work.
5. The vendor has to take necessary precaution for the safe transportation of the material. Before quoting for the said job, vendor shall need to visit the site and make himself acquainted with the scope of the job and quote accordingly. After the site visit, vendor shall provide a confirmation about the clear understanding of scope of work.
6. The vendor shall arrange all equipment & tools required for execution, testing & completion of the job.
7. All the safety precautions including supplying & providing localised fire screens for welding of elements etc. shall be arranged by the vendor.

	<b>ITER-India</b> <b>(Institute For Plasma Research)</b>	Enquiry No.
		I-IEN20058

8. Time for completion shall be reckoned from the date of release of purchase order. Time for completion shall include the time required for mobilization, demobilization, carrying out the works as per requirements of Contract Document and instructions of ITER-India representatives. The job scope is as defined in tender.
9. Ensuring non-damage of pre-installed RCC structures, electrical cables, Lab components and pre-installed lab facilities during erection work.
10. The vendor shall ensure that the Safety, Health and Environment (SHE) requirements are clearly understood & faithfully implemented at all levels at site.
11. Non-Conformance on SHE by vendor (including his Sub-vendors) as brought out during review/audit by ITER-India representatives shall be resolved forthwith by vendor.
12. All Precaution to be taken to avoid accidents. In case of any injury to personnel or damage to purchaser's property shall be investigated by a nominated safety committee/authority of ITER-India, for root cause & recommend corrective and preventive actions. Findings shall be documented and suitable actions taken to avoid recurrences shall be communicated by ITER-India.
13. The vendor shall ensure that all their staff and workers including their sub-vendor(s) shall wear Safety Helmet and Safety shoes. Vendor shall also ensure use of safety belt, protective goggles, and gloves etc. by the personnel as per job requirements and as specified by IPR safety officer.
14. Hazardous and/or toxic materials such as solvent coating or thinners shall be stored in appropriate containers at appropriate place in order to avoid any hazardous situation. Storing of such solvents/chemicals will be vendor's responsibility.
15. Vendor shall ensure storage of materials that are not detrimental to the environment. Good housekeeping before and after the work shall be maintained by vendor. Any damage to materials during construction has to be repaid for.
16. Accident/Third Party Liability: The Supplier will take all possible precautions to avoid damage to the Purchaser's property during its onsite activities. Supplier shall also take insurance covering third party liability for the personnel and equipments and/or tools deployed at Purchaser's site against all risks, such as injuries, loss of life etc. Supplier will be fully responsible and liable for payment of compensation. In the event of loss and/or damage to Purchaser's property / any item(s) / equipment and/or injury or loss of life to Purchaser's personnel during the course of onsite activities due to the Supplier's default. Supplier will be fully responsible and liable for such damages and/or losses and payment of appropriate compensation as assessed by the Purchaser. Supplier will relieve the Purchaser from all the risk and liabilities under this clause.
17. Safety requirements: The Supplier shall take all necessary precautions to ensure safety of labourers deployed for the said work and arrange to provide prompt medical assistance if required. Supplier should keep the fully equipped first aid box handy at the site. The purchaser is not in any case responsible for any type of accident and or incident during the execution of works and it will be the total responsibility of the Supplier. The Supplier shall make his own arrangement for the security of his personnel employed for this job, materials, plants and



	<b>ITER-India</b> <b>(Institute For Plasma Research)</b>	Enquiry No.
		I-IEN20058

equipment's etc. The Supplier shall note that this work has to be carried out inside Institute's campus, hence special care shall be taken at the time of execution of the work. The Supplier shall comply with the safety manual of the purchaser. Wherever site activities like installation, erection, commissioning and site acceptance testing are involved, the supplier must follow the IPR Safety Protocol which are available on ITER-India website under link: [https://www.iter-india.org/display\\_file\\_grid.php#](https://www.iter-india.org/display_file_grid.php#) during execution of the work. The Supplier shall give strict instructions to his personnels involved in the work, not to damage any equipment, fixtures, furniture and /or any items of the purchaser lying inside the building. The Supplier is fully responsible to clean the floor, paint, fixtures etc., after the completion of the work / at the time of execution of the work. He should also note that after completion of the work he shall dispose or stack the debris outside / inside of the campus as directed by Purchaser.


## 6. TECHNICAL SPECIFICATIONS:

### 6.1. Reference codes and Handbook

#### BIS Codes

<b>CODES</b>	<b>DESCRIPTION</b>
IS 800:2007	Code of Practice for general construction in Steel
IS 806:1968	Code of Practice for use of Steel Tubes in General Building Construction
IS 808 :1989	Dimensions for Hot Rolled Steel Beam, Column, Channel and Angle Sections
IS 733:1983	Specification for wrought aluminium alloy beams, rods and I section.
IS:1363 Part 1 & 3 : 2002	Black Hexagonal Headed Bolts, Screws, Nuts & Locknuts of Product Grade C- Hexagon Head Bolts (M5-M64)
IS 504:1963	Chemical composition and mechanical properties of aluminium alloys.
IS 1852:1985	Rolling and Cutting Tolerances for Hot Rolled Steel Products
IS:2062 : 1999	Steel For General Structural Purposes- Specification
IS:3502 : 1994	Specification For Steel Chequered Plates
IS:3757 : 1985	High Strength Friction Grip Structural Bolts
IS:5369 : 1975	General Requirements for Plain Washers and Lock Washers
IS:6639 : 2005	Specification for Hexagon Bolts for Steel Structures
IS:7215 : 1974	Tolerances for Fabrication Of Steel Structures



	<b>ITER-India</b> <b>(Institute For Plasma Research)</b>	Enquiry No.
		I-IEN20058

IS:7205 : 1974	Safety Code for Erection of Structural Steel Work
IS:8500 : 1991	Weld able structural steel (Medium and High Strength qualities)
IS:9595 : 1996	Recommendation for metal arc welding of carbon manganese steel
IS:12843 : 1989	Tolerances for Erection Of Steel Structures

## 6.2. Materials

### 6.2.1. Structural Steel

All structural steel shall be of tested quality. The material of all Indian rolled section and plates shall conform to IS 2062 Grade – A designation Fe410WA specified there in. Also vendor shall submit the test certificate for the same which shall be traceable with material identification. In case of non-availability /non-traceability of test certificate a separate lab test shall be performed in a NABL/ government approved laboratory confirming the IS specification. Cost of any such test shall be beard by the vendor.

### 6.2.2. Structural aluminium

All structural aluminium shall confirm IS 733-1983.The chemical specification and mechanical properties shall be with respect to IS504.ASTM 6000 series equivalent aluminium can also be used as structural members. Suitable material certificate shall be provided to II representative before structural fabrication.

### 6.2.3. Bolts and Nuts

Bolts and nuts shall conform to IS: 1363 or IS: 1364: 2002 as applicable. Unless otherwise specified nuts and bolt heads shall be hexagonal. Property class of nuts and bolts shall be compatible.

### 6.2.4. Washers


Plain washers shall be made of mild steel conforming to IS: 5369 unless noted otherwise. Minimum one washer shall be supplied for each bolt and in case of special types of bolts more than one washer as required for the purpose shall be supplied. Tapered washers conforming to IS: 5372 & IS: 5374 shall be used for channels & beams respectively.

### 6.2.5. Welding Consumables

1. Covered electrodes (for metal arc welding of structural steel) shall conform to IS: 814.
2. The selection of welding consumable shall be as per qualified welding procedure.

### 6.2.6. Receipt & Storage of Materials.

1. Each section shall be marked for identification and each lot shall be accompanied by manufacturer's test certificate including, chemical analysis and mechanical characteristics.
2. Material inward and outward register shall be maintained by vendor and shall be provided to ITER-India representatives upon request.
3. Acceptance of the procured material will be done by ITER-India representative.

	<b>ITER-India</b> <b>(Institute For Plasma Research)</b>	Enquiry No.
		I-IEN20058

4. Welding wires and electrodes (packed in their original cartons) shall be stored and Electrodes shall be kept dry to ensure satisfactory operation and weld metal soundness.

### 6.3 Material Test


The vendor shall submit material test certificates for all the materials to be used by him in the construction of lab structure. In case, test certificates are not available or are incomplete, a check test to be performed and shall be approved by ITER-India. If material properties are not matching the requirement as mentioned in the technical specifications, such materials shall not be used in the construction.

The vendor shall ensure that all materials brought to site are duly approved by the ITER-India representative. Rejected materials shall not be used and shall be removed from site forthwith. Any material of doubtful quality for which specific tests are to be carried out as per the instruction of the ITER-India representative shall be removed from site, if they found to be not as per specification.

## 7 FABRICATION DRAWINGS

1. Fabrication and erection drawings shall be prepared on the basis of engineering drawing supplied and same shall be submitted for ITER-India approval.
2. In case of any technical disagreement, mutual consultation and discussion shall be done between the vendor and nominated committee/authority of ITER-India to resolve the disagreement. Fabrication and erection drawing shall be updated, if required after mutual consultation and discussion. However the vendor shall not proceed with the fabrication of such structures which are in technical disagreement.
3. Fabrication drawings shall mention the scale and shall convey the information clearly and adequately. Following information shall be furnished on such drawings:
  - Reference to design drawing number (along with revision number) based on which Fabrication/erection drawing has been prepared.
  - Connections and provisions wherever required.
  - Detailing of connections, splices, for required strength and erection.
  - Location, type, size and weld joint design and bolts.
  - Shapes and sizes of edge preparation for welding.
  - Details of field joints / welds.
  - Bill of materials
  - Material of structural steel, plates, , bolts, nuts and washers to be used.
4. Connections, splices and other details not shown on the design drawings shall be suitably designed and shown on the fabrication drawings based on good engineering practice developing full member strength.
5. Any substitution or change in section shall be allowed only when prior written approval of the ITER-India. Fabrication drawings shall be updated incorporating all such substitutions/changes by the vendor.



	<p style="text-align: center;"><b>ITER-India</b> <b>(Institute For Plasma Research)</b></p>	Enquiry No.
		I-IEN20058

Vendor shall incorporate all the revisions made in the design drawings during the course of execution of work in his fabrication drawings, and resubmit the drawings at no extra cost to the Owner.

## **8 FABRICATION**

### **8.1 General**

1. Fabrication of structures shall be done strictly as per Approved for Construction/ fabrication drawings
2. Prior to commencement of structural fabrication, undulations in the fabrication site, if any, shall be removed and area levelled and paved by the vendor.
3. The vendor is responsible for damages occur during fabrication.
4. Necessary care and precautions shall be taken for straightening, cutting and bending so as not to cause any damage to the structure during any such removal and replacement.
5. Any faulty fabrication pointed out at any stage of work by the ITER-India representative, shall be rectified by the vendor.
6. Tolerances for fabrication of steel structures shall be as per IS: 7215.

### **8.2Welding**


#### **8.2.1 General**

1. Welding shall be in accordance with
  - IS: 816 - Code of practice for metal arc welding in Mild Steel.
  - IS: 819: 1957 - Code for Resistance spot welding in light assemblies of mild steel.
  - IS: 1024: 1999 - Code of practice for use of welding in dynamic loaded structure.
  - IS: 1261: 1959 - Code of practice for seamless weld in mild steel
  - IS: 9595 - Metal arc welding of carbon and carbon-manganese steel.
2. The vendor shall make necessary arrangement for providing sufficient number of welding machines of the required capacity, all consumables, cutting and grinding equipment with requisite accessories/ auxiliaries, equipment & materials required for carrying out various tests such as dye penetration, magnetic particle, ultrasonic etc. Suitable care shall be taken for edge preparation, Cleaning and Grinding.
3. Adequate protection against rain, dust, shall be provided to the welding personnel and the structural members during welding operation. In the absence of such a protection no welding shall be carried out. It shall be the responsibility of the vendor to ensure that all welding is carried out in accordance with the terms of this specification and relevant BIS codes. The vendor shall provide all the supervision to fulfil this requirement.
4. Qualified and experienced welders to be provided to the meet the requirements of above mentioned codes.

#### **8.2.2Welding Processes:**

Shield metal arc welding shall be used as the welding process with suitable welding electrode. It is recommended to produce welding procedure based on site condition.



	<b>ITER-India</b> <b>(Institute For Plasma Research)</b>	Enquiry No.
		I-IEN20058

### 8.2.3 Sequence of Welding

1. As far as practicable, all welds shall be made in a sequence that will balance the applied heat of welding while the welding progresses.
2. The direction of the general progression in welding on a member shall be from points where the parts are relatively fixed in position with respect to each other towards points where they have a greater relative freedom of movement.
3. Joints expected to have significant shrinkage shall be welded before joints expected to have lesser shrinkage.
4. Welding shall be carried continuously to completion with correct number of run.
5. The vendor shall choose the welding sequence after carefully studying each case such as to minimize distortion and shrinkage.
6. The welding seams shall be left to cool slowly. The vendor shall not be allowed to cool the welds quickly by any other method.
7. For multi pass welding, before welding the following layer the formerly welded layer shall be cleaned metal bright by light and wire brushing.

### 8.2.4 Welding Technique


1. After the fusion faces are carefully aligned and set with proper gaps.
2. On completion of each run all slag and spatters shall be removed and the weld and the adjacent base metal shall be cleaned by wire brushing and light chipping. Visible defects such as cracks, cavities and other deposition faults, if any, shall be removed to sound metal before depositing subsequent run of weld.
3. While welding is in progress care shall be taken to avoid any kind of movement of the Components, shocks, vibrations to prevent occurrence of weld cracks.

### 8.2.5 Inspection & Testing of Welds

The ITER-India representative shall have access to the vendor's work at all reasonable times and the vendor shall provide him with all facilities necessary for inspection during all stages of fabrication and erection with the following objectives.

- To check the conformity with the relevant standards and suitability of various welding equipment's and their performance.
- To check whether field welding being executed is in conformity with the relevant Specifications and codes of practice.

Inspection and testing of all fabricated structures shall be carried out by the vendor as directed by ITER-India Engineer-in Charge and no separate payment shall be made, unless otherwise mentioned, for inspection and testing of welds/fabricated structures.

	<b>ITER-India</b> <b>(Institute For Plasma Research)</b>	Enquiry No.
		I-IEN20058

### 8.2.6 Visual Inspection

1. Finished welds shall be visually inspected for identification of weld defects & faults.
2. Weld defects occurring at the surface such as blow holes, exposed porosity, unused Welds etc.
3. Surface cracks in the weld metal or in the parent metal adjacent to it.
4. Damages to the parent metal such as undercuts, burning, overheating etc.
5. Profile defects such as excessive convexity or concavity, overlapping, unequal leg lengths, excessive reinforcement, incompletely filled grooves, excessive penetration beads, root grooves etc.
6. Distortion due to welding i.e., local shrinkage, camber, bowing, twisting, rotation, wariness etc.
7. Linear eccentric, angular and rotational misalignment of parts.
8. Dimensional errors.


### 8.2.7 Dye Penetration

The examination shall be done at random as directed by the ITER-India representative. Whenever such tests are directed, the tests shall be carried out on joints chosen by him. The tests shall be carried out by employing approved testing procedure in accordance with IS: 822.

### 8.2.8 Repair of faulty welds

No repair of defective welds shall be carried out without prior permission of the ITER-India representative and his approval for the corrective procedure. Welds not complying with the acceptance requirements (as specified by BIS Codes & the ITER-India), as revealed during inspection & testing of welds or erection or in-situ condition shall be corrected either by removing & replacing or as follows:

1. In removing defective parts of a weld, gouging, chipping, oxygen cutting or grinding shall not extend into the parent metal to any substantial amount beyond the depth of weld penetration, unless cracks or other defects exist in the parent metal. The weld or parent metal shall not be undercut in chipping, grinding, gouging or oxygen cutting.
2. Any fabricated structure or its component which in the opinion of ITER-India representative is defective and/or beyond any corrective action shall be removed forthwith from the site as instructed by the ITER-India representatives without any extra claim. The owner reserves the right to recover any compensation due to any loss arising out of such rejections.
3. All full penetration butt welds shall be completed by chipping/gouging to sound metal and then depositing a sealing run of weld metal on the back of the joints. Where butt welding is practicable from one side only, suitable backing steel strip shall be used and joint shall be arranged in such a way as to ensure that complete fusion of all the parts is readily obtained.
4. While welding is in progress care shall be taken to avoid any kind of movement of the Components, shocks, vibrations to prevent occurrence of weld cracks.
5. Any deviation desired from the recommended welding technique and electrodes shall be adopted only after obtaining written approval of the ITER-India representatives.

	<b>ITER-India</b> <b>(Institute For Plasma Research)</b>	Enquiry No.
		I-IEN20058

### 8.2.9 Assembly

The component parts shall be assembled and aligned in such a manner that they are neither twisted nor otherwise damaged. Proper clamps, clips, jigs and other fasteners (bolts and welds) shall be placed in a balanced pattern to avoid any distortion in the members and to ensure their correct positioning (i.e. angles, axes, nodes etc.). Any force fitting, pulling/stretching of members to join them shall be avoided. Proper care shall be taken for welding shrinkage & distortion so as to attain the finished dimensions of the structure shown on the drawings.

## 9 SITE ERECTION

### 9.1 Equipment

The suitability and capacity of all equipment used shall be to the complete satisfaction of the ITER-India representatives.

### 9.2 Storing & Handling

All steel work shall be so stored and handled at site so that the members are not subjected to excessive stresses and any damage.

### 9.3 Setting Out

One set of reference axes and one bench mark level shall be furnished to the vendor. These shall be used for setting out of structures. The vendor shall assume complete responsibility for correct setting out of all steel work, erecting it correctly as per alignment / levels shown in the drawings and plumb (verticality) of vertical members.

### 9.4 Tolerances

Maximum permissible tolerance shall be as per following:-


**Tolerance in Steel Fabrication:** Applicable tolerance in the fabrication of steel structure shall be strictly as per IS 800

**Tolerance in Erection of steel structure:** Applicable tolerances in erection of the structure shall be strictly as per IS: 800.

### 9.5 Safety & Security during Erection

1. The vendor shall comply with IS: 7205/IPR safety norms for necessary safety and adhere to safe erection practices and guard against hazardous as well as unsafe working conditions during all stages of erection.
2. During erection, the steel work shall be securely bolted or otherwise fastened and when necessary, temporarily braced/guyed to provide for all loads to be carried by the structure during erection till the completion, including those due to the wind, erection equipment & its operation etc. at no extra cost to the owner



	<b>ITER-India</b> <b>(Institute For Plasma Research)</b>	Enquiry No.
		I-IEN20058

3. No permanent bolting or welding shall be done until proper alignment has been achieved.
4. Proper access, platform and safety arrangement shall be provided for working and inspection, (at no extra cost to the owner) whenever required.
5. The vendor shall follow the IPR safety rules during execution of job.

## **10 PAINTING**


Fabricated components after ITER-India inspection shall be s epoxy primer coated prior to dispatch at ITER-India site and before/after erection. After inspection and approval, Structure shall be coated with one coat of epoxy and primer and two coat of final paint. The shade shall be matching with the existing structure

### **10.1 Primer Application**

All components and members of steel work shall be given one coat of commercially available metal epoxy primer. Primer coat can be done at the installation site also after transporting the material to avoid any surface damage during transportation. The primer coat shall be applied over completely dry surfaces (using brushes of good quality) in a manner so as to ensure a continuous and uniform film without "holidaying". Special care shall be taken to cover all the crevices, corners, edges etc. However, in areas which are difficult to reach by brushing, daubers/mops shall be used by dipping the same in paint and then pulling/ pushing them through the narrow spaces.

### **10.2 Final Paint Application**

1. After the primer is hard dry, the surfaces shall be lightly sand the primer surface with emery paper if required. and clean the dust with dry cloth. Apply two coats of compatible commercially available epoxy based paint at an interval of 16 – 20 hours. The minimum thickness of each coat shall be 75 microns (+ 10% tolerance) after drying. The vendor shall carry out the painting work in all respects with the best quality of approved material and workmanship in accordance with the best engineering practice. Particular attention shall be paid to the following:
  - Proper storage to avoid exposure & extremes of temperature,
  - Surface preparation prior to painting.
  - Mixing & thinning.
  - Application of paint and the recommended limit on time intervals between consecutive coats.
2. Painting shall not be done in frost or foggy weather, or when humidity is such as to cause condensation on the surfaces to be painted.
3. Surfaces which are inaccessible after assembly, shall receive the full specified protective treatment before assembly (this shall not apply to the interior of sealed hollow sections).
4. Steel surfaces shall not be painted within a suitable distance of any edges to be welded if the paint specified would be harmful to welders or impair the quality of the welds.

	<b>ITER-India</b> <b>(Institute For Plasma Research)</b>	Enquiry No.
		I-IEN20058

5. Welds and adjacent parent metal shall not be painted prior to de slagging, inspection and approval by the Engineer-in-Charge.

# **11 NOTIFICATION, WITNESS POINT, AUTHORISATION TO PROCEED & HOLD POINT**


ITER-India will monitor all the design, manufacturing, erection, assembly & inspection procedures on routine basis. ITER-India representatives will have access to all such procedures. The monitoring will consist of Notification point (NP), witness point (WP), Authorisation to proceed point (AP) & Hold point (HP) at vendor / sub-vendor critical steps of engineering, fabrication, assembly and inspection.

1. A notification point (NP) is a step where any critical procedure in EPC (engineering, procurement and construction) shall be brought in notice of ITER-India.
2. Authorisation to proceed (AP) is a step where vendor shall notify about any critical step in EPC whose authorisation or permission is to be taken from ITER-India to proceed further. Vendor shall wait for such an authorisation in written and shall not proceed further. However this AP is to be limited over the specific area, other procedures that are not going to be affected by this shall be carried away on regular/normal basis.
3. Witness Point (WP) is a point where any critical step is to be examined by ITER-India. Vendor shall notify such procedure in advance to the ITER-India. ITER-India representative will be available to witness such procedure and a witness certificate is to be collected by vendor by the concerned representative on the witness site itself.
4. Hold –Point (HP) is point where the any critical step is to be examined for quality, test & acceptance. Vendor shall not proceed further unless a clearance has been issued from ITER-India. In case of non –conformance of the quality and test results to the ITER-India requirement; vendor shall have a recovery plan and shall submit the same to ITER-India for approval. After getting proper clearance in the recovery plan, vendor shall only proceed further.

Following activities is to be monitored in sequence:-

Activities	Monitoring Point
Engineering drawing review and fabrication drawings submitted for approval	HP
Testing of Raw Materials	HP
Welder Qualification and Welding procedure Qualification	WP
Factory acceptance test of sub-assemblies/structure elements	WP



	<b>ITER-India</b> <b>(Institute For Plasma Research)</b>	Enquiry No.
		I-IEN20058

Delivery of structural element /sub-assemblies	AP
Start of fabrication/erection work at IPR	AP
Phase inspection and testing	HP&WP
Final Acceptance Test	WP

## 12 INSPECTION AND TESTING

Inspection procedure is to be submitted by the vendor detailing the inspection plans for dimensional accuracy, visual inspection, Load testing or any specific test required as per specification. Vendor shall maintain a record of all the inspection and testing's done. Vendor shall detail the inspection plan phase wise including witness, review and hold point mentioned by ITER-India representatives. Phase wise inspection would involve following:

1. Review of detailed fabrication drawing
2. Inspection of Raw material, receipt and quality test certificate of the same in case of purchase.
3. Review of manufacturing process.
4. Review of assembly/erection plans.
5. Inspection for 100% dimensional accuracy, visual inspection of structural elements and assemblies.
6. Review of storing, handling and transportation plan of construction elements.
7. Review for the test certificates and completion documents before final acceptance.
8. A review of load test as per IS conducted

## 13 COMPLETION DOCUMENTS


On completion of work, the vendor shall submit to the Purchaser the following documents:

1. The technical documents according to which the work was carried out.
2. Copies of the 'As built" drawings showing thereon all additions and alterations made during the fabrication. If there is no modification made on the approved drawing, same shall be considered as an "As built" drawing
3. Material test certificates for all the base material and welding consumables.
4. Stage inspection and final inspection report
5. Non-conformity Reports (if any)

## 14 FINAL ACCEPTANCE TEST

Following test shall be done post completion of job at the time of final acceptance:



	<b>ITER-India</b> <b>(Institute For Plasma Research)</b>	Enquiry No.
		I-IEN20058

1. Visual Inspection of erected structure with safety hand rails.
2. Dimensional check over erected structure to ensure field tolerances, setting out, ground clearances, misalignments, levelling etc. are within allowable limit as determined by ITER-India in engineering drawings.
3. All field welds, if required shall be having visual examination or LPT.
4. Load test shall be performed as per IS 800 code.

#### 15 **HOUSE KEEPING**

Vendor shall ensure that a high degree of housekeeping is maintained and shall ensure good housekeeping procedures.

All Scraps and debris has to be removed/disposed of from the working areas to identified location(s).

1. Unused/Surplus Cables, Steel items and steel scrap lying scattered at different places within the working areas are removed to identify location(s).
2. All wooden scrap, empty wooden cable drums and other combustible packing materials, shall be removed from work place to identified location(s).
3. Roads shall be kept clear and materials like: pipes, steel, and shall not be allowed on the roads to obstruct free movement of men & Machineries.
4. Fabricated steel structural, pipes & piping materials shall be stacked properly for erection.
5. No parking of trucks / trolleys cranes and trailers etc. shall be allowed on roads which may obstruct the traffic movement.
6. Utmost care shall be taken to ensure over all cleanliness and proper upkeep the working areas.
7. Only properly designed steel scaffolding materials to be used for working at heights more than 3.0 Meters. Double scaffolding using wooden structure may be allowed for working at height less than 3.0M.

#### 16 **DELIVERY SCHEDULE:**

Work shall be completed within a period of **Six months** from the date of release of Purchase order.

**Front view**  
Scale: 1:50

**Section view A-A**  
Scale: 1:50

**Section cut B-B**  
Scale: 1:1

**Section cut C-C**  
Scale: 1:5

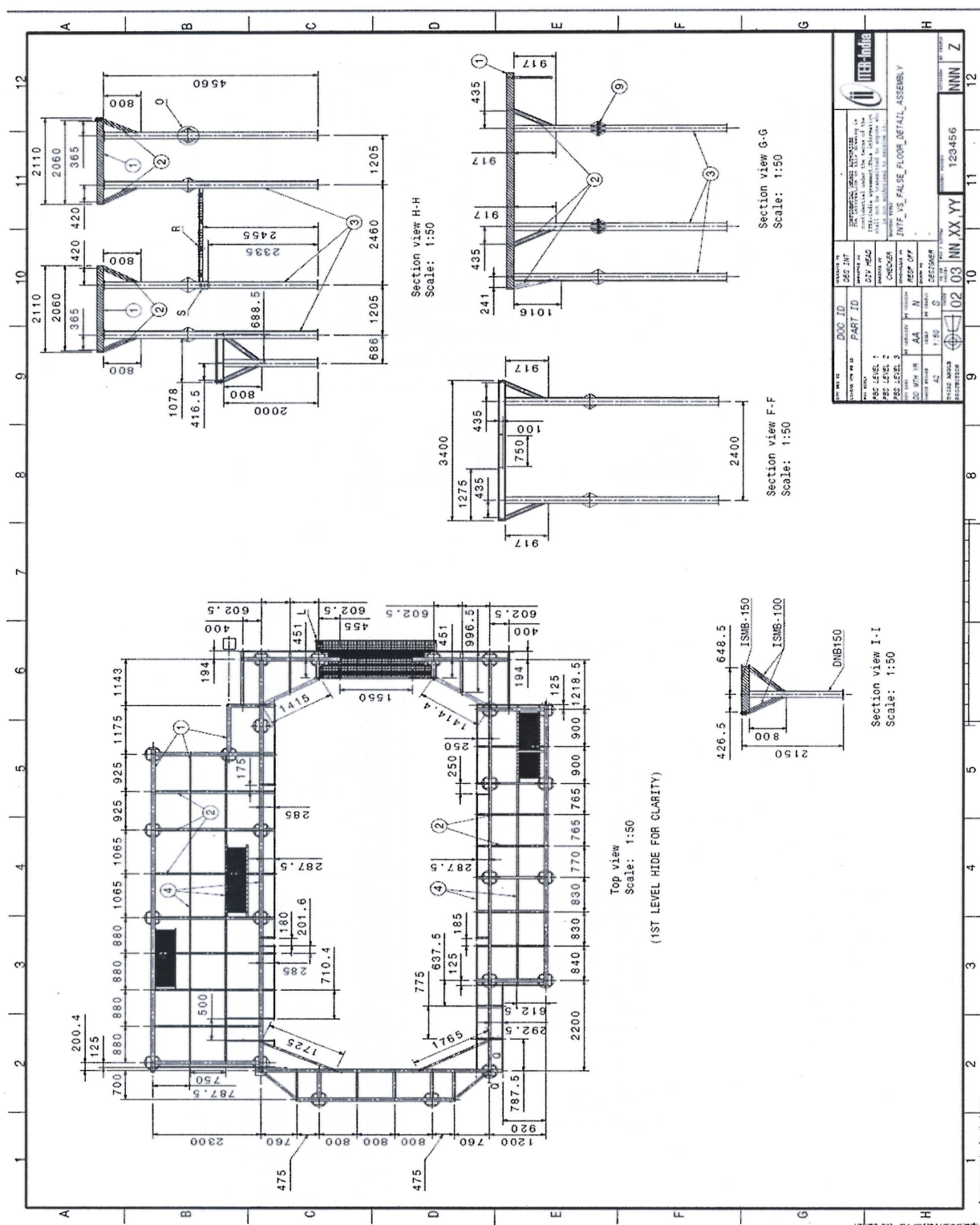
**Section cut D-D**  
Scale: 1:2

**Section cut E-E**  
Scale: 1:5

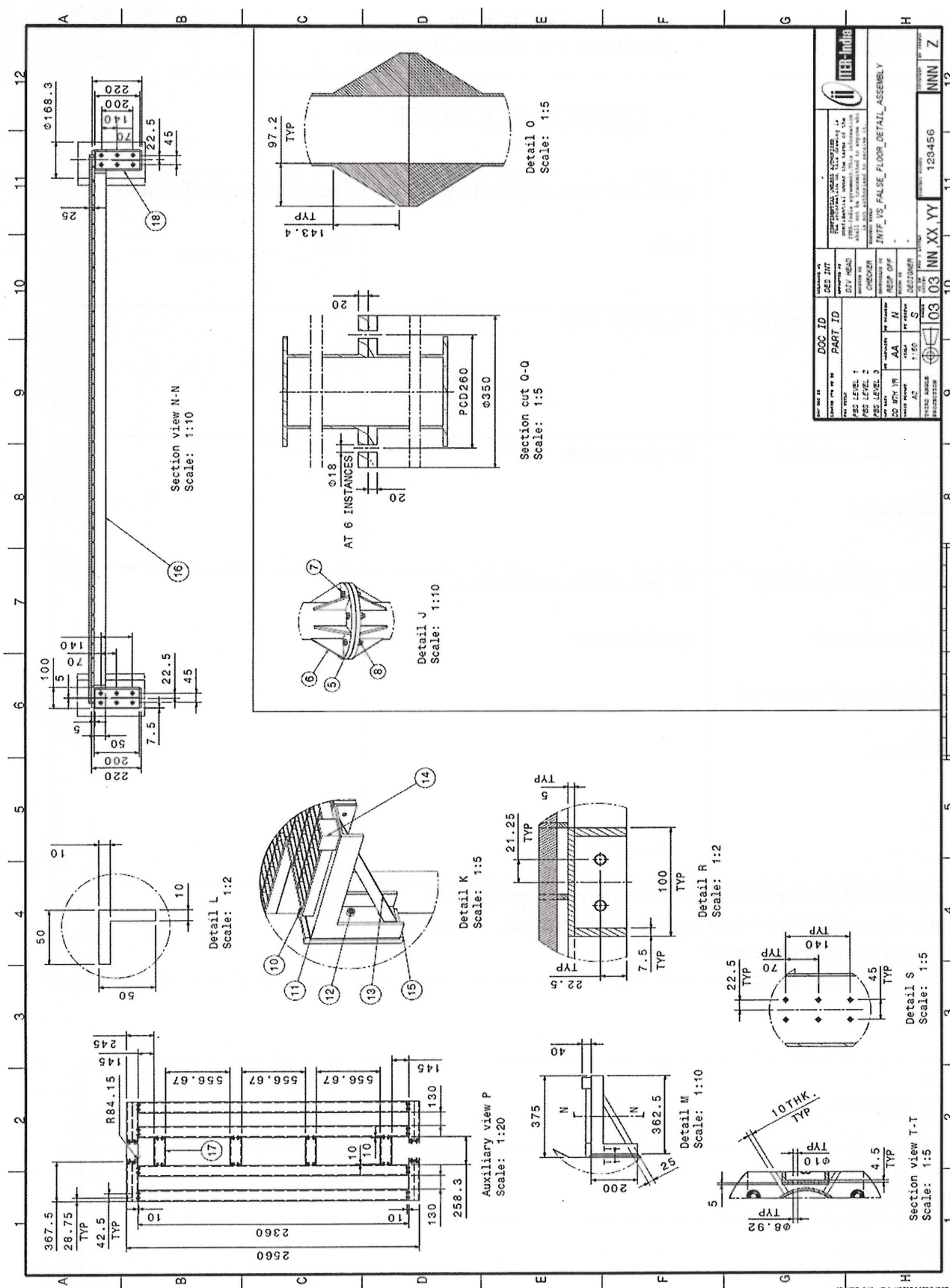
**Isometric view**  
Scale: 1:100


**Parts List Table:**

Sr. No.	Part Name	Remarks
1	I-BEAM ISMB 150	
2	I-BEAM ISMB 100	
3	CIRCULAR HOLLOW BAR 150	
4	EQUAL LEG ANGLE 25X25X5	
5	CIRCULAR FLANGE OD 350MM	
6	STIFFENER 100X150X5MM THK.	
7	ISO 4014 M16X70 HEXAGONAL HEAD BOLT	
8	ISO 4032 M16 NUT	
9	ISO 7089 6x12 WASHER	
10	ALUMINIUM GRATING	
11	C CHANNEL 1	
12	ISO 4762 M6X30 HEXAGONAL HEAD CAPSCREW	
13	STIFFENER	
14	STOPPER	
15	C CHANNEL SUPPORTING PLATE	
16	C CHANNEL 2	
17	C CHANNEL 3	
18	C CHANNEL 4	







	<b>ITER-India</b> <b>(Institute For Plasma Research)</b>	Enquiry No.
		I-IEN20058

**COMPLIANCE SHEET**

Description	Specifications required by ITER-India	Specifications offered by M/s _____
Load carrying capacity of structure	As per IS 800	
Quality and welding requirements	As per section 6.1	
Modular structure with MS columns and Platform's and beams of aluminium.	As per attached technical specification	
We have read and understood the technical requirements, details & specifications and testing requirements. We agree to abide and provide the same?		Yes / No

Bidder Signature		
Name of the signatory & Title	Name	Title
Bidder's Official seal		
Place & Date	Place	DD-MM-YYYY

Annexure-II

(to be printed on letter head)

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**Self-Certification under preference to Make in India order**  
**Certificate**

In line with Government Public Procurement Order No. P-45021/2/2017-PP (BE-II) dated 16.09.2020 and its amendments, we hereby certify that we M/s \_\_\_\_\_ are local supplier meeting the requirement of minimum local content i.e., \_\_\_\_\_.% as defined in above orders for the material/Items/Services against ITER-India,IPR Enquiry/Tender No.....dated..... Details of location at which local value addition will be made as follows:

\_\_\_\_\_.

We also understand, false declarations will be in breach of the code of integrity under rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151(iii) of the General Financial Rules along with such other actions as may be permissible under law.

Thanking You

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**Signature with date:**

**Name:**

**Designation:**

**Official Seal**