

**TERMS & CONDITIONS FOR PRE-FAB. M/C & FAB. ONLY OF DRAFT TUBE CONE, DRAFT TUBE ELBOW LINER & PIT LINER**

The tender documents can be downloaded from our web site [www.bhel.com](http://www.bhel.com) or [www.bhelhwr.co.in](http://www.bhelhwr.co.in). Before submitting the tender, the bidders are required to go through the details mentioned below. Intending indigenous bidder may remit **Tender Fee of Rs. 2,000.00** against the tender, if documents (in hard copies) are required from BHEL. Bidder requiring tender documents in hard copies should remit currency in the form of Cash (as permissible under Income Tax Act) / Pay Order / Demand draft. **Earnest Money Deposit (EMD) of Rs. 200,000.00 is required to be submitted by the vendors against this tender. If Earnest Money Deposit (EMD) is not submitted along with offer, then the offer may be rejected.**

**This tender enquiry is for domestic/indigenous vendors only.**

Please submit Tender Fee (if required) in an envelope super-scribed with bold letters. Tender Fee (if required) is to be submitted with Part-I.

**The date for opening of tender shall be 21.08. 2021.** Tenders will be received up to **1.45 P.M.** on **21.08.2021** and opened on the same day at **2.00 P.M.** in the Tender Room. **Please note that tender received after due date & time (1.45 PM on 21.08.2021) will not be opened.** BHEL will not be responsible for any type of postal / courier delay / incomplete information from vendor.

Bids shall be opened at 2.00 PM on the due date in the presence of authorized representative of the bidders who may like to be present. The authorized representative should bring authority letter from their parent company for the specific tender no. attending the bid opening.

**The item name and drawing no. mentioned in the enquiry is for reference & will be available for ordering. A sample of Combined Bill of Materials and all reference drawings are also enclosed for having a general idea of the tender.**

- SCOPE OF WORK:** -This Enquiry is for PRE-FAB. M/C & FAB. only of Draft tube cone, Draft tube elbow liner & pit liner with BHEL Material as per drg., QP & other specifications exclusively with BHEL Material.

Sl. No.	Item Description	Drg. No.	Qty.
1	DRAFT TUBE CONE	0201011840200	2No.
2	DRAFT TUBE ELBOW LINER (FAB)	0201021840201	2 No.
3	DRAFT TUBE ELBOW LINER (FAB)	0201021840202	2 No.
4	DRAFT TUBE ELBOW LINER (FAB)	0201021840203	2 No.
5	DRAFT TUBE ELBOW LINER (FAB)	0201021840204	2 No.
6	DRAFT TUBE ELBOW LINER (FAB)	0201021840205	2 No.
7	DRAFT TUBE ELBOW LINER (FAB)	0201021840206	2 No.
8	DRAFT TUBE ELBOW LINER (FAB)	0201021840207	2 No.
9	PIT LINER (WELDED ASSEMBLY)	0202072150201	2 No.
10	PIT LINER (WELDED ASSEMBLY)	0202072150202	2 No.

**DT LINER:**

- a) ALL SECTIONS ARE TO BE PROVIDED ON LAYOUT ASSLY. OF DESPATCHABLE D.T. SEGMENTS TO BE PROVIDED AS PER QA PLAN AS PER T.R.-9 OF DRG.
- b) ALL 7 PARTS (DRG.) OF D.T. ELBOW LINER ARE TO BE FABRICATED FROM SAME VENDOR.

**Hence, L1 status evaluation for the items at Sl. Nos. 3 to 8 above will be decided accordingly.**

- c) ASSLY & WELDING OF ALL TRANSPORT STAYS, STIFFNERS, LIFTING LUGS IS IN SCOPE OF VENDOR AS PER T.R- 12 OF DRG.

**D.T CONE:**

- a) ASSLY & WELDING OF ALL TRANSPORT STAYS, STIFFNERS, LIFTING LUGS IS IN SCOPE OF VENDOR AS PER T.R. OF DRG.
- b) ASSLY OF MANHOLE FRAME WHICH COMPRISES OF ITEM NOS. 11, 12, 27, 28, 29,30 & 31 OF ASSLY DRG. 02010118402 WILL BE IN SCOPE OF BHEL AND VENDOR WILL SUPPLY DT CONE WITHOUT MANHOLE FRAME.

**PIT LINER:**

- a) BOTH PARTS (DRG.) OF PIT LINER ARE TO BE FABRICATED FROM SAME VENDOR.  
**Hence, L1 status evaluation for the items at Sl. Nos. 9 & 10 above will be decided accordingly.**
- b) ASSLY. & WELDING OF ALL TRANSPORT STAYS, STIFFNERS, LIFTING LUGS IS IN SCOPE OF VENDOR AS PER T.R. OF DRG.

2.1 CLEANING OF JOB AFTER S/R (IF ANY) AT BHEL HARIDWAR WORKS IS IN SCOPE OF VENDOR.

2.2 PAINTING IN SCOPE OF BHEL HARIDWAR.

2.3 FINAL ACCEPTANCE OF JOB AFTER SUCCESSFUL CONTROL MARKING AT BHEL HARIDWAR.

- **TOTAL LOAD FOR THE Enquiry (Approximately) = 93.290 MT.**
- The rate (s) should be quoted in Rupees/Kg. Common rates for all the items covered in this particular enquiry to be quoted.
- Only BHEL/LLOYD approved qualified welders/machinist must be employed on the job.
- Only BHEL approved Brands of Electrodes / consumables/Tools to be used.
- Any assembly, welding & NDT work as per drg/QP, if reqd. after SR/SB including customer clearance shall be done by supplier at BHEL.
- Vendor should submit manufacturing plan incl. Weld Plan & Technology support plan to Welding Technology & get it cleared prior to start of assembly.
- Vendor should get the fit up of weld joints checked from Welding Technology prior to start of the welding.
- Cleaning of parts, removal of mill scale from components prior to assembly will be in scope of vendor.
- CHP Clearance may be obtained from NTPC/LLOYD/RITES/NPC at party's end.
- Final Assembly shall undergo cleaning to ensure that all parts are free from dents, mills, spatters.
- Customer's seal (if Any on supplied Material) to be transferred.
- Copies of the relevant certificates to be supplied to the receiving shop.

**2. VALIDITY: -**

The validity of offers by vendors should be at least for a period of **90 days for this enquiry from the date of enquiry opening.**

**3. SUBMISSION OF OFFERS: -**

The offer is to be submitted in **two parts**.

- 3.1 The tenders shall be submitted in **two parts** in separate sub-envelopes clearly super scribing type of bid, tender no., due date and the name of vendor with full contact details.

**Part I** – Tender fee (if hard copy insisted from BHEL), Pre qualifying conditions (PQR), Techno Commercial Bid (It should be the copy of Price Bid without the price part) along with the filled in, signed and stamped annexures uploaded along with the Tender Document.

**Part II** – Price Bid.

Part I –

- A. Will be opened on the date and time specified in the tender notice in the presence of those vendors who wish to attend.
- B. Will cover the reply of all points of the enquiry except prices in sealed envelop superscribing on the envelop TECHNO-COMMERCIAL OFFER, the enquiry reference number and date of opening etc.

Part II - Price Bids along with supplementary price bids, if necessary, will be opened at a later date of only those bidders whose PQR and Techno Commercial bid will be found acceptable. The price bid is to be submitted in a format as per Annexure-A duly signed by the authorised person of the firm with rubber stamp in the space provided.

- 3.2 Part-II will comprise of price bid in separate sealed envelop super-scribing PRICE-BID, the enquiry reference number and date of opening etc.
- 3.3 All the sub-envelopes (Part-I & Part- II) to be put in a single covering envelope Indicating Tender no., due date and the name of vendor, e-mail id, with full contact details. Offer should be complete in all respect (i.e. Part-I & Part-II).
- 3.4 Both the sealed envelops (Part-I & Part-II) should be placed together in a single envelop duly sealed super scribing on the envelop "TWO PART BID" with enquiry reference number and date of opening of tender. BHEL will not be responsible for any type of delay in receipt of the tender.
- 3.5 BHEL reserves the right to reject any or all the tenders either in full or part thereof without assigning any reasons thereof.

**4. DELIVERY: -**

F.O.R.: HEPP, BHEL Haridwar.

**5. DELIVERY SCHEDULE: -**

Sl. No.	Item Description	Drg. No.	Qty.	Delivery
1	DRAFT TUBE CONE	0201011840200	2Nos.	Within 45 days from last BHEL material sent
2	DRAFT TUBE ELBOW LINER (FAB)	0201021840201	2Nos.	Within 60 days from last BHEL material sent
3	DRAFT TUBE ELBOW LINER (FAB)	0201021840202	2Nos.	Within 60 days from last BHEL material sent
4	DRAFT TUBE ELBOW LINER (FAB)	0201021840203	2Nos.	Within 60 days from last BHEL material sent
5	DRAFT TUBE ELBOW LINER (FAB)	0201021840204	2Nos.	Within 60 days from last BHEL material sent

6	DRAFT TUBE ELBOW LINER (FAB)	0201021840205	2Nos.	Within 60 days from last BHEL material sent
7	DRAFT TUBE ELBOW LINER (FAB)	0201021840206	2Nos.	Within 60 days from last BHEL material sent
8	DRAFT TUBE ELBOW LINER (FAB)	0201021840207	2Nos.	Within 60 days from last BHEL material sent
9	PIT LINER (WELDED ASSEMBLY)	0202072150201	2Nos.	Within 45 days from last BHEL material sent
10	PIT LINER (WELDED ASSEMBLY)	0202072150202	2Nos.	Within 45 days from last BHEL material sent

**6. INSPECTION: -**

- The inspection will be carried out by BHEL/BHEL nominated inspection agency at Party's works. All facilities and equipment's, calibrated instruments and standard gauges required for inspection shall be provided by the vendor during inspection. In some cases, inspection by customer's representatives like NTPC/RITES etc. (excluding NPC) may also be carried out at Party's works and CHP clearance may be obtained. No additional charges will be paid on this account.
- The party is to follow system for material control, if applicable, as per BHEL Quality Control system.
- Identification marks shall be punched on each item by the vendor i.e. Purchase Order No., Drawing No., IR No. etc.
- Aesthetic appearance is to be maintained as per drg. requirement.
- Ordering shall be done on BHEL Haridwar agreed / approved sub-contractors only.
- Inspection by BHEL/BHEL nominated inspection agency as per drawing /Standard and quality plan requirements.
- Quality plan no. QP/QA/20210055 rev 00 dated 27.07.2021 is attached, which is to be followed.
- Remote inspection shall be preferred in place of physical inspection by BHEL/BHEL nominated inspection agency (Due to COVID 19 situation). Remote inspection guidelines are attached. Sub-contractors to offer both remote inspection and physical inspection. BHEL reserve the right to select anyone.

**7. GUARANTEE CERTIFICATE: -**

The vendor shall warrant that the supplied fabricated assemblies comply fully with the drawings and other technical conditions. If the fabrications/items are found defective owing to faulty workmanship/incomplete work within a period of eighteen (18) months from the date of dispatch, the vendor shall make good of it/replace the same free of cost. Alternatively, the rework/replacement charges will be recovered.

**8. PAYMENT TERMS: -**

- 8.1 90% after acceptance & final clearance of SRIV.10% after FTS and final accountal of material.
- 8.2 No packing and forwarding charges will be paid extra.
- 8.3 In case of rejection, total cost of material will be recovered in case of BHEL Material and no labour cost will be paid.

**9. LD CLAUSE: -**

@ 0.5% per week subject to max 10% for the delayed portion of supply. The entry date mentioned by CISF on the challan at BHEL material gate will be taken as material receipt date.



**10. GST: -**

- As applicable against documentary proof. Mention HSN/SAC code & applicable %age of GST.
- 10.1 The bidder to specify in their offer (part 1 bid) the category of their registration under GST like Registered, Unregistered and composite dealer.
  - 10.2 The provisional GST registration number of Bharat Heavy Electrical Ltd, Heavy Electricals Equipment Plant, Ranipur, Electricals Equipment Plant, Ranipur, Haridwar is '05AAACB4146P1ZL' with state Code as '05' and State Name as 'Uttarakhand'.
  - 10.3 Please quote our provisional GST registration number in all invoices raised for supply of goods and services under GST regime and also ensure filing of timely return and payment of tax and compliance of other applicable provisions on supplier under GST regime.
  - 10.4 No GST will be reimbursed to unregistered or composite dealer. In the event, any GST is quoted by composite dealer, the same shall be added to the cost of supply in evaluating the bid.
  - 10.5 Since, input credit of GST will be available to BHEL-Haridwar only after correct filing of return and payment of applicable GST by supplier, reimbursement of GST shall be made by BHEL Haridwar on matching of vendor inputs at GST portal, ensuring availability of input credit to BHEL Haridwar. Payment of GST will be made to vendor after matching of input credit and vendor to ensure submission of their invoices along with consent to accept payment of tax after such matching in all cases where bills are submitted directly to BHEL-Haridwar or through bank or under LC or through any other mode.
  - 10.6 In the event of any disallowance of input credit or applicability of interest or any other financial liability arises on BHEL-Haridwar due to any default of supplier under GST, such implication shall be to supplier account.
  - 10.7 In the event of any change in the status of vendor after submission of the bid but before the supply, GST applicable at the time of supply or in the bid, based on the registration status of the vendor, whichever is lower shall be payable.
  - 10.8 Where ever applicable If PAN (Permanent Account Number) of the recipient is not available, income tax is deductible either at the normal rate or at the rate of 20 percent, whichever is higher as per Section 206AA of Indian Income Tax Act 1961.

**11. EXTRA/LESS RATES: -**

- In case, extra/less work is required due to change in Drawing / any deviation in fabricated weight at a later stage (duly verified by our Engineering Dept.), extra charges may be paid/deducted and purchase order will be amended.
- In case extra/less work is required due to change in Drawing/ technology / extra joints (owing to non-availability of required size of raw material) / defects like laminations if any on BHEL supplied plates etc. / any deviation in fabricated weight (duly verified by WT), extra/less charges will be paid and purchase order may be amended accordingly.
- Amendment due to changes in drg. /CBOM weight will be applicable only if changes are made before supply of material or changes which are under process is provided to vendor in writing by Engg. or AIX before supply of material by vendor.

**12. Reverse Auction: -**

"BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on [www.bhel.com](http://www.bhel.com)) for this tender. RA shall be conducted among the techno-commercially qualified bidders.

Price bids of all techno-commercially qualified bidders shall be opened and

same shall be considered for RA. In case any bidder(s) do(es) not participate in online Reverse Auction, their sealed envelope price bid along with applicable loading, if any, shall be considered for ranking.”

Following are some guidelines:

- Start price for RA to be L1 of e-bid/ sealed envelope price bids.
- Minimum two techno-commercially qualified bidders are required to conduct RA.
- Wherever six or more techno-commercially qualified bidders are available, RA would be conducted amongst first 50% of the bidders arranged in the order of prices from lowest to highest. Number of bidders eligible for participating in RA would be rounded off to next higher integer value if number of techno-commercially qualified bidders is odd (e.g. if 7 bids are technically qualified, then RA will be conducted amongst lowest four bidders). However, there will be no elimination of bidders who are MSE or qualifying under PPP-MII Order, 2017.

**For detailed terms and conditions of RA guidelines, kindly refer [www.bhel.com](http://www.bhel.com).**

**All vendors will be assessed on total cost to BHEL basis that includes freight, taxes, ITC etc.**

**13. Following MSE conditions shall be followed: -**

MSE Suppliers can avail the intended benefits only if they submit along with the offer, attested copies of either EM II certificate having deemed validity (five years from the date of issue of acknowledgement in EM II) or valid NSIC certificate or EM II certificate along with attested copy of a CA certificate (Format enclosed at annexure-1 where deemed validity of EM II certificate of five years has expired) applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the date of bid opening (Part 1 in case of two part bid). Non submission of such documents will lead to consideration of their bid at par with other bidders. No benefit shall be applicable for this enquiry if any deficiency in the above required documents is found or the requisite documents are not submitted before price bid opening.

\* Any new supplier will be eligible for registration with BHEL as MSE supplier provided at least any one of the following documents are submitted along with application for registration: -

- a. Valid NSIC Certificate or
- b. Entrepreneurs' Memorandum part II (EM II) certificate (valid based on deemed validity of 5 years) or
- c. EM II certificate along with attested copy of CA Certificate (as per prescribed format at annexure 1) applicable for the relevant financial year (latest audited), where the deemed validity of EM II is over. However, credentials of all MSE supplier will be verified before advancing the intended benefits.

\* MSE vendors claiming SC/ST status will have to submit SC/ST certificate of the Proprietor from competent authority. Attested (notarized or attested by Gazetted officer) copy to be submitted along with the offer.

\* In case techno-commercial accepted vendors include MSE source and their prices (based on landed cost to BHEL) are within the price band of 15% w.r.t. L-1 vendor, then BHEL can offer 25% of quantity of respective item (rounded off to nearest number) to MSE vendors at L-1 price and in case, more than one MSE vendor is in 15 % band and the same is accepted by more than

one MSE vendors then 25% quantities of respective items will be considered for ordering on proportionate basis amongst MSE vendors.

\* While distributing the 25% quantity amongst MSE vendors the decimal points in quantity shall be ignored for all the vendors except the L-1 amongst MSE vendors. Balance quantity after allocating the quantity to other MSE vendors ignoring the quantities in decimal, shall be given to L-1 (amongst MSE) vendor. However, if there are more than one MSE vendor at the same price level than preference for additional quantities due to ignoring off the decimal (as mentioned above) shall be given to the vendor offering favourable terms to BHEL and if the conditions offered are also same then preference will be given to the vendor having high SPR rating.

\* In case there are more than one MSE vendors (with different landed cost to BHEL) within 15% price band of lowest bidder and quantity to be offered is 1 no. only, then preference shall be given to the MSE vendor with lowest landed cost.

\* In case there are more than one MSE vendors (with same landed cost to BHEL) within 15% price band of lowest bidder and quantity to be offered is 1 no. only, then preference shall be given first, based on the favourable terms in the bid and in case terms are also same, the vendor with high SPR rating shall be given preference.

**14. PRICE VARIATION CLAUSE:** - No PVC is applicable for this enquiry.

**15. Bank Guarantee/Indemnity Bond:** - 25% Bank Guarantee and 75% Indemnity Bond for the value of materials to be given by vendor for free issue materials. Material value will be calculated on PPMIV/Challan value basis.

**16. GENERAL INSTRUCTIONS:** -

- 16.1 No further sub-contracting to third party or sister concern by the sub-contractor is allowed Without prior permission of BHEL. If found guilty, will be debarred.
- 16.2 BHEL reserves the right to suspend/cancel the PO/Enquiry unilaterally without any financial repercussions, if Sub-contractor's performance is not found to be satisfactory.
- 16.3 BHEL reserves the right to revise the drawing after placement of purchase order. The prices in the purchase order will be amended according to revised drawing.
- 16.4 Subsequent ordering shall be done based on performance and execution of orders in time as per PO. Delivery.
- 16.5 In the course of evaluation, if more than one bidder happens to occupy L1 status, effective L1 will be decided by soliciting discounts from respective L1 bidders. In case more than one bidder happens to occupy the L1 status even after soliciting discounts, the L1 bidder shall be decided by toss/draw of lots, in the presence of respective L1 bidder(s) or their representative(s). Ranking will be done accordingly. BHEL's decision in such situation shall be final and binding.
- 16.6 Vendor must fill in the rate per Kg. in Annexure-A and put in the Price Bid envelop.
- 16.7 EMD submission may be waived for Central/State-PSUs/Government departments.
- 16.8 MSE suppliers are exempted for submission of EMD & Tender Fee.
- 16.9 As per the Office Memorandum F.No. 1(2)(1)/2016-MA dated 09.02.2017 issued from the office of Development Commissioner (micro, small & medium enterprises), "Traders and agents should not be allowed to avail the benefits extended under the pp policy." in view of this, it is clarified that benefits of MSE (such as EMD waiver, tender fee exemption, price preference, payment preference etc.) will be given only to those MSE vendors who are manufacturers of offered items against the NIT. No MSE benefits shall be provided to agents / stockists / dealers / traders etc.

- 16.10 Approved Vendors registered in PMD AF-031 in HEEP, BHEL Ranipur are exempted from submission of EMD. Vendors may claim the same in their offers.**
- 16.11 Open tender is hoisted on the websites and no hard copy of document is provided by BHEL, no tender fee shall be insisted upon from the bidders.
- 16.12 Central / State – PSUs / Government departments are exempted from submission of EMD subject to approval by BHEL management.
- 16.13 Please refer general instructions and standard terms & conditions (GISTC) for bidding against tender enquiry (Version December-2020, Rev: 05).the bidder/vendor must ensure compliance of these GISTC (Version December-2020, Rev: 05).
- 16.14 Unregistered vendors may please visit our site **www.bhel.com** for filing up the Supplier registration Form against PMD No. AF031.
- 16.15 Documents submitted with the offer/bid by the bidder shall be signed and stamped in each page by authorized representative of the bidder.**
- 16.16 PQR uploaded with the tender document is to be submitted along with the Techno-Commercial offer (PART-I).**  
**Note :- Offer shall be entertained only after submission of duly filled, signed and stamped PQR and relevant documents. Offers of the vendor(s) not submitting this Annexure may be ignored.**
- 16.17** The evaluation currency shall be INR (Indian Rupee).
- 16.18 The Bidder declares that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder(s). This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding-process.  
 In case, the Bidder is found having indulged in above activities, suitable action shall be taken by BHEL as per extant policies/ guidelines.
- 16.19 For this procurement, Public procurement (preference to Make in India), Order 2017 dated 04.06.2020 shall be applicable.  
 For this procurement, the local content to categorize a supplier as Class-I local supplier/ Class II local supplier/Non-local supplier and purchase preference to Class I local supplier, is as defined in Public procurement (preference to Make in India), Order 2017 dated 04.06.2020 issued by DPIIT. In case of subsequent orders issued by the nodal ministry, changing the definition of local content for the items of NIT, the same shall be applicable even if issued after issue of this NIT, but before opening of part-II bids against this NIT.  
 As defined under public procurement (Make in INDIA) notification dated 04.06.2020, only the 'Class-I local supplier' and 'Class-II local supplier' are eligible to bid against this enquiry. Hence bids of non-local supplier (if any) will not be considered.  
 Accordingly, the 'Class-I local supplier' / 'Class-II local supplier' at the time of tender, bidding or solicitation shall be required to indicate the percentage of local content and provide self-certification that the item offered meets the local content requirement for 'Class-I local supplier' / 'Class-II local supplier' and shall give details of the location(s) at which the local value addition is made.  
 Procurements where the Estimated value to be procured is less than Rs. 5 lakhs shall be exempted from Public Procurement (Preference to Make in India) Order 2017 dated 04.06.2020.
- 16.20 Vendor Contract clause regarding GST ITC and provision for E-Invoices:  
 (i) E-Invoicing under GST is being implemented w.e.f. 01.10.2020 for all the taxable persons having turnover more than Rs. 100 Cr. It has been specified by the Govt. that it is

mandatory to mention a valid unique Invoice Reference No. (IRN) and QR code as generated from Govt. portal on a Tax Invoice. Based on such information, GST ITC as claimed by BHEL in GST Returns shall be matched with the corresponding details uploaded by supplier in E-Invoicing System.

- (ii) In case the vendor /contractor delays or fails to provide all the documents as per the Purchase order / Work Order at the time of submitting Tax invoice to BHEL, any subsequent financial loss to BHEL on account of vendor/contractor shall be to vendor's / contractor's account. BHEL has further right to take necessary steps to protect its interest at the time of release of payment. This further requires inclusion of IRN and QR code on tax invoice as announced by Govt. of India w.e.f. 01.10.2020.
- 16.21 **Bidder to necessarily submit duly filled in, signed and stamped Annexures** (attached alongwith the tender document).
- 16.22 In case of ordering against the tender, vendor should submit their invoices against goods and services immediately after supply of goods & services but not later than 30 days from the invoice date. In case of delay, consequential losses like loss of input credit and non-availability of concessional forms etc. shall be to the vendor account.
- 16.23 The bidders against open tender will necessarily have to obtain class – III DSCs. Procedure for application is available on [www.bhel.com](http://www.bhel.com).
- 16.24 **RECTIFICATION:-** Any defect (noticed at Shop) arising out of the fabrication/machining done by the Sub-Contractor, will have to be rectified or items replaced by the sub-contractor within 10 days at their own cost. Otherwise BHEL will be free to take necessary action as deemed fit and consequence/cost of the same will be to subcontractors-account.

**17. Transportation: -**

BHEL will send raw material to vendor works on freight paid basis and vendor to deliver fabricated/machined items to BHEL Haridwar at their own cost.

**18. SCRAP: -**

- Generated scrap is to be retained by the sub-contractor. This scrap is chargeable. The scrap rate will be calculated based on the monthly market scrap price Published in MSTC Bulletin/any other document under category of scrap MELTING SCRAP. The date of receipt of material will be considered for calculating the scrap value as applicable for that month. The calculated monthly price for charging scrap will be rounded off to two decimal places of Rupee. GST charges on scrap shall also be applicable.
- BHEL would recover the amount of GST and Trade Tax as applicable from the sub-contractor's account in lieu of scrap retained by them. The difference between raw material weight and finalized weight shall be considered for the calculation of scrap generation.
- A 3% invisible cutting allowance shall be given on the finished weight.

**19. OPTION CLAUSE: The Purchaser reserves the right to increase or decrease the quantity to be ordered up to 25 percent of bid quantity at the time of placement of contract. The purchaser also reserves the right to increase the ordered quantity by up to 25% of the contracted quantity during the currency of the contract at the contracted rates. Bidders are bound to accept the orders accordingly.**

**Against vendor's replies, BHEL reserves the right to ask for more information/ documents / clarifications. Vendor's offer shall not be considered if vendor fails to furnish the document / information / clarifications as mentioned above or doesn't meet the acceptance criteria.**

Amendments/Corrigendum, if any, will be hosted on our web site only. Other terms and conditions will be as per tender documents.

Any vendor who is under hold (for the item)/ delisted/ banned with BHEL on date of opening of Part – 1 will not be allowed to quote for this tender. In case their offer is received, it may be out rightly rejected.

**In view of Covid-19 and present situation the Tender Document, Drawings, P.O. copy etc. shall be sent by e-mails and shall not be sent in hard copies. Vendors to kindly note that the details sent by e-mail shall be considered for delivery against the finalized contrac(s)/ P.O's placed .**

**Tenders will be received in Tender Box kept in Tender Room and should be addressed to:  
THE HEAD OF MATERIAL MANAGEMENT,  
Heavy Electrical Equipment Plant,  
Bharat Heavy Electricals Limited,  
HARIDWAR-249403 (Uttarakhand), INDIA.**

Unregistered vendors may please visit our site [www.bhel.com](http://www.bhel.com) for filing up the Supplier Registration Form.

**KINDLY READ "TERMS & CONDITIONS FOR PRE-FAB. M/C & FAB. ONLY OF DRAFT TUBE CONE, DRAFT TUBE ELBOW LINER & PIT LINER". QUOTATION NOT IN ACCORDANCE WITH THE INSTRUCTIONS ARE LIABLE TO BE DISQUALIFIED AND IGNORED. Kindly submit Checklist of T&C of this enquiry attached with tendor document.**

**Annexure - A**

**PRE-FAB. M/C & FAB. ONLY OF DRAFT TUBE CONE, DRAFT TUBE ELBOW LINER & PIT LINER**

OpenTender Enquiry No.: X/6620/2021/0055/C/1

<b>MATERIAL BY</b>	<b>RATE (Rs. PER Kg.)</b>
BHEL MATERIAL (BM)	

Authorised Signature :

(with date & seal of company)

Name of Supplier :-

**TERMS AND CONDITIONS FOR Enquiry No.X/6620/2021/0055/C/1**

SL.	TERMS	VENDOR'S ACCEPTANCE/ REMARKS
1	Scope of Work: - PRE-FAB. M/C & FAB. is to be carried out by the vendor as per Drawing/Standard, QP and Technical requirements. Technical specification and conditions of supply on one/multiple vendors.	
2	Quotation is valid for a minimum period of 90 days from date of opening of enquiry.	
3	Submission of offers (clause no. 3.1 to 3.5 of Terms and Conditions)	
4	Quoted rates are on F.O.R. sub-contract store, HEEP, Haridwar basis.	
5	Delivery schedule:Item wise as per clause 5 of T & C of enquiry	
6	Inspection shall be done as per clause no. 6 of Terms and Conditions of Enquiry	
7	Guarantee Certificate shall be valid for 18 months from receipt of material in BHEL.	
8	90% after acceptance & final clearance of SRIV.10% after FTS and final account of material.	
9	LD clause is applicable@0.5% per week or part thereof with a maximum limit of 10% of the delayed portion of the PO.	
10	GST shall be applicable against documentary proof. Input Tax Credit shall be applicable and BHEL can claim benefit as per clause 10. of T & C of enquiry.	
11	Amendments of Extra/Less rates as per clause no. 11 of Terms and Conditions of Enquiry.	
12	We accept Reverse Auction(RA) clause as per standard policy of BHEL.	
13	We are MSME vendor and have submit CA certificate based on latest audited year (Non MSME vendor to write NA)	
14	We accept Price Variation clause (PVC) as per standard policy of BHEL.	
15	Bank Guarantee/Indemnity Bond: 25% BG & 75% Indemnity bond	
16	We have read clause no. 16 of terms and conditions of Enquiry and confirm to abide the same.(Clause 16.1 to 16.24)	
17	Transportation:Confirm acceptance of clause 17 of T & C.Manufactured items shall be despatched by BHEL approved transporter only and Insurance shall be borne by BHEL.	
18	Scrap :Confirm acceptance of Clause 18 of T & C of Enq.	
19	Option Clause: Confirm acceptance of clause 19 of T&C of enquiry.	
20	We accept Risk Purchase clause as per standard policy of BHEL.	
21	We have submitted Make in India certificate (duly filled and signed as per Annexure-II).	
22	<b>Rates have been quoted in indian Rupees on per Kilo Gram basis.</b>	

Note: BHEL reserves the right to reject any or all the offers (on techno-commercial ground) without assigning any reason thereof.

**(Vendor's signature with Stamp)**



# PQR

Item : Draft Tube CONE (KALESHWARAM drg: 02010118402-00)  
PRE-QUALIFICATION REQUIREMENT

01.00	TECHNICAL REQUIREMENT	Required
01.01	<p>Vendors should have experience of fabricating (cutting/bending/assembly/welding/pre-fabrication machining) and supplying of atleast 1 no. Draft tube cone or equivalent components in last 7 years from the date of enquiry as per following details:</p> <p>i) Dimensions of job: Diameter= 4450 mm and Height= 4250 mm and above.</p> <p>ii) Lifting facility and capacity at vendor works should EOT crane 12 Tons and above.</p> <p>iii) Vendor must have levelled bed plate size : Length= 5000mm and Breadth=5000mm and above to fabricate the job.</p> <p>iv) Vendor must have rolling/bending facility to bend/roll cone of thickness 40mm or above with width 2500mm or above.</p> <p>(v) Vendor must have suitable WPS/PQR and qualified welders for welding approved by Third Party and submit documentary evidence with offer.</p> <p>(vi) Vendor must have cutting facility to cut plate of thickness 50mm and above.</p>	Vendor to Comply & submit suitable evidence including technical specifications, technical brochure, photographs etc. of the facilities.
01.02	Vendor to furnish certificate against clause 01.01 from the customer / company or end user duly confirming that fabricated Draft Tube Cone or equivalent job was supplied and used for Hydro Pump or turbine/power plant/capital goods/infrastructure application OR Vendor to submit documentary evidence as per clause 1.03.	Vendor to Comply & submit suitable documents
01.03	Vendor to furnish name of customer/company with complete contact details and month /year of previous supply along with copy of PO, type of manufacturing facility used for fabrication ( assembly/welding/pre-fabrication machining), supply documents, Payment details(invoice copy) and inspection documents of supplied Draft Tube cone or equivalent.	Vendor to Comply & submit suitable documents
01.04	All PQR documents are to be stamped and signed in original by Vendor. In case documents and official stamp is in language other than English, documents and details of official stamp are to be translated in English and duly certified by Government agency/approved agency of Government/Embassy.	Vendor to Comply & submit suitable documents
01.05	BHEL reserves the right to verify the information provided by vendor. In case the information provided by vendor is found to be false/ incorrect, their offers shall be rejected.	Vendor to agree

NOTE: PQR is not restrictive

28/07/21  
Ravi Deshpande  
Dy. Mgr (WTX)

28/07/21  
B. Neena  
AGM (WT)

**PQR**

**Item : DT bend Liner Segments  
(KALESHWARAM drg: 02010218402-01 to 07)**

**PRE-QUALIFICATION REQUIREMENT**

01.00	<b>TECHNICAL REQUIREMENT</b>	
01.01	<p>Vendors should have experience of fabricating (cutting/bending/assembly/welding/pre-fabrication machining) and supplying of atleast 1 no. DT bend Liner segment or equivalent components in last 7 years from the date of enquiry as per following details:</p> <p>i) Dimensions of job: Length/Diameter = 4500 mm, Breadth/diameter= 3500mm and Height= 2500 mm and above.</p> <p>ii) Lifting facility and capacity at vendor works should EOT crane 5 Tons and above.</p> <p>iii) Vendor must have levelled bed plate size: Length= 5000mm, Breadth=4000 mm and above to fabricate the job.</p> <p>iv) Vendor must have rolling/bending facility to bend/roll cylinder of thickness 12mm and above with width 2500mm and above.</p> <p>(v) Vendor must have suitable WPS/PQR and qualified welders for welding approved by third party and submit documentary evidence with offer.</p> <p>(vi) Vendor must have cutting facility to cut plate of thickness 20mm and above.</p> <p>(vii) Vendor must have drilling facility to drill hole size of 50mm and above on a plate of thickness 50mm and above.</p>	<p align="center"><b>Required</b></p> <p align="center">Vendor to Comply &amp; submit suitable evidence including technical specifications, technical brochure, photographs etc. of the facilities.</p>
01.02	<p>Vendor to furnish certificate or documentary evidence against clause 01.01 from the customer / company or end user duly confirming that fabricated DT bend Liner segment or equivalent job was supplied and used for Hydro Pump or turbine/power plant/capital goods/infrastructure application OR Vendor to submit documentary evidence as per clause 1.03.</p>	<p align="center">Vendor to Comply &amp; submit suitable documents</p>
01.03	<p>Vendor to furnish name of customer/company with complete contact details and month /year of previous supply along with copy of PO, type of manufacturing facility used for fabrication ( assembly/welding/pre-fabrication machining), supply documents, Payment details(invoice copy) and inspection documents of supplied DT bend liner segment or equivalent.</p>	<p align="center">Vendor to Comply &amp; submit suitable documents</p>
01.04	<p>All PQR documents are to be stamped and signed in original by Vendor. In case documents and official stamp is in language other than English, documents and details of official stamp are to be translated in English and duly certified by Government agency/approved agency of Government/Embassy.</p>	<p align="center">Vendor to Comply &amp; submit suitable documents</p>
01.05	<p>BHEL reserves the right to verify the information provided by vendor. In case the information provided by vendor is found to be false/ incorrect, their offers shall be rejected.</p>	<p align="center">Vendor to agree</p>

**NOTE: PQR is not restrictive**

20/07/21  
Ravi Seshwal  
Dy. Mg. (WTX)

28/07/21  
BL Meena  
AGM (WT)



**PQR**

**Item: PIT LINER WELDED ASSEMBLY (KALESHWARAM drg:02020721502-01&02)**

**PRE-QUALIFICATION REQUIREMENT**

01.00	TECHNICAL REQUIREMENT	Required
01.01	<p>Vendors should have experience of fabricating (cutting/bending/assembly/welding/pre-fabrication machining) and supplying of atleast 1 no. Pit Liner Welded Assembly or equivalent components in last 7 years from the date of enquiry as per following details:</p> <p>i) Dimensions of job: Length/Diameter = 7500 mm, Breadth= 3750mm and Height= 3500 mm and above.</p> <p>ii) Lifting facility and capacity at vendor works should EOT crane 10 Tons and above.</p> <p>iii) Vendor must have levelled bed plate size: Length= 8000mm, Breadth=4000 mm and above to fabricate the job.</p> <p>iv) Vendor must have rolling/bending facility to bend/roll cylinder of thickness 10mm and above with width 2500mm and above.</p> <p>(v) Vendor must have suitable WPS/PQR and qualified welders for welding approved by third party and submit documentary evidence with offer.</p> <p>(vi) Vendor must have cutting facility to cut plate of thickness 20mm and above.</p> <p>(vii) Vendor must have drilling facility to drill hole size of 150mm and above on a plate of thickness 10mm and above.</p>	Vendor to Comply & submit suitable evidence including technical specifications, technical brochure, photographs etc. of the facilities.
01.02	Vendor to furnish certificate or documentary evidence against clause 01.01 from the customer / company or end user duly confirming that fabricated Pit Liner welded assembly or equivalent job was supplied and used for Hydro Pump or turbine/power plant/capital goods/infrastructure application OR Vendor to submit documentary evidence as per clause 1.03.	Vendor to Comply & submit suitable documents
01.03	Vendor to furnish name of customer/company with complete contact details and month /year of previous supply along with copy of PO, type of manufacturing facility used for fabrication ( assembly/welding/pre-fabrication machining), supply documents, Payment details(invoice copy) and inspection documents of supplied Pit liner welded assembly or equivalent.	Vendor to Comply & submit suitable documents
01.04	All PQR documents are to be stamped and signed in original by Vendor. In case documents and official stamp is in language other than English, documents and details of official stamp are to be translated in English and duly certified by Government agency/approved agency of Government/Embassy.	Vendor to Comply & submit suitable documents
01.05	BHEL reserves the right to verify the information provided by vendor. In case the information provided by vendor is found to be false/ incorrect, their offers shall be rejected.	Vendor to agree



**NOTE: PQR is not restrictive**

28/07/21  
Ravi Sethwal  
By. Mgr(WTX)

28/07/21  
BL Meena  
AGM(WT)

Manufacturer Name and Address	MANUFACTURING QUALITY PLAN				APPLICABILITIES TO	
BHEL Haridwar agreed / approved sub-contractors only	ITEM	DRAFT TUBE CONE, DRAFT TUBE ELBOW LINER (FAB), PIT LINER (WELDED ASSEMBLY)	Q.P. NO	QP/QA/20210055	PROJECT	
			DATE	28.07.2021		
			REV. NO.	00	CONTRACTOR	BHEL (HEEP) HWR
	WO. No.	20279T20201, 20281T20201	PAGE NO.	Page 1 of 2	Indent	20210055 rev 00, dtd 27.07.2021

S. No.	COMPONENT OPERATION	CHARACTERISTIC CHECKED	CATEGORY	TYPE/METHOD OF CHECKED	QUANTITY OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE DOCUMENT	FORMAT OF RECORD	D	M	B	C	REMARK
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.0	Material Receiving Inspection	Review of Supplier Test Certificate of Material for all the party materials	Major	Visual inspection	100 %	As per drg./ Standard	As per drg./ Standard	TC	✓	P	V	V	All party material to be procured from BHEL, Haridwar approved sources with following conditions - In all the cases a mill test certificate correlateable with the component for verification of conformance of the material as per the requirement, is essential.
2.0	<b>INPROCESS-INSPECTION</b>												
2.1	WPS, PQR & WPQ Qualification	Scrutinizing	Major	Record check	100%	ASME SEC IX	ASME SEC IX	Test Report	✓	P	V	-	WPS/PQR/WPQ approved by BHEL /BHEL approved agency shall be used.
2.2	Welding Operation	i) Visual inspection of welds	Major	Visual	100%	As per drg./ Standard	As per drg./ Standard	Obs. sheet	✓	P	V	-	1) BHEL approved electrode shall be used during welding 2) Qualified welders by BHEL /BHEL approved agency in accordance with ASME Section IX will be deployed on the job
2.3		ii) NDT of welds.	Major	NDT	As per drg.	As per drg./ Standard	As per drg./ Standard	Report	✓	P	W	V	1) NDT shall be carried out by ASNT/ISNT Level I/II Qualified Operators 2) NDT consumables shall be procured from BHEL approved sources.
3.0	<b>FINAL INSPECTION</b>												



Manufacturer/Subcontractor	Legends: P Perform by; W Witness by; V Record review; C Customer ; B BHEL/BHEL Representative; M Manufacturer/ sub-contractor; D: documents with tick mark shall be submitted by vendor to BHEL.	For BHEL Use	
		Worked by:  Sugandh Agarwal (QAX-Mfg)	Approved by:  P K Bansal, AGM(QA)

Manufacturer Name and Address		MANUFACTURING QUALITY PLAN				APPLICABILITIES TO	
BHEL Haridwar agreed / approved sub-contractors only	ITEM	DRAFT TUBE CONE, DRAFT TUBE ELBOW LINER (FAB), PIT LINER (WELDED ASSEMBLY)	Q.P. NO	QP/QA/20210055	PROJECT		
	WO. No.		DATE	28.07.2021			
			REV. NO.	00	CONTRACTOR	BHEL (HEEP) HWR	
			PAGE NO.	Page 2 of 2	Indent	20210055 rev 00, dtd 27.07.2021	

3.1	Dimensions	Verification of dimension & inspection	Major	Visual & measurement	100%	As per drg./ Standard	As per drg./ Standard	Obs. Sheet	✓	P	W	W	
3.2		Coating/ conservation (as applicable)	Major	Visual & measurement	As per drg.	As per drg./ Standard	As per drg./ Standard	Obs. Sheet	✓	P	V	-	
3.3		Completeness of Job, Documentation	Major	Visual	100%	As per drg./ Standard	As per drg./ Standard	Record	✓	P	V	-	Item shall be dispatched to BHEL after acceptance by BHEL/ BHEL nominated agency after duly identifying by P.O.No., drg no. Plant Order No. and I.R.No

Note:

1. Requirements of P.O., drawing and standard shall be fulfilled.
2. BHEL reserves the right for conduct repeat test, if required.

Manufacturer/Subcontractor	Legends: P Perform by; W Witness by; V Record review; C Customer ; B BHEL/BHEL Representative; M Manufacturer/ sub-contractor; D: documents with tick mark shall be submitted by vendor to BHEL.	For BHEL Use	
		Worked by:  Sugandh Agarwal (QAX-Mfg)	Approved by:  P K Bansal, AGM(QA)

**AIX to inform following to sub-contractor in case Remote Inspection along with routine inspection is required (due to covid-19 situation):.**

**Procedure for Remote inspections (Purchased / sub-contracted items)-**

- Vendor will submit remote inspection call similar to routine inspection call (alongwith internal inspection reports, records of calibration of measuring instruments).
- Digital display measuring instruments to be preferred, if available.
- Illumination by minimum 100 Watt bulb is to be done on the job near the location of inspection.
- Remote inspection will start with verification of identification numbers available on the item.
- Remote inspection will be offered by vendor through live videography, and videos, important pictures to be included as records of inspection, which will be submitted to BHEL(QC-Materials).
- The online inspection shall be performed using video call on Lifesize, Webex, WHATSAPP, Microsoft Teams application.

a) For **MPI**, first calibration using field indicator will be shown. After that room will be covered for darkness and MPI using Yoke or Prod as per applicable specification-shall be performed on casting. The inspector at the other end will see it through WHATSAPP video call. As MPI is with Fluorescent method, the indication are visible in the dark and can be seen through video call.

b) For **UT**, first the calibration of UT machine will be shown to the inspector through video call. After that 02 NO. mobile phones will be used for showing the UT on the job. 01 mobile is used for showing the probe movement and other is used for showing the screen of UT machine for indications.

c) The **HARDNESS** on material shall be shown using EQUOTIP HARDNESS TESTER. Before start of testing calibration on standard test block will be shown.

d) **DIMENSION & WALL THICKNESS** will be shown on marking table through video call.

e) For **MECHANICAL TESTING**, first "0" setting of machines will be shown to the inspector. After that dimension of each sample will be shown. The tensile test and impact tests shall be performed on test sample and inspector will witness the same through video call. After completion of test, all measurement on test samples, as applicable, shall be shown to the inspector on video call.

- Remote Inspection to be performed on job, should have no difference w.r.t. routine inspection performed in case of personal attendance of inspector.

- In case, interruption / loss of connectivity is reported by BHEL/ UPRVUNL/NTPC/TANGEDCO/MAHAGENCO etc. during inspection, the process will be repeated by the vendor.
- Any clarification raised during remote inspection, will be responded immediately by vendor.

## Certificate

In line with Government Public Procurement Order No. P-45021/2/2017-BE-II dt. 15.06.2017 & P-45021/2/2017-PP (BE-II) dated 28.05.2018, we hereby certify that we M/s Â \_\_\_\_\_(supplier name) are local supplier meeting the requirement of minimum local content (50%) as defined in above orders for the material against Enquiry No. \_\_\_\_\_

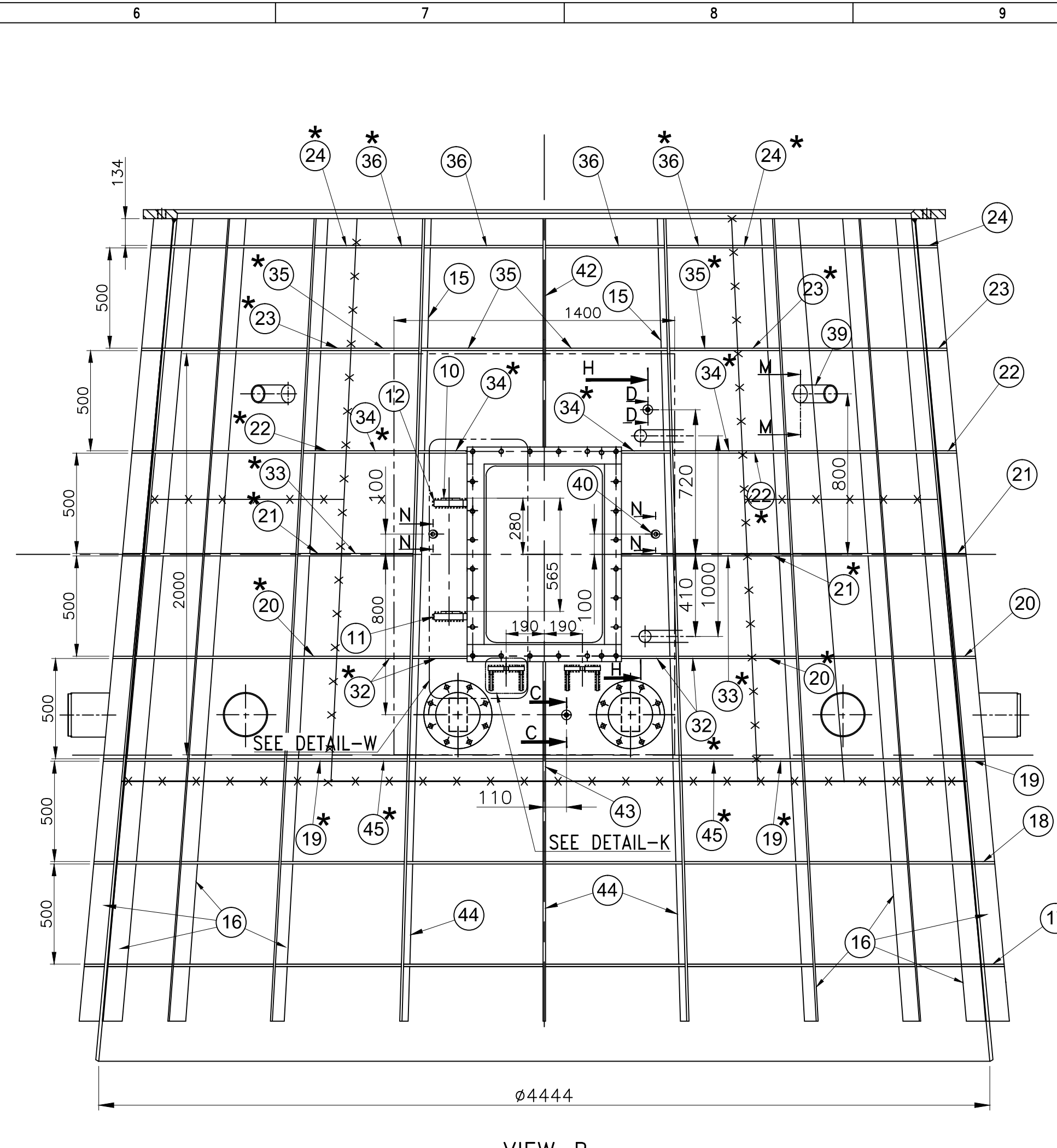
Details of location at which local value addition will be made is as follows:



\_\_\_\_\_  
\_\_\_\_\_

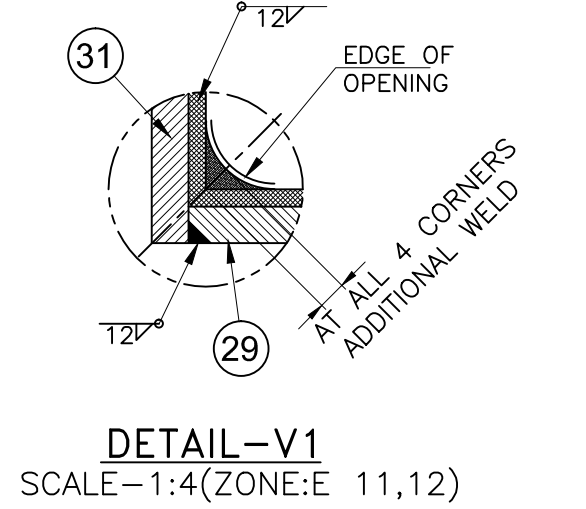
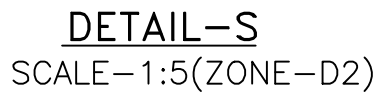
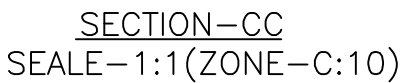
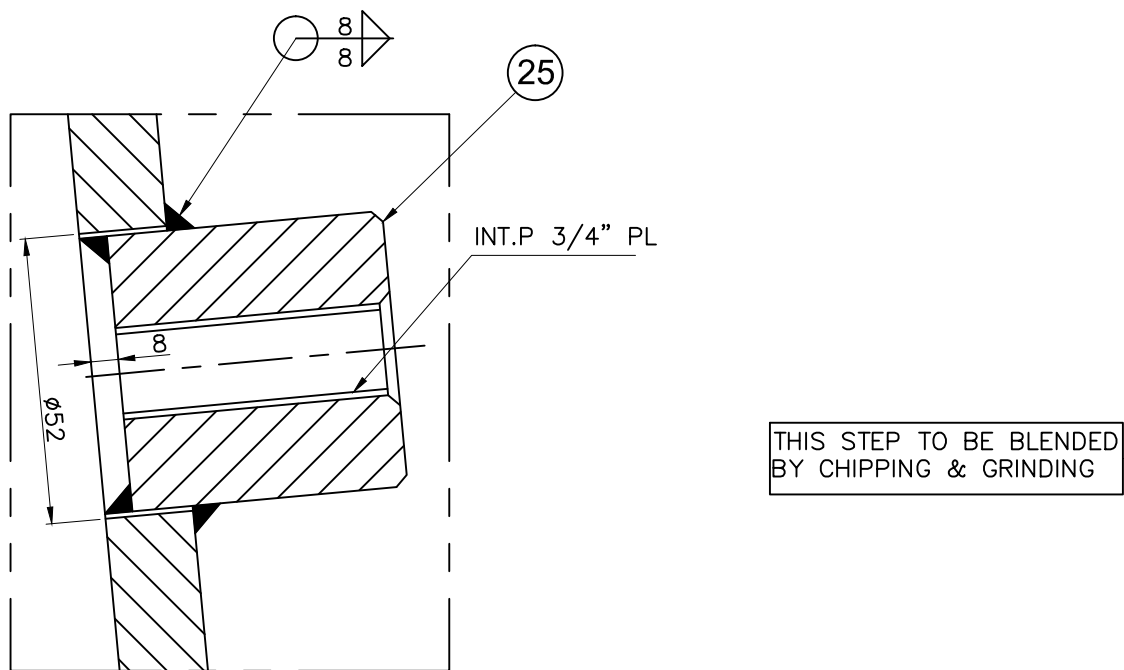
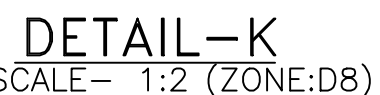
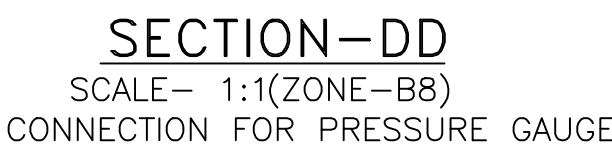
We also understand, false declarations will be in breach of the Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be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



Seal and Signature of Supplier



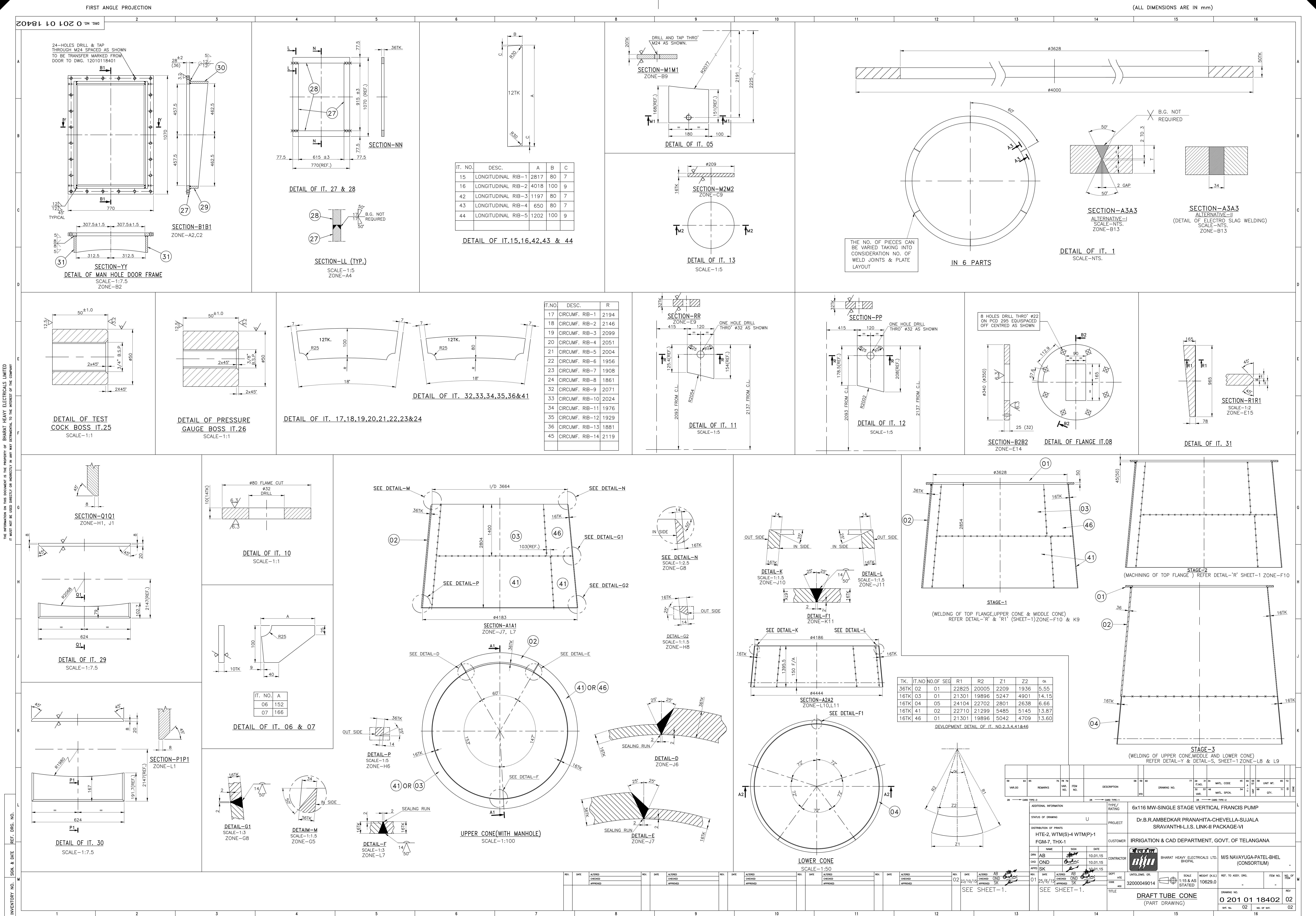


1. WELDING TO BE AS PER GRADE-III OF CORPORATE STD. AO622101
2. WELDING OF RIBS WITH CONE AND WITH EACH OTHER TO 
3. MANHOLE OPENING IN DT. CONE TO BE CUT OFF ONLY AFTER PROOF ASSY. OF ITEMS IN THE DRG. OF MANHOLE DOOR (100) NO. 120118401) WITH THE CONE. THE CUT OFF FROM CONE TO BE USED AS DOOR PLATE OF MANHOLE DOOR ASSY. THE EDGE OF MANHOLE DOOR TO BE SMOOTH.
4. THE MANHOLE FRAME COMPRISING ITEM NO.27,28,29,30 &31 TO BE STRESS RELIEVED ALONG WITH MAN HOLE DOOR AND MACHINED BEFORE WELDING TO D.T. CONE.
5. HINGE PLATES ITEM NO. 11 & 12 TO BE WELDED AFTER ASSY. WITH MANHOLE DOOR.
6. TRANSPORT STAYS (EQUAL ANGLE) ITEM 14 ARE TO BE CUT TO SUIT AND WELDED AT POSITION AT 100 MM FROM BOTH ENDS OF THE CONE DURING SHOP ASSEMBLY.
7.  INDICATES SITE WELDS.
8. PAINT AND PROTECT TO HTO0005 AS GIVEN BELOW
  - I. INTERNAL SURFACES WITH CAT.-C (BLACK COAL TAR PITCH EPOXIDE PAINT)
  - II. EXTERNAL UNMACHINED SURFACES WITH CAT.-E EXCEPT CHAIN DOTTED AREAS SHOWN IN VIEW-B ON MANHOLE C.L. TO CAT.-F.
  - III. MACHINED SURFACES & TAPPED HOLES TO CAT.G
9. ITEMS MARKED THUS \* TO BE CUT TO SUIT DURING ASSY.

[illegible]

ADDITIONAL INFORMATION				P/R RATING		6x116 MW-SINGLE STAGE VERTICAL FRANCIS PUMP																					
STATUS OF DRAWING				PROJECT		Dr.B.R.AMBEDKAR PRANAHITHA-CHEVELLA-SIJJALA SRAVANTHI-L.I.S. LINK-II PACKAGE-VI																					
DISTRIBUTION OF PSETS				CUSTOMER		IRRIGATION & CAD DEPARTMENT, GOVT. OF TELANGANA																					
HTE-2, WTM(S)-4 WTM(P)-1 FGM-7, THX-1																											
<table><tr><th>NO</th><th>NAME</th><th>IGN</th><th>DATE</th></tr><tr><td>DNA</td><td>AB</td><td>10.01.15</td><td></td></tr><tr><td>CND</td><td>OND</td><td>10.01.15</td><td></td></tr><tr><td>APPS</td><td>SK</td><td>10.01.15</td><td></td></tr></table>				NO	NAME	IGN	DATE	DNA	AB	10.01.15		CND	OND	10.01.15		APPS	SK	10.01.15		CONTRACTOR				BHARAT HEAVY ELECTRICALS LTD. BHOPAL		MS NAYANVA-PATEL-BHEL (CONSORTIUM)	
NO	NAME	IGN	DATE																								
DNA	AB	10.01.15																									
CND	OND	10.01.15																									
APPS	SK	10.01.15																									
<table><tr><th>REV</th><th>DATE</th><th>REASON</th><th>BY</th><th>CHKD</th><th>DATE</th></tr><tr><td>01</td><td>26/05/15</td><td>CHANGED DIMM</td><td>SK</td><td>OND</td><td></td></tr></table>				REV	DATE	REASON	BY	CHKD	DATE	01	26/05/15	CHANGED DIMM	SK	OND		DESG		UNT/LONG. GR.		SIZE & S		REV. TO ASSEY. DRGL		ITEM NO.		NO. OF	
REV	DATE	REASON	BY	CHKD	DATE																						
01	26/05/15	CHANGED DIMM	SK	OND																							
88				420		2000049014				1206 & 3 11150		02010115401		046													
028 PCD.				88 DIMM. 800 WAS 100. QTY. OF IT. NO.39 WAS 01.		TITLE		DRAFT TUBE CONE (WELDED ASSY.)		DRAWING NO.		0 201 01 18402		02													
										SHEET NO.		01		NO. OF SET.													
														02													

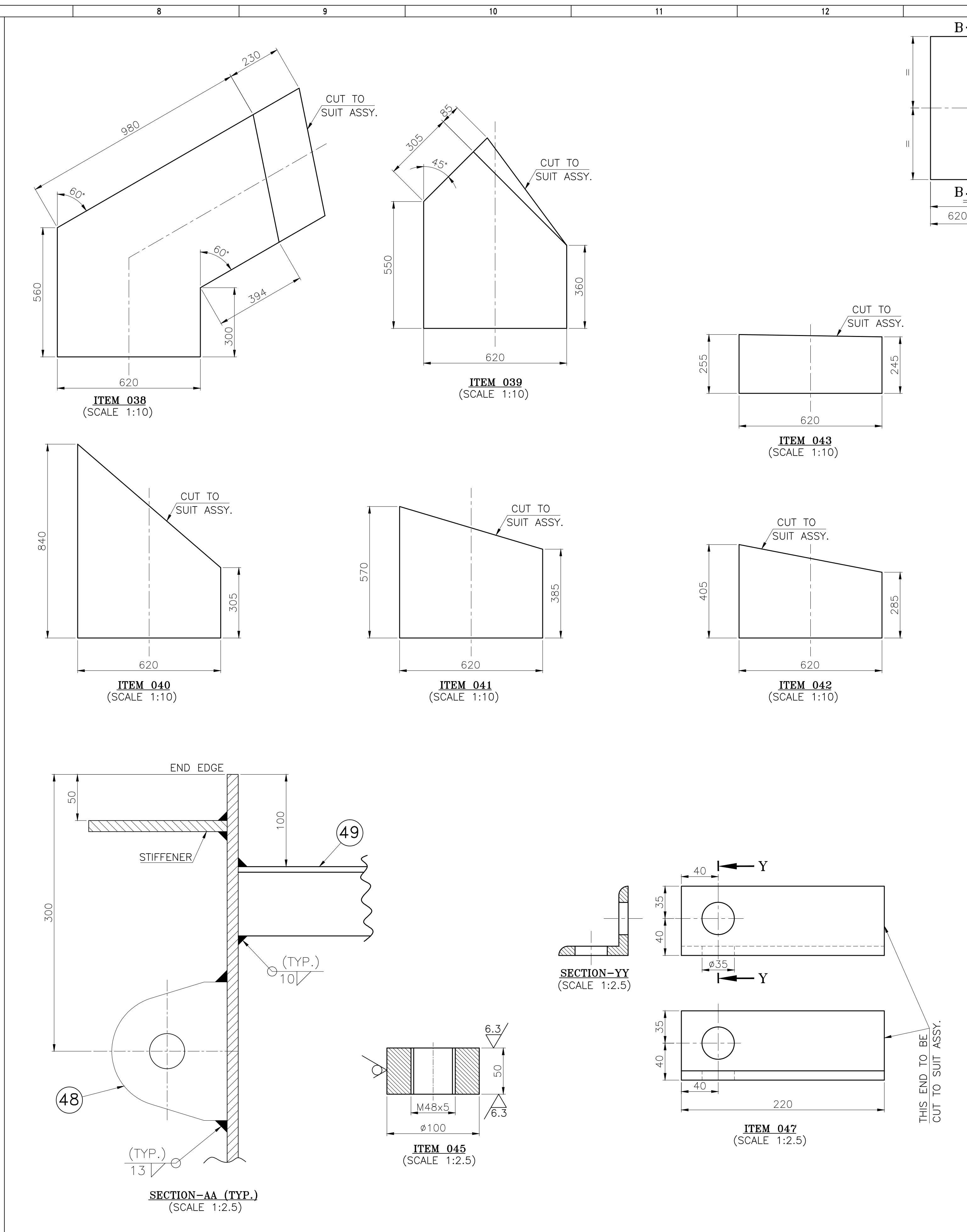








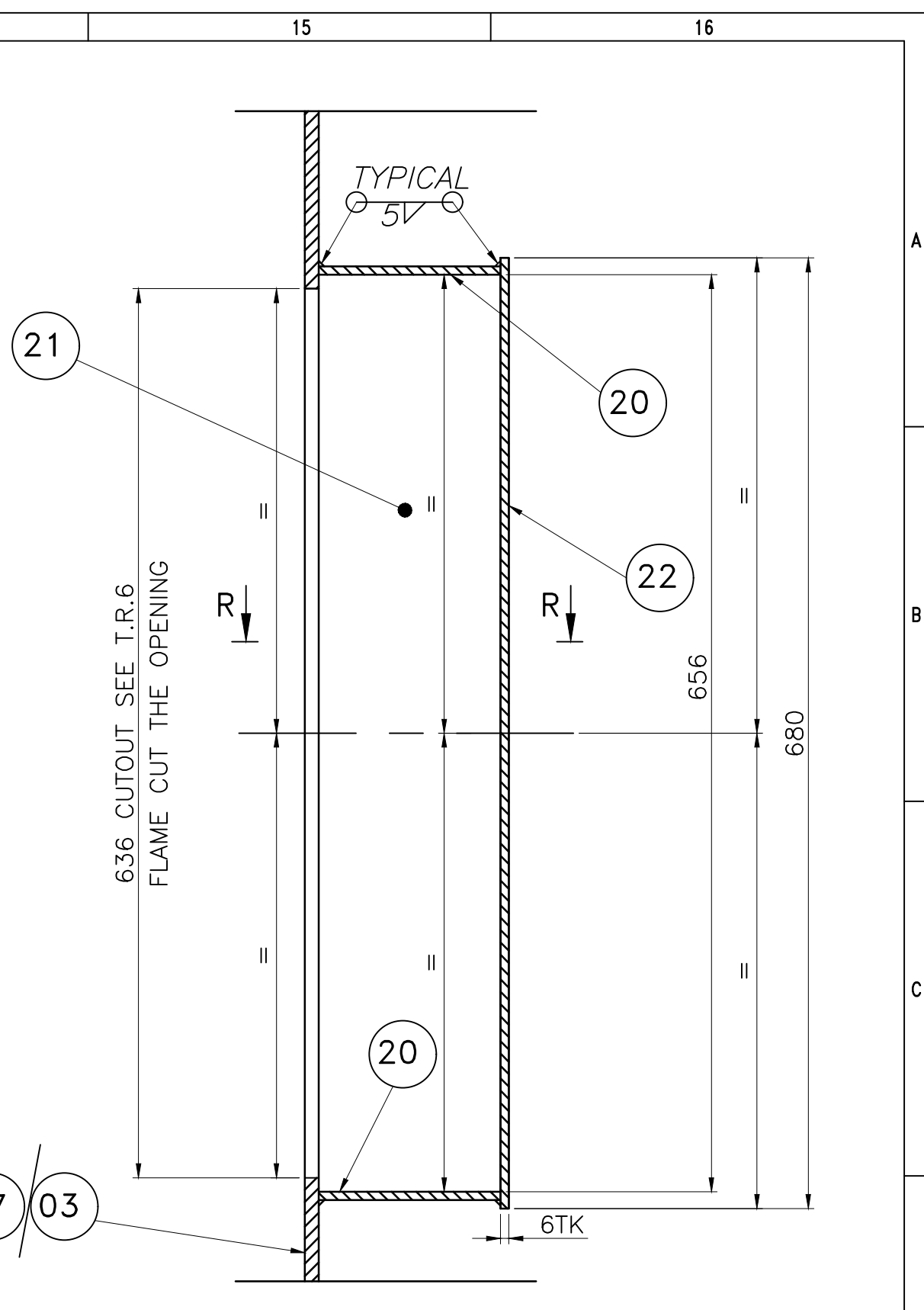




ITEM 044 (SCALE 1:10)										SECTION-BB (SCALE 1:10)										ITEM 046 (SCALE 1:2.5) (FOR LONGITUDINAL JOINT)										SECTION-XX (SCALE 1:2.5)									
6.BKG/MTR CUT TO SUIT										049 TRANSPORT STAYS										AA 1012508129										KG 6.8									
048 LIFTING LUG 3.5T										3 230 29 49 140										003 AA 10108										NG 220									
047 ANGLE 75x75x10x220LG																				AA 10108										KG 3.850									
046 ANGLE 75x75x10x70LG																				AA 1012508145										KG 2.400									
045 BOSS ø100																				AA 10108										NG 096									
044 SUPPORT PLATE 40TK																				AA 1012508145										KG 0.770									
043 RIB 20 TK										SEE DETAIL										AA 10108										NG 034									
042 RIB 20 TK										SEE DETAIL										AA 1010208266										KG 3.000									
041 RIB 20 TK										SEE DETAIL										AA 10108										NG 016									
040 RIB 20 TK										SEE DETAIL										AA 1011808196										KG 120.0									
039 RIB 20 TK										SEE DETAIL										AA 10108										NG 016									
038 RIB 20 TK										SEE DETAIL										AA 1011808137										KG 25.00									
SEE TABLE										037 STIFFENER 12 TK										AA 10108										NG 008									
SEE TABLE										036 STIFFENER 12 TK										AA 1011808137										KG 35.00									
SEE TABLE										035 STIFFENER 12 TK										AA 10108										NG 008									
SEE TABLE										034 STIFFENER 12 TK										AA 1011808137										KG 47.00									
SEE TABLE										033 STIFFENER 12 TK										AA 10108										NG 004									
SEE TABLE										032 STIFFENER 12 TK										AA 1011808137										KG 55.70									
SEE TABLE										031 STIFFENER 12 TK										AA 10108										NG 004									
SEE TABLE										030 STIFFENER 12 TK										AA 1011808137										KG 62.00									
SECTION 11-12										029 SECTION 11-12 L.H.										AA 10108										NG 004									
SECTION 10-11										028 SECTION 11-12 R.H.										AA 1011808099										KG 151.0									
SECTION 9-10										027 SECTION 10-11 L.H.										AA 10108										NG 002									
SECTION 8-9										026 SECTION 10-11 R.H.										AA 1011808099										KG 146.0									
SECTION 7-8										025 SECTION 9-10 L.H.										AA 10108										NG 002									
SECTION 6-7										024 SECTION 9-10 R.H.										AA 1011808099										KG 141.0									
SECTION 5-6										023 SECTION 8-9 L.H.										AA 10108										NG 004									
SECTION 4-5										022 SECTION 8-9 R.H.										AA 1011808099										KG 132.0									
SECTION 3-4										021 SECTION 7-8 L.H.										AA 10108										NG 002									
SECTION 2-3										020 SECTION 7-8 R.H.										AA 1011808099										KG 107.0									
SECTION 1-2										019 SECTION 6-7 L.H.										AA 10108										NG 004									
SECTION 9 TO 12										018 SECTION 6-7 R.H.										AA 1011808099										KG 102.0									
SECTION 8 TO 9										017 SECTION 5-6 L.H.										AA 10108										NG 002									
SECTION 7 TO 8										016 SECTION 5-6 R.H.										AA 1011808099										KG 111.0									
SECTION 6 TO 5										015 SECTION 4-5 L.H.										AA 10108										NG 002									
SECTION 5 TO 4										014 SECTION 4-5 R.H.										AA 1011808099										KG 107.0									
SECTION 4 TO 3										013 SECTION 3-4 L.H.										AA 10108										NG 004									
SECTION 3 TO 2										012 SECTION 3-4 R.H.										AA 1011808099										KG 111.0									
SECTION 2 TO 1										011 SECTION 2-3 L.H.										AA 10108										NG 002									
SECTION 1 TO 0										010 SECTION 2-3 R.H.										AA 1011808099										KG 107.0									
SECTION 0 TO 9										009 SECTION 1-2 L.H.										AA 10108										NG 004									
SECTION 0 TO 8										008 SECTION 1-2 R.H.										AA 1011808099										KG 102.0									
SECTION 0 TO 7										007 SEGMENT-IV L.H.										AA 10108										NG 002									
SECTION 0 TO 6										006 SEGMENT-IV R.H.										AA 1011808099										KG 652.5									
SECTION 0 TO 5										005 SEGMENT-III L.H.										AA 10108										NG 001									
SECTION 0 TO 4										004 SEGMENT-III R.H.										AA 1011808099										KG 605.0									
SECTION 0 TO 3										003 SEGMENT-II L.H.										AA 10108										NG 001									
SECTION 0 TO 2										002 SEGMENT-II R.H.										AA 1011808099										KG 670.0									

REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHECKED			CHECKED			CHECKED			CHECKED
		APPROVED			APPROVED			APPROVED			APPROVED

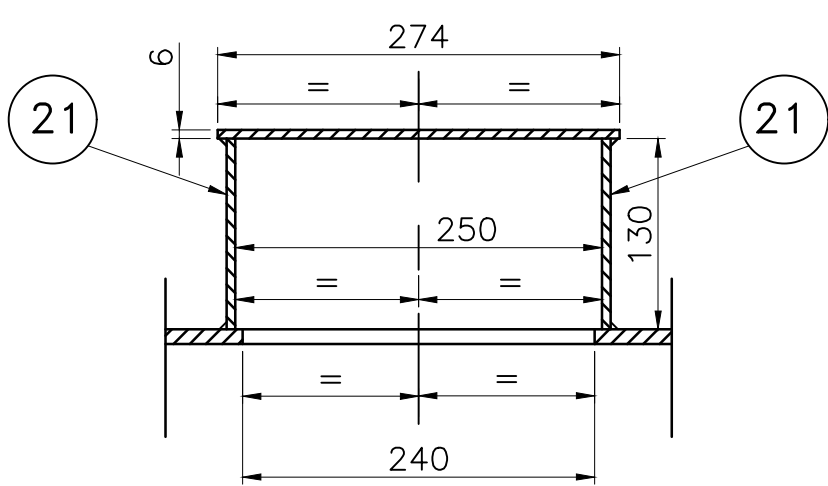
INVENTORY NO.	SIGN. & DATE	0 20207 18401 REF. DRG. NO.
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SECTION-AA  
(VAR-02)  
(ZONE-A4,G4)

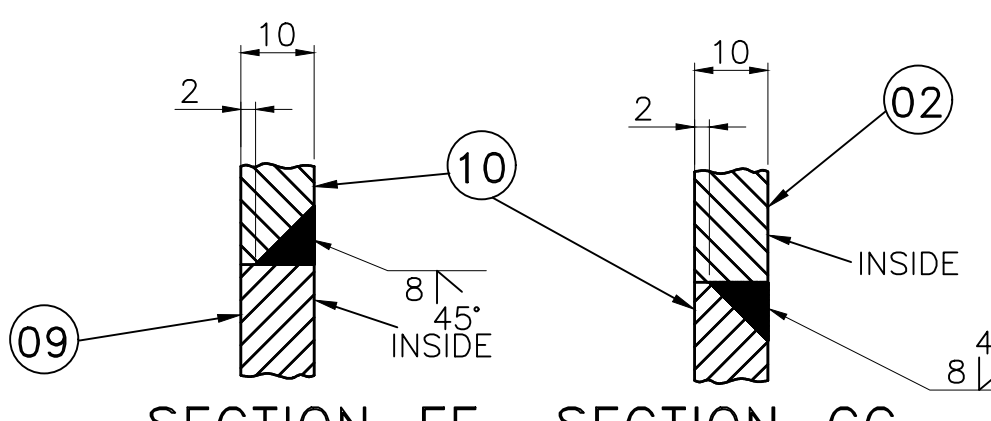
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SCALE 1:5  
(ZONE-B1)



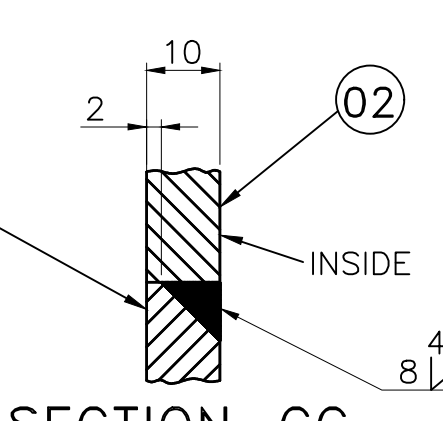
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SCALE 1:5

SCALE 1:5



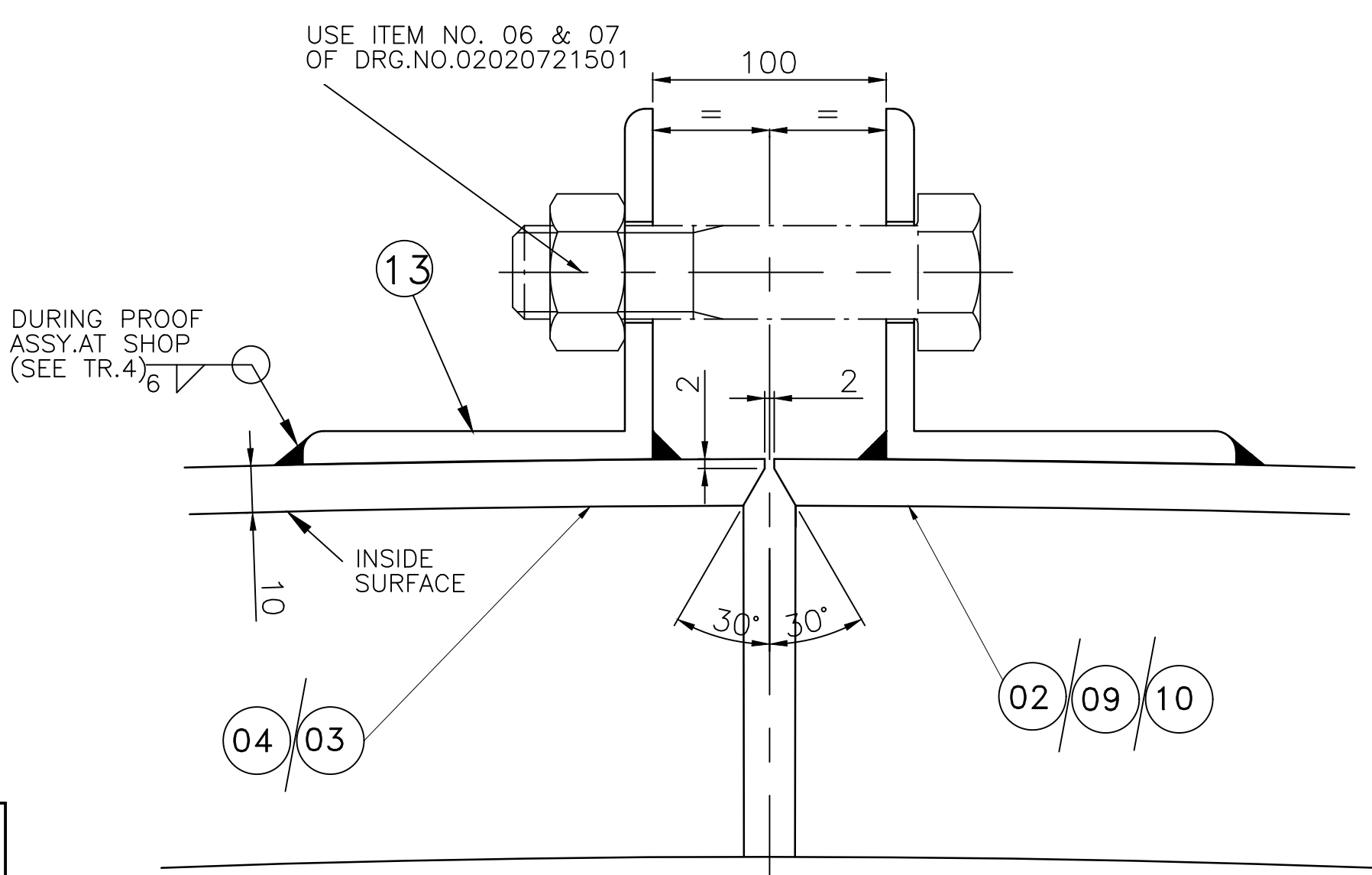
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SCALE 1:1  
(ZONE—F9)

ZONE-F9)



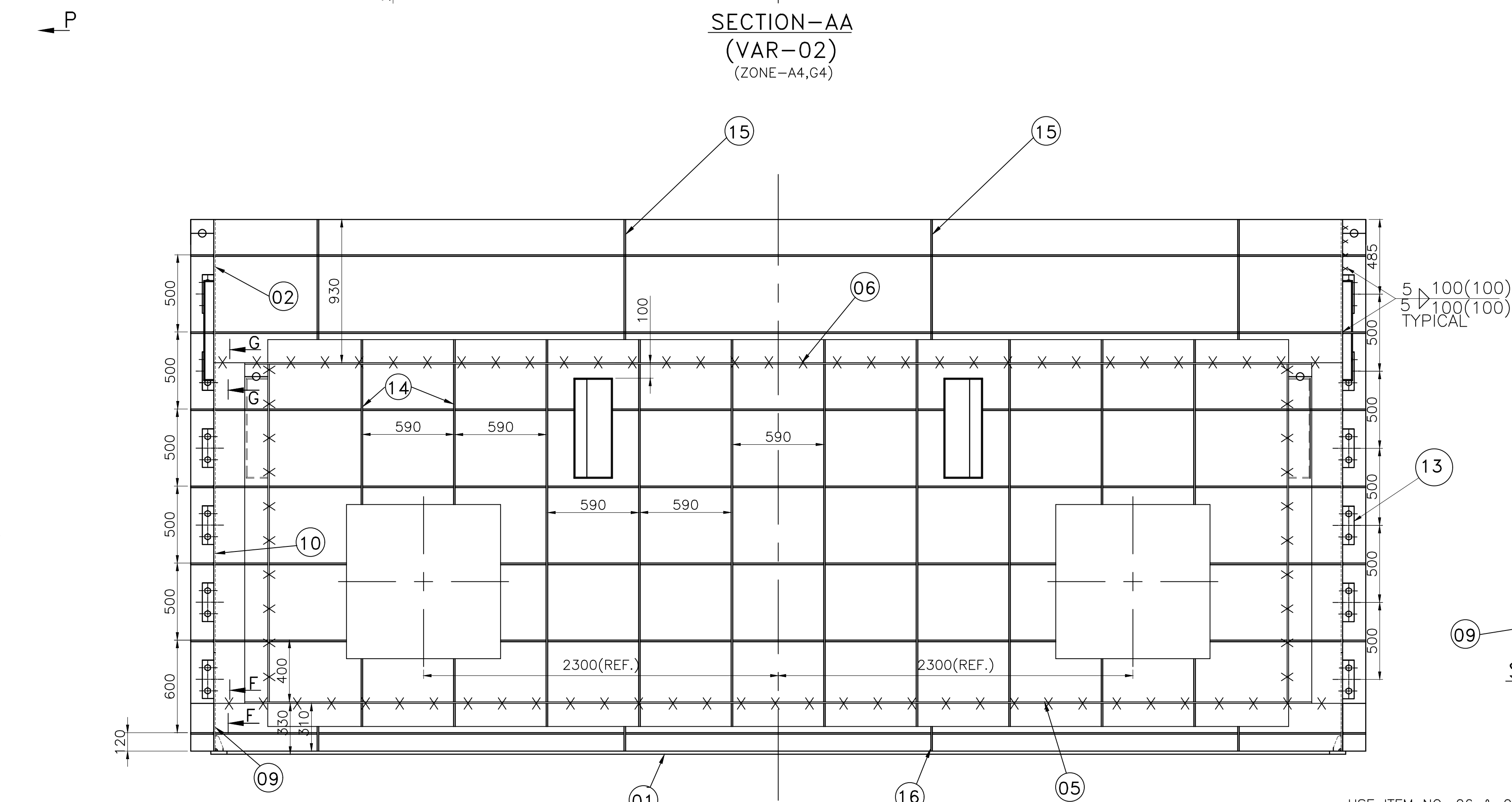
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SCALE 1:1  
(ZONE-G9)

ZONE-G9)



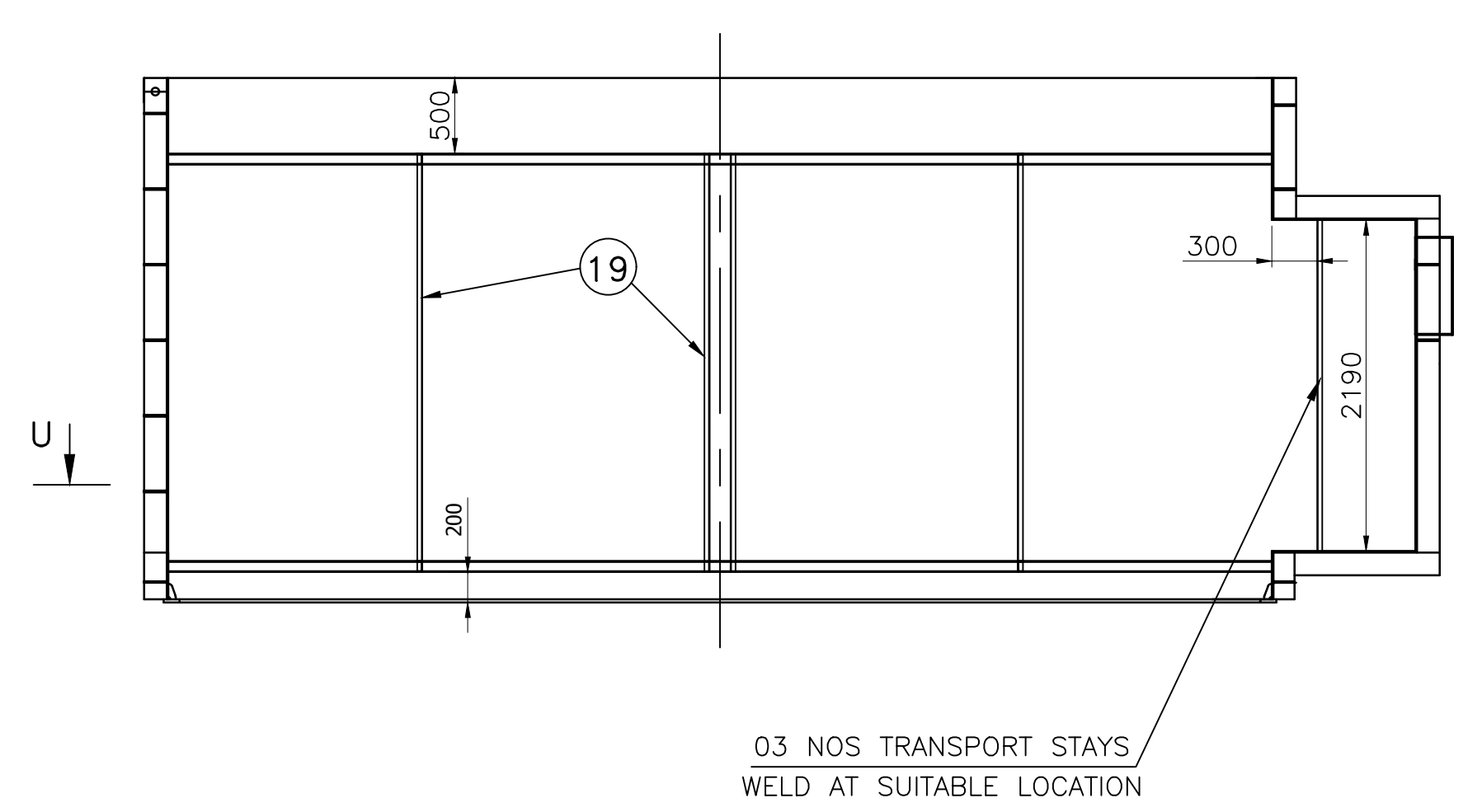
DETAIL-N  
SCALE - 1:2  
(ZONE-A4)

ONE-A4)



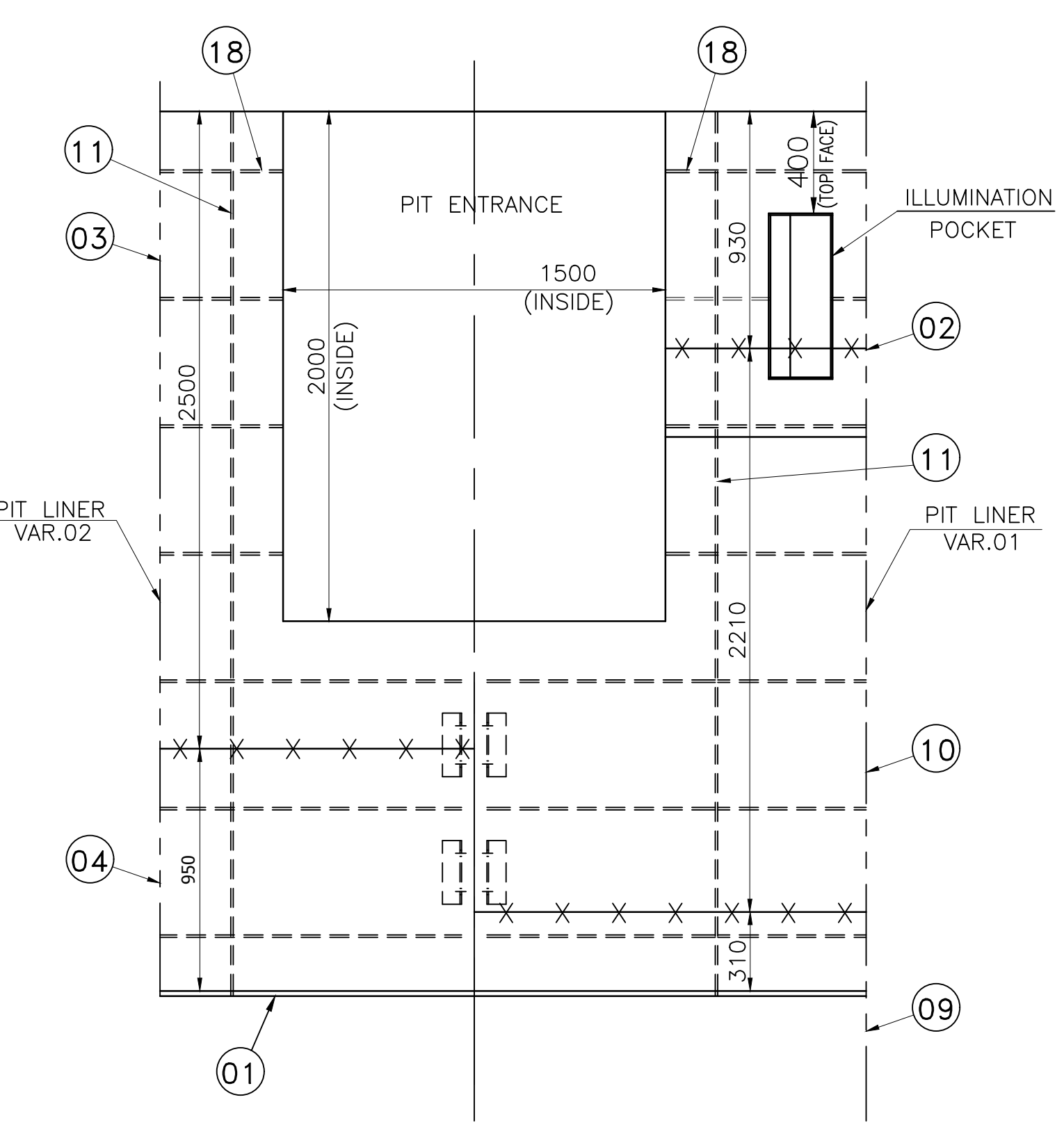
VIEW-P  
(VAR-01)  
(ZONE-D8)

(ZONE-D8)



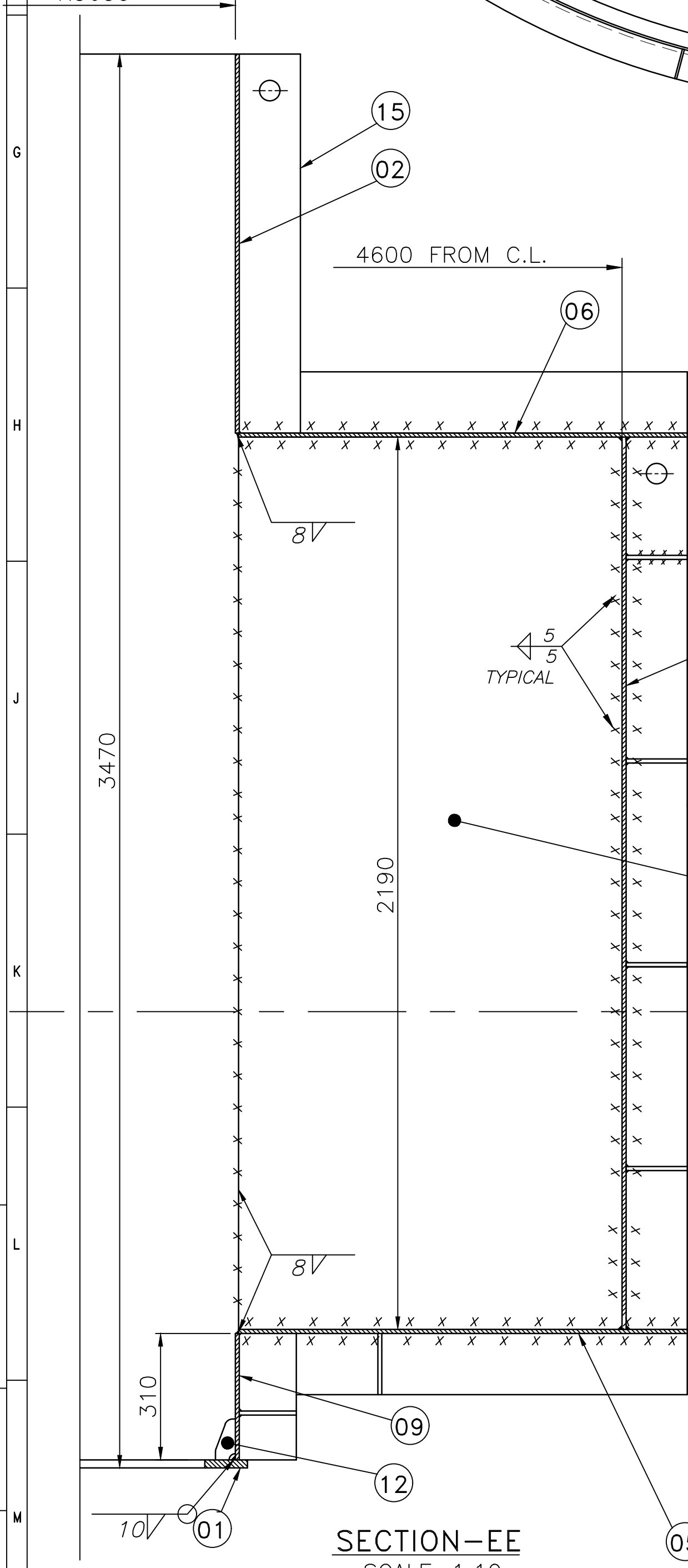
(SCHEME FOR TRANSPORT STAYS)  
(TYPICAL) SCALE 1:50

(TYPICAL) SCALE 1:50



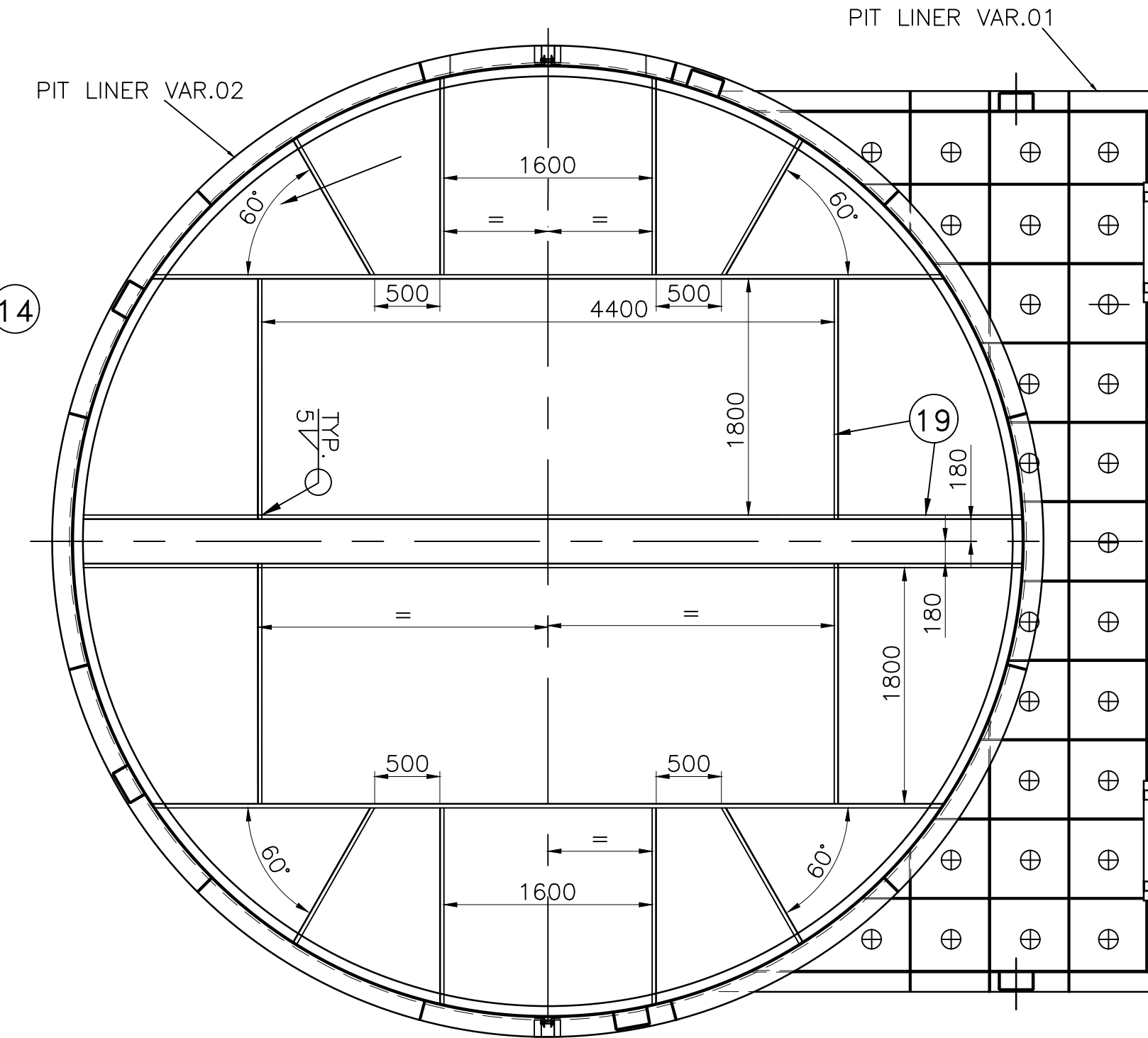
VIEW-A1  
(ZONE-B4)

(ZONE—



SECTION-EE  
SCALE-1:10  
(ZONE-D6.7)

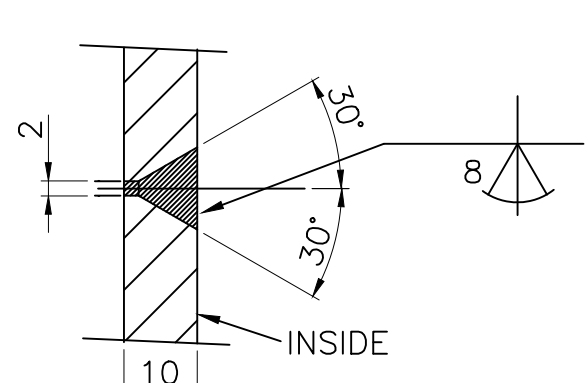
SCALE-1:1  
(ZONE-D6.7)



**SECTION-UU**  
(SCHEME FOR TRANSPORT STAYS)  
(TYPICAL) SCALE 1:50

(SCHEME FOR TRANSPORT STAYS)  
(TYPICAL) SCALE 1:50

TYPICAL) SCALE 1:50



DETAIL-Z  
SCALE - 1:1  
(ZONE-C8)

SCALE = 1.1  
(ZONE-C8)



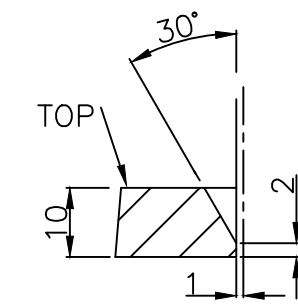
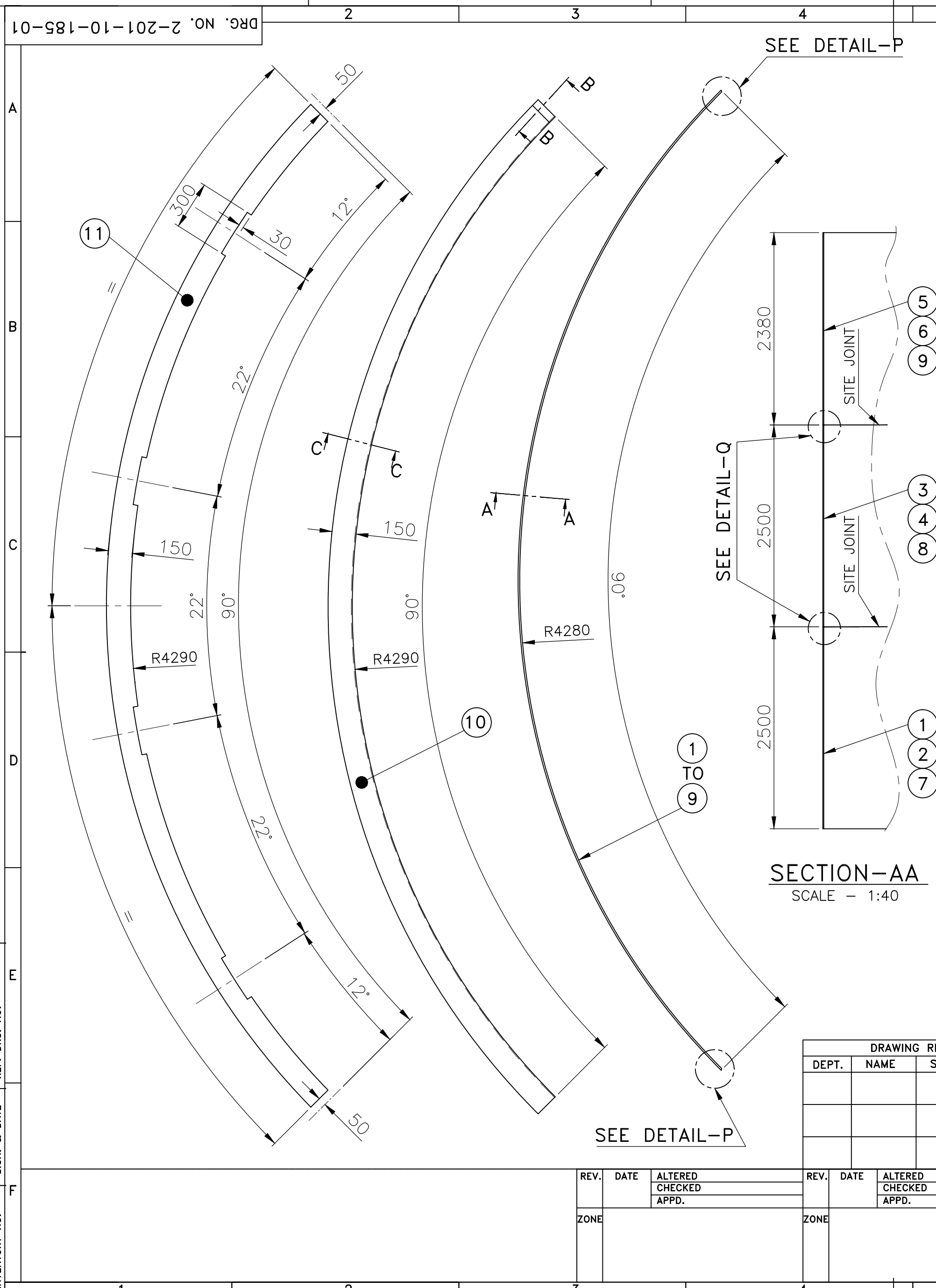


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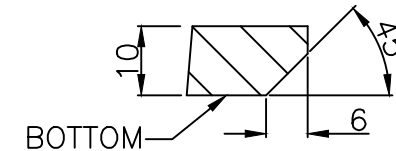
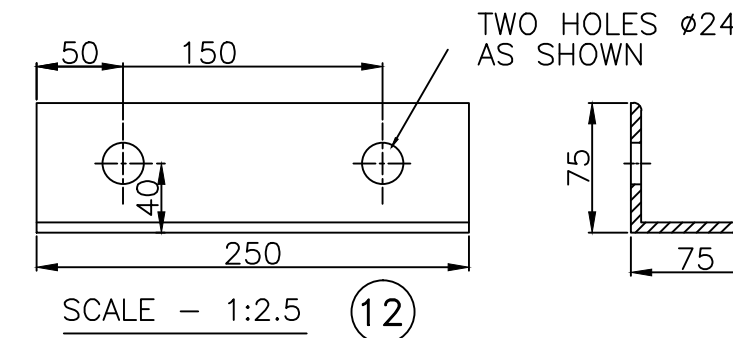
2 20110 14401  
REF. DRG. NO.

SIGN. &amp; DATE

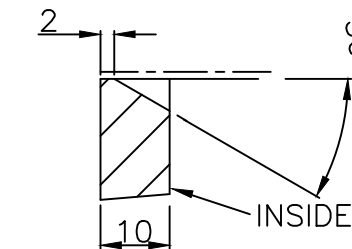
INVENTORY NO.



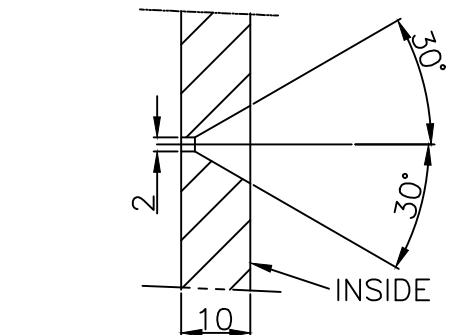
SECTION-BB  
SCALE - 1:1



SECTION-CC  
SCALE - 1:1



DETAIL-P  
SCALE-1:1





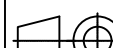


DETAIL-Q  
SCALE - 1:1

TECH.REQ.:-

- 1 FLAME CUT EDGES TO BE GROUND SMOOTH FOR NEAT APPEARENCE.  
2 WELDING TO BE DONE AS PER CORPORATE STD No. AA0622101 GR III

		012	CLAMP ANGLE 75x75x6x250				AA1012508129	KG	2.000		C
							AA10108	NO	001		
		011	STIFFENER SEGMENT 10 TK				AA1011808072	KG	78.000		
							AA10108	NO	001		
		010	BOTTOM STIFFENER SEGMENT 10 TK.				AA1011808072	KG	81.000		
							AA10108	NO	001		
P.I.		009	LINER SEGMENT-9 10 TK				ASTM A516 Gr.-70	KG	1257.500		
								NO	001		
P.I.		008	LINER SEGMENT-8 10 TK				ASTM A516 Gr.-70	KG	1321.000		
								NO	001		
P.I.		007	LINER SEGMENT-7 10 TK				ASTM A516 Gr.-70	KG	1321.000		
								NO	001		
P.I.		006	LINER SEGMENT-6 10 TK				ASTM A516 Gr.-70	KG	1257.500		D
								NO	001		
P.I.		005	LINER SEGMENT-5 10 TK				ASTM A516 Gr.-70	KG	1257.500		
								NO	001		
P.I.		004	LINER SEGMENT-4 10 TK				ASTM A516 Gr.-70	KG	1321.000		
								NO	001		
P.I.		003	LINER SEGMENT-3 10 TK				ASTM A516 Gr.-70	KG	1321.000		
								NO	001		
P.I.		002	LINER SEGMENT-2 10 TK				ASTM A516 Gr.-70	KG	1321.000		
								NO	001		
P.I.		001	LINER SEGMENT-1 10 TK				ASTM A516 Gr.-70	KG	1321.000		E
								NO	001		
VAR.OO	REMARKS	VAR NO.	ITEM NO.	DESCRIPTION	STD.	DRAWING NO.	MATL. CODE	UNIT	UNIT WT.	QTY.	ZONE

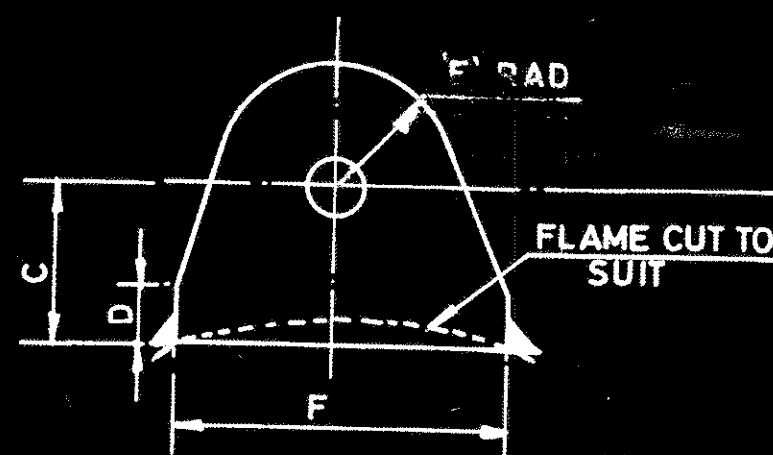
DRAWING REVIEW				ADDITIONAL INFORMATION				TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT				KISHANGANGA HEP 3x110MW				
DEPT.	NAME	SIGN.	DATE					<div>BHARAT HEAVY ELECTRICALS LTD. BHOPAL</div>				DRN	NAME	SIGN	DATE	NO. OF VAR.
												CKD	NEERAJ		04.10.10	
												APPD	OND		04.10.10	
													S.K.		04.10.10	
REV.	DATE	ALTERED CHECKED APPD.	REV.	DATE	ALTERED CHECKED APPD.	DEPT. H.T.E.	UNTOL. DIMS. GR.		SCALE	WEIGHT(K.G.)	REF.TO ASSY.DRG.	ITEM NO SEE BOM	NO.OF ITEM			
						CODE 402	32000049014		1:20	—	0 201 10 18501		012			
ZONE				ZONE				TITLE				DRAWING NO. 2-201-10-185-01				REV. 00
								DETAILS FOR LOWER PIT LINER				SHT. NO. 1				NO. OF SHT. 1

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

DRG. NO. 3 230 29 49140

ITEM NO.	SHACKLE SIZE (SWL)	A	B	C	D	E	F	G	MATL CODE MATL. SPEC	WT. KG.
1	1 TONNE	22	20	35	15	35	90	7	AA10108	0.77
2	2.0 TONNES	30	25	50	20	45	115	8	AA101180812	1.60
3	3.5 TONNES	38	36	65	25	60	150	13	AA10108	3.85
4	5.5 TONNES	46	45	65	25	65	165	13	AA101180812	5.35
5	7 TONNES TO 8.5	55	50	75	30	75	190	15	AA10108	7.80
6	10 TONNES TO 12	58	70	80	40	90	225	20	AA1011808218	14.90
7	14 TONNES TO 16	70	85	95	40	105	265	20	AA10108	24.70
8	20.0 TONNES	81	95	110	40	120	300	20	AA10108	35.88
9	25.0 TONNES	91	100	120	40	135	340	20	AA10108	46.96
10	30.0 TONNES	96	115	140	55	150	375	35	AA10108	69.50
11	40.0 TONNES	110	125	150	55	165	415	35	AA10108	89.20
12	50.0 TONNES	125	125	170	55	190	470	35	AA10108	116.20
13	80.0 TONNES	150	125	200	55	225	560	35	AA10108	161.8



## TECH. REQ.

1. FLAME CUT TO BE OF NEAT APPEARANCE.
2. SWL TO BE CLEARLY STAMPED ON BOTH FACES.
3. FLAME CUT THE LUG TO SUIT THE MOUNTING PROFILE AS REQUIRED.
4. FOR EQUIVALENT / SUPERIOR MATERIAL SPECIFICATION REFER DRG. NO. 3-200-00-49019.
5. FOR TOLERANCES ON UNFINISHED DIMENSIONS REFER DRG. NO. 3-200-00-49014.

C 350469

REF. DRG. NO.

SIGN &amp; DATE

INVENTORY NO.

55	64	65	75	78	79	25	27	29	001	LIFTING LUG	58	59	60	77	29	31	34	45	55	56	58	65	72						
VAR.00			REMARKS			VAR. NO.			ITEM NO.			DESCRIPTION			STD.			DRAWING NO.			IT. NO.			MATL. CODE			UNIT WT.		
28 → CARD TYPE - 3			28 → CARD TYPE - 1			28 → CARD TYPE - 2			AA10108			54			57			UNIT			QTY.			71					

DRG. REVIEW				ADDITIONAL INFORMATION				STANDARD			
DEPT.	NAME	SIGN	DATE	STATUS OF DRAWING				उत्पाद का प्रकार या ग्राहक/परियोजना का नाम			
FBM	KCG	LSR	26/3/98	DISTRIBUTION OF PRINTS				TYPE OF PRODUCT OR NAME OF CUSTOMER / PROJECT			
				HTE - 2, FBM - 7				भारत हेवी इलेक्ट्रिकल्स लिमिटेड			
				WTM - 5, THX - 1				भोपाल			
				REV.				BPHARAT HEAVY ELECTRICALS LTD.			
				DATE				BHOVAL			
				ALTERED				वनाया DRN.			
				CHECKED				नाम / NAME			
				APPROVED				हस्ता. / SIGN			
				ZONE				दि. / DATE			
								वै. की संख्या NO. OF VAR.			
								अनुपात SCALE			
								भार (कि.ग्रा.) WEIGHT (K.G.)			
								अस. ड्राइंग का संदर्भ REF. TO ASSY. DRG.			
								मद. क. ITEM NO.			
								मद. संख्या NO. OF			
								शीर्षक / TITLE			
								ड्राइंग नं. / DRAWING NO.			
								पृष्ठ नं. / SHT. NO. 1			
								पृष्ठों की सं. / NO. OF SHT. 1			



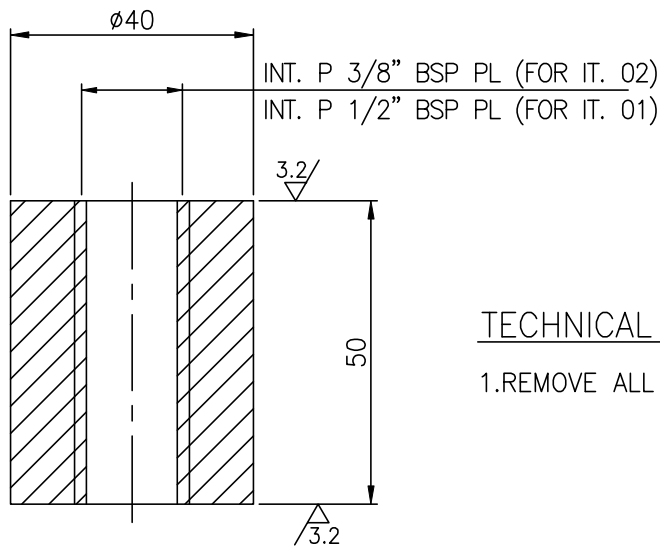
## FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

REV.	DATE	ALTERED CHECKED APPD.	REV.	DATE	ALTERED CHECKED APPD.	ADDITIONAL INFORMATION
						STATUS OF DRAWING U
						DISTRIBUTION HTE-2, THX-1, OF PRINTS WTM (STR.)-4, WTM(PLG.)-1

## DRAWING REVIEW

DEPT.	NAME	SIGN.	DATE



## TECHNICAL REQUIREMENT:-

1.REMOVE ALL BURRS &amp; SHARP EDGES.

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REF. DRG. NO.

SIGN. &amp; DATE

INVENTORY NO.

ø40	02	BOSS 3/8" BSP	AA1010208160	Kg	0.5
			AA10108	No.	01
ø40	01	BOSS 1/2" BSP	AA1010208160	Kg	0.5
			AA10108	No.	01
REMARKS	ITEM NO.	DESCRIPTION	STD	MATL. CODE	UNIT WT.
				MATL. SPCN.	QTY.

TUIRIAL HEP, (2x30MW)

BHARAT HEAVY ELECTRICALS LTD.  
BHOPAL

DRN

NAME

SIGN

DATE

NO. OF  
VAR.

CKD

WALI

WALI

27.04.2012

APPD

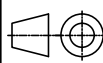
AM

AM

27.04.2012

DEPT.  
H.T.E.

UNTO. DIMS. GR.



SCALE

WEIGHT (K.G.)

REF. TO ASSY. DRG.

ITEM NO.

NO. OF  
ITEMCODE  
402

32000049014

1:1

SEE TABLE

0 20205 14504

24 &  
25

02

TITLE

BOSS

DRAWING NO.

4 20205 14508

REV.

00

SHT. NO.

01

NO. OF SHT.

01

SIZE A4



## COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010118402 CBOM Var: 00 Revno: 0 Rev Date: 24.06.2021  
Description: DRAFT TUBE CONE Total weight: 11150.0

CBOM - 02010118402 00

	ENGG		TTX		WTX	
	Initial	Date	Initial	Date	Initial	Date
Worked By	stegau	14.06.2021	ttxsk	22.06.2021	wtxman	18.06.2021
Checked By	stegau	22.06.2021	ttxsk	22.06.2021	bk2rd	18.06.2021
Approved By	stedkr	24.06.2021	ttxss	22.06.2021	wtxblm	18.06.2021



# COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010118402 CBOM Var: 00  
Description: DRAFT TUBE CONE

Revno: 0

Rev Date: 24.06.2021

Total weight: 11150.0

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty( Total )	Description		Assy. Remarks	Inclusion?	Mat Shape		Remarks			
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
0	02010118402 00			11150.0						
1(1)	DRAFT TUBE CONE			Y						
MF			N		0306-0236-0306-0236					
1		AA1011819210	AA10119	875.0	1600.0X2020.0	1	1	1333.2	0.0	1333.2
1(1)	TOP FLANGE		Ref.02010118402 for detal	Y	PL 50		in 6 parts			
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
2		AA1011819180	AA10119	1652.0	2610.0X2844.0	1	1	2204.6	0.0	2204.6
1(1)	UPPER CONE SEGMENT 36TK		Ref.02010118402 for detal	Y	PL 36					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
3		AA1011819112	AA10119	895.0	5548.0X1557.0	1	1	1140.25	0.0	1140.25
1(1)	UPPER CONE SEGMENT 16TK		Ref.02010118402 for detal	Y	PL 16					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
4		AA1011819112	AA10119	477.0	3101.0X1441.0	1	5	589.9	0.0	2949.5
5(5)	LOWER CONE SEGMENT -1 16TK		Ref.02010118402 for detal	Y	PL 16					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
5		AA1011819139	AA10119	4.4	168.0X180.0	1	2	4.9	0.0	9.8
2(2)	JACKING PLATE		Ref.02010118402 for detal	Y	PL 20					
MF DR	ST-FE410 WB-PLATE				0072-0301-0317-0306					KG
6		AA1011819074	AA10119	0.8	152.0X100.0	1	2	1.3	0.0	2.6
2(2)	JACKING SUPPORT PLATE - I		Ref.02010118402 for detal	Y	PL 10					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
7		AA1011819074	AA10119	0.9	166.0X100.0	1	2	1.4	0.0	2.8
2(2)	JACKING SUPPORT PLATE - II		Ref.02010118402 for detal	Y	PL 10					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
8		AA1011819171	AA10119	15.0	350.0X350.0	1	2	32.4	0.0	64.8
2(2)	FLANGE		Ref.02010118402 for detal	Y	PL 32					
MF DR	ST-FE410 WB-PLATE				0072-0301-0317-0306					KG
9		HW1047955199	AA10455	249.0	6000.0	1	1	6.0	0.0	6.0
1(1)	219.1 X 8 X 6000 LG. ERW PIPE		CUT TO SUIT	Y	219.1X8.18		L=6000mm			
MF DR	ST-B-HFS-PIPE				0072-0315-0306					MR

ENGG

TTX

WTX

Initial

Date

Initial

Date

Initial

Date

Worked By

stegau

14.06.2021

ttxsk

22.06.2021

wtxman

18.06.2021

Checked By

stegau

22.06.2021

ttxsk

22.06.2021

bk2rd

18.06.2021

Approved By

stedkr

24.06.2021

ttxss

22.06.2021

wtxblm

18.06.2021



# COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010118402 CBOM Var: 00

Revno: 0

Rev Date: 24.06.2021

Description: DRAFT TUBE CONE

Total weight: 11150.0

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty( Total )	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
10		AA1011808102	AA10108	0.4	80.0X80.0	1	2	0.74	0.0	1.48
2(2)	BOSS		Ref.02010118402 for detail	Y	PL 14			Dia 80mm		
MF DR	ST-A(FE410 WA)PLATE				0072-0301-0317-0306					KG
11		AA1011819171	AA10119	3.9	154.0X120.0	1	1	4.87	0.0	4.87
1(1)	HINGE PLATE - I		Ref.02010118402 for detail	Y	PL 32					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
12		AA1011819171	AA10119	5.5	208.0X120.0	1	1	6.6	0.0	6.6
1(1)	HINGE PLATE - II		Ref.02010118402 for detail	Y	PL 32					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
13		AA1011819112	AA10119	4.3	209.0X209.0	1	10	5.76	0.0	57.6
10(10)	BLANK FLANGE Ø209		Ref.02010118402 for detail	Y	PL 16					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
14		AA1012508129	AA10108	408.0	60000.0	1	1	428.4	0.0	428.4
1(1)	EQUAL ANGLE 75X75X6X60M		Ref.02010118402 for detail	Y	75X75X6			L=60000mm		
MF DR	ST-A(FE410 WA)ANGLE				0072-0301-0306					KG
15		AA1011808099	AA10108	21.0	2817.0X80.0	1	2	22.3	0.0	44.6
2(2)	LONGITUDINAL RIB - I		Ref.02010118402 for detail	Y	PL 12					
MF DR	ST-A(FE410 WA)PLATE				0072-0301-0306					KG
16		AA1011808099	AA10108	38.0	4018.0X100.0	1	16	39.8	0.0	636.8
16(16)	LONGITUDINAL RIB - II		Ref.02010118402 for detail	Y	PL 12					
MF DR	ST-A(FE410 WA)PLATE				0072-0301-0306					KG
17		AA1011808099	AA10108	6.5	704.0X126.0	1	20	8.78	0.0	175.6
20(20)	CIRCUMFERENTIAL RIB - I		Ref.02010118402 for detail	Y	PL 12					
MF DR	ST-A(FE410 WA)PLATE				0072-0301-0306					KG
18		AA1011808099	AA10108	6.3	689.0X126.0	1	20	8.59	0.0	171.8
20(20)	CIRCUMFERENTIAL RIB - 2		Ref.02010118402 for detail	Y	PL 12					
MF DR	ST-A(FE410 WA)PLATE				0072-0301-0306					KG
19		AA1011808099	AA10108	6.2	675.0X125.0	1	17	8.35	0.0	141.95
17(17)	CIRCUMFERENTIAL RIB - 3		Ref.02010118402 for detail	Y	PL 12					
MF DR	ST-A(FE410 WA)PLATE				0072-0301-0306					KG

## ENGG

## TTX

## WTX

	Initial	Date	Initial	Date	Initial	Date
Worked By	stegau	14.06.2021	ttxsk	22.06.2021	wtxman	18.06.2021
Checked By	stegau	22.06.2021	ttxsk	22.06.2021	bk2rd	18.06.2021
Approved By	stedkr	24.06.2021	ttxss	22.06.2021	wtxblm	18.06.2021



# COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010118402 CBOM Var: 00

Revno: 0

Rev Date: 24.06.2021

Description: DRAFT TUBE CONE

Total weight: 11150.0

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty( Total )	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
20		AA1011808099	AA10108	6.0	660.0X125.0	1	17	8.17	0.0	138.89
17(17)	CIRCUMFERENTIAL RIB - 4		Ref.02010118402 for detail	Y	PL 12					
MF DR	ST-A(FE410 WA)PLATE				0072-0301-0306					KG
21		AA1011808099	AA10108	5.9	645.0X124.0	1	17	7.92	0.0	134.64
17(17)	CIRCUMFERENTIAL RIB - 5		Ref.02010118402 for detail	Y	PL 12					
MF DR	ST-A(FE410 WA)PLATE				0072-0301-0306					KG
22		AA1011808099	AA10108	5.8	630.0X123.0	1	17	7.67	0.0	130.39
17(17)	CIRCUMFERENTIAL RIB - 6		Ref.02010118402 for detail	Y	PL 12					
MF DR	ST-A(FE410 WA)PLATE				0072-0301-0306					KG
23		AA1011808099	AA10108	5.6	615.0X123.0	1	17	7.48	0.0	127.16
17(17)	CIRCUMFERENTIAL RIB - 7		Ref.02010118402 for detail	Y	PL 12					
MF DR	ST-A(FE410 WA)PLATE				0072-0301-0306					KG
24		AA1011808099	AA10108	5.5	600.0X122.0	1	18	7.25	0.0	130.5
18(18)	CIRCUMFERENTIAL RIB - 8		Ref.02010118402 for detail	Y	PL 12					
MF DR	ST-A(FE410 WA)PLATE				0072-0301-0306					KG
25		AA1010209183	AA10109	0.65	60.0	1	1	0.97	0.0	0.97
1(1)	TEST COCK BOSS		Ref.02010118402 for detail	Y	RND 50			L=60mm		
MF DR	ST-C20-HR-RND				0072-0315-0317-0306					KG
26		AA1010209183	AA10109	0.7	60.0	1	2	1.0	0.0	2.0
2(2)	TEST GAUGE BOSS		Ref.02010118402 for detail	Y	RND 50			L=60mm		
MF DR	ST-C20-HR-RND				0072-0315-0317-0306					KG
27		AA1011819180	AA10119	20.0	915.0X77.5	1	2	21.1	0.0	42.2
2(2)	FLANGE PLATE 36TK		Ref.02010118402 for detail	Y	PL 36					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
28		AA1011819180	AA10119	17.0	770.0X77.5	1	2	17.7	0.0	35.4
2(2)	FLANGE PLATE 36TK		Ref.02010118402 for detail	Y	PL 36					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
29		AA1011819139	AA10119	9.0	624.0X103.0	1	1	10.6	0.0	10.6
1(1)	BOTTOM FRAME PLATE		Ref.02010118402 for detail	Y	PL 20					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG

ENGG

TTX

WTX

Initial

Date

Initial

Date

Initial

Date

Worked By

stegau

14.06.2021

ttxsk

22.06.2021

wtzman

18.06.2021

Checked By

stegau

22.06.2021

ttxsk

22.06.2021

bk2rd

18.06.2021

Approved By

stedkr

24.06.2021

ttxss

22.06.2021

wtxblm

18.06.2021



# COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010118402 CBOM Var: 00

Revno: 0

Rev Date: 24.06.2021

Description: DRAFT TUBE CONE

Total weight: 11150.0

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty( Total )	Description		Assy. Remarks	Inclusion?	Mat Shape		Remarks			
Type Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
30		AA1011819139	AA10119	17.3	624.0X192.0	1	1	19.8	0.0	19.8
1(1)	TOP FRAME PLATE		Ref.02010118402 for detail	Y	PL 20					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
31		AA1011819139	AA10119	23.0	965.0X165.0	1	2	26.3	0.0	52.6
2(2)	SIDE FRAME PLATE		Ref.02010118402 for detail	Y	PL 20					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
32		AA1011808099	AA10108	4.5	660.0X105.0	1	4	6.86	0.0	27.44
4(4)	CIRCUMFERENTIAL RIB - 9		Ref.02010118402 for detail	Y	PL 12					
MF DR	ST-A(FE410 WA)PLATE				0072-0301-0306					KG
33		AA1011808099	AA10108	4.4	645.0X104.0	1	4	6.64	0.0	26.56
4(4)	CIRCUMFERENTIAL RIB - 10		Ref.02010118402 for detail	Y	PL 12					
MF DR	ST-A(FE410 WA)PLATE				0072-0301-0306					KG
34		AA1011808099	AA10108	4.3	630.0X104.0	1	4	6.48	0.0	25.92
4(4)	CIRCUMFERENTIAL RIB - 11		Ref.02010118402 for detail	Y	PL 12					
MF DR	ST-A(FE410 WA)PLATE				0072-0301-0306					KG
35		AA1011808099	AA10108	4.2	615.0X103.0	1	4	6.27	0.0	25.08
4(4)	CIRCUMFERENTIAL RIB - 12		Ref.02010118402 for detail	Y	PL 12					
MF DR	ST-A(FE410 WA)PLATE				0072-0301-0306					KG
36		AA1011808099	AA10108	4.1	600.0X103.0	1	4	6.12	0.0	24.48
4(4)	CIRCUMFERENTIAL RIB - 13		Ref.02010118402 for detail	Y	PL 12					
MF DR	ST-A(FE410 WA)PLATE				0072-0301-0306					KG
37		HW1041255616	AA10455	0.38	300.0	1	1	0.3	0.0	0.3
1(1)	15NB S.S. SEAMLESS PIPE		21.3 O.D X 2.77TK X 300M	Y	PI 21.3X2.77		L=300mm			
MF DR	ST-B-HFS-PIPE				0072-0315-0306					MR
38		HW1041255772	AA10455	4.0	700.0	1	1	0.7	0.0	0.7
1(1)	50NB SEAMLES PIPE L= 700 MM		60.3 O.D X 4 TK X 700MM L	Y	PI 60.3X4.0		L=700mm			
MF DR	ST-B-HFS-PIPE				0072-0315-0306					MR
39		AA1049355350	AA10455	2.75	350.0	1	2	0.35	0.0	0.7
2(2)	80NB SEAMLESS PIPE 350MM LONG		88.9 X 5.49 X 350	Y	PI 88.9X5.49		L=350mm			
MF DR	PIPE				0072-0315-0306					MR

ENGG

TTX

WTX

Initial

Date

Initial

Date

Initial

Date

Worked By

stegau

14.06.2021

ttxsk

22.06.2021

wtzman

18.06.2021

Checked By

stegau

22.06.2021

ttxsk

22.06.2021

bk2rd

18.06.2021

Approved By

stedkr

24.06.2021

ttxss

22.06.2021

wtxblm

18.06.2021



# COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010118402 CBOM Var: 00

Revno: 0

Rev Date: 24.06.2021

Description: DRAFT TUBE CONE

Total weight: 11150.0

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty( Total )	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
40	42020514508 01	AA1010209167	AA10109	0.5	60.0	1	2	0.62	0.0	1.24
2(2)	BOSS			Y	RND 40					
MF DR	BOSS 1/2 " BSP				0072-0315-0317-0306					KG
41		AA1011819112	AA10119	942.0	5785.0X1567.0	1	2	1197.0	0.0	2394.0
2(2)	MIDDLE CONE SEGMENT 16TK		Ref.02010118402 for detal	Y	PL 16					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
42		AA1011808099	AA10108	9.0	1197.0X80.0	1	1	9.5	0.0	9.5
1(1)	LONGITUDINAL RIB - 3		Ref.02010118402 for detal	Y	PL 12					
MF DR	ST-A(FE410 WA)PLATE				0072-0301-0306					KG
43		AA1011808099	AA10108	5.0	650.0X80.0	1	1	5.2	0.0	5.2
1(1)	LONGITUDINAL RIB - 4		Ref.02010118402 for detal	Y	PL 12					
MF DR	ST-A(FE410 WA)PLATE				0072-0301-0306					KG
44		AA1011808099	AA10108	11.0	1202.0X100.0	1	2	11.9	0.0	23.8
2(2)	LONGITUDINAL RIB - 5		Ref.02010118402 for detal	Y	PL 12					
MF DR	ST-A(FE410 WA)PLATE				0072-0301-0306					KG
45		AA1011808099	AA10108	4.8	675.0X105.0	1	4	7.0	0.0	28.0
4(4)	CIRCUMFERENTIAL RIB - 14		Ref.02010118402 for detal	Y	PL 12					
MF DR	ST-A(FE410 WA)PLATE				0072-0301-0306					KG
46		AA1011819112	AA10119	860.0	5345.0X1545.0	1	1	1090.0	0.0	1090.0
1(1)	UPPER CONE SEGMENT 16TK		Ref.02010118402 for detal	Y	PL 16					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG

CB

	ENGG		TTX		WTX	
	Initial	Date	Initial	Date	Initial	Date
Worked By	stegau	14.06.2021	ttxsk	22.06.2021	wtxman	18.06.2021
Checked By	stegau	22.06.2021	ttxsk	22.06.2021	bk2rd	18.06.2021
Approved By	stedkr	24.06.2021	ttxss	22.06.2021	wtxblm	18.06.2021



## COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010218402 CBOM Var: 01 Revno: 0 Rev Date: 10.07.2021  
Description: DRAFT TUBE ELBOW LINER (FAB) Total weight: 2610.0

CBOM - 02010218402 01

	ENGG		TTX		WTX	
	Initial	Date	Initial	Date	Initial	Date
Worked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Checked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Approved By	stedkr	10.07.2021	tbnmrkr	08.07.2021	wtxblm	07.07.2021





# COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010218402 CBOM Var: 01  
Description: DRAFT TUBE ELBOW LINER (FAB)

Revno: 0

Rev Date: 10.07.2021

Total weight: 2610.0

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty( Total )	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
0	02010218402 01			2610.0						
1(1)	DRAFT TUBE ELBOW LINER (FAB)			Y						
MF CD			N		0306-0236					
8		AA1011819090	AA10119	422.5	7120.0X930.0	1	1	655.5	0.0	655.5
1(1)	Item no. 8 of drg 02010220202		Section 1-2 RH	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
9		AA1011819090	AA10119	422.5	7120.0X930.0	1	1	655.5	0.0	655.5
1(1)	Item no.9 of drg 02010218402		Section 1-2 LH	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
10		AA1011819090	AA10119	520.0	1200.0X7280.0	1	1	864.8	0.0	864.8
1(1)	Item no 10 of drg 02010218402		Section 2-3 RH	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
11		AA1011819090	AA10119	520.0	1200.0X7280.0	1	1	864.8	0.0	864.8
1(1)	Item no 11 of drg 02010218402		Section 2-3 LH	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
30		AA1011819090	AA10119	102.0	3377.0X1644.0	1	2	549.6	0.0	1099.2
2(2)	Stiffner 12 TK		Refer #30 of 02010218402	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
31		AA1011819090	AA10119	107.0	3527.0X1706.0	1	2	595.6	0.0	1191.2
2(2)	Stiffener 12 TK		Item #31 of 02010218402	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
46		AA1012508137	AA10108	0.77	70.0	1	2	0.81	0.0	1.62
2(2)	Angle L=70mm		Refer #46 of 02010218402	Y	75X75X8			L=70mm		
MF DR	ST-A(FE410 WA)ANGLE				0072-0301-0317-0306					KG
47		AA1012508137	AA10108	2.4	220.0	1	12	2.52	0.0	30.24
12(12)	Angle L=220		Refer #47 of 02010218402	Y	75X75X8			L=220mm		
MF DR	ST-A(FE410 WA)ANGLE				0072-0301-0317-0306					KG
48	32302949140 03	AA1011819180	AA10119	5.0	150.0X125.0	1	8	5.6	0.0	44.8
8(8)	LIFTING LUG			Y	PL 36					
MF CD	LIFTING LUG-3.5T				0072-0301-0317-0306					KG

ENGG

TTX

WTX

Initial

Date

Initial

Date

Initial

Date

Worked By

stemag

10.06.2021

ttxsso

08.07.2021

bk2rd

07.07.2021

Checked By

stemag

10.06.2021

ttxsso

08.07.2021

bk2rd

07.07.2021

Approved By

stedkr

10.07.2021

tbrmrkr

08.07.2021

wtxblm

07.07.2021



## COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010218402 CBOM Var: 01  
Description: DRAFT TUBE ELBOW LINER (FAB)

Revno: 0

Rev Date: 10.07.2021

Total weight: 2610.0

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty( Total )	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
49		AA1012508129	AA10108	21.76	3200.0	1	1	22.85	0.0	22.85
1(1)	Transport stays angle L 3200			Y	75X75X6			L=3200mm		
RM DR	ST-A(FE410 WA)ANGLE				0072-0301-0306					KG

CBOM - 02010218402 01

	ENGG		TTX		WTX	
	Initial	Date	Initial	Date	Initial	Date
Worked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Checked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Approved By	stedkr	10.07.2021	tbnmrkr	08.07.2021	wtxblm	07.07.2021



## COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010218402 CBOM Var: 02 Revno: 0 Rev Date: 10.07.2021  
Description: DRAFT TUBE ELBOW LINER (FAB) Total weight: 2878.0

CBOM - 02010218402 02

	ENGG		TTX		WTX	
	Initial	Date	Initial	Date	Initial	Date
Worked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Checked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Approved By	stedkr	10.07.2021	tbnmrkr	08.07.2021	wtxblm	07.07.2021



# COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010218402 CBOM Var: 02  
 Description: DRAFT TUBE ELBOW LINER (FAB)

Revno: 0

Rev Date: 10.07.2021

Total weight: 2878.0

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty( Total )	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
0	02010218402 02			2878.0						
1(1)	DRAFT TUBE ELBOW LINER (FAB)			Y						
MF CD			N		0306-0236					
12		AA1011819090	AA10119	545.0	1245.0X7445.0	1	1	917.6	0.0	917.6
1(1)	Item no 12 of 02010218402		Section 3-4 RH	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
14		AA1011819090	AA10119	575.0	1620.0X7720.0	1	1	1238.0	0.0	1238.0
1(1)	Item no 14 of 02010218402		Section 4-5 RH	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
16		AA1011819090	AA10119	615.0	1770.0X8045.0	1	1	1410.0	0.0	1410.0
1(1)	Item no 16 of 02010218402		Section 5-6 RH	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
31		AA1011819090	AA10119	107.0	3527.0X1706.0	1	1	595.6	0.0	595.6
1(1)	Stiffener 12 TK		Refer #31 of 02010218402	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
32		AA1011819090	AA10119	111.0	3435.0X1666.0	1	1	566.5	0.0	566.5
1(1)	Stiffener 12 TK		Refer #32 of 02010218402	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
33		AA1011819090	AA10119	121.0	3200.0X1570.0	1	1	497.0	0.0	497.0
1(1)	Stiffner 12TK		Refer #33 of 02010218402	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
38		AA1011819139	AA10119	119.0	1165.0X1161.0	1	2	223.2	0.0	446.4
2(2)	RIB 20 TK		Refer #38 of 02010218402	Y	PL 20					
MF	ST-FE410 WB-PLATE				0072-0301-0306					KG
39		AA1011819139	AA10119	62.0	826.0X620.0	1	2	84.5	0.0	169.0
2(2)	RIB 20 TK		Refer #39 of 02010218402	Y	PL 20					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
44		AA1011819198	AA10119	120.0	620.0X620.0	1	2	126.8	0.0	253.6
2(2)	Support plate 40 TK		Refer #44 of 02010218402	Y	PL 40			620mm Square flame cut		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG

ENGG

TTX

WTX

Initial

Date

Initial

Date

Initial

Date

Worked By

stemag

10.06.2021

ttxsso

08.07.2021

bk2rd

07.07.2021

Checked By

stemag

10.06.2021

ttxsso

08.07.2021

bk2rd

07.07.2021

Approved By

stedkr

10.07.2021

tbnmrkr

08.07.2021

wtxblm

07.07.2021



# COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010218402 CBOM Var: 02  
Description: DRAFT TUBE ELBOW LINER (FAB)

Revno: 0

Rev Date: 10.07.2021

Total weight: 2878.0

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty( Total )	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
45		AA1010209264	AA10109	3.0	65.0	1	2	3.9	0.0	7.8
2(2)	Boss Dia 500		Refer #45 of 02010218402	Y	RND 100					
MF DR	ST-C20-HR-RND				0072-0315-0317-0306					KG
46		AA1012508137	AA10108	0.77	70.0	1	6	0.81	0.0	4.86
6(6)	Angle L=70		Refer #46 of 02010220202	Y	75X75X8			L=70mm		
MF DR	ST-A(FE410 WA)ANGLE				0072-0301-0317-0306					KG
47		AA1012508137	AA10108	2.4	220.0	1	14	2.6	0.0	36.4
14(14)	Angle L=220		Refer #47 of 02010220202	Y	75X75X8			L=220mm		
MF DR	ST-A(FE410 WA)ANGLE				0072-0301-0317-0306					KG
48	32302949140 03	AA1011819180	AA10119	5.0	150.0X125.0	1	6	5.6	0.0	33.6
6(6)	LIFTING LUG			Y	PL 36					
MF DR	LIFTING LUG-3.5T				0072-0301-0317-0306					KG
49		AA1012508129	AA10108	16.32	2400.0	1	1	17.14	0.0	17.14
1(1)	Transport stays angle L=2400			Y	75X75X6			L=2400mm		
RM DR	ST-A(FE410 WA)ANGLE				0072-0301-0306					KG

CBOM - 02

	ENGG		TTX		WTX	
	Initial	Date	Initial	Date	Initial	Date
Worked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Checked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Approved By	stedkr	10.07.2021	tbnmrkr	08.07.2021	wtxblm	07.07.2021



## COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010218402 CBOM Var: 03 Revno: 0 Rev Date: 10.07.2021  
Description: DRAFT TUBE ELBOW LINER (FAB) Total weight: 2878.0

CBOM - 02010218402 03

	ENGG		TTX		WTX	
	Initial	Date	Initial	Date	Initial	Date
Worked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Checked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Approved By	stedkr	10.07.2021	tbnmrkr	08.07.2021	wtxblm	07.07.2021



# COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010218402 CBOM Var: 03  
Description: DRAFT TUBE ELBOW LINER (FAB)

Revno: 0

Rev Date: 10.07.2021

Total weight: 2878.0

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty( Total )	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
0	02010218402 03			2878.0						
1(1)	DRAFT TUBE ELBOW LINER (FAB)			Y						
MF CD			N		0306-0236					
13		AA1011819090	AA10119	545.0	1245.0X7445.0	1	1	917.6	0.0	917.6
1(1)	Item no 13 of 02010218402		Section 3-4 LH	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
15		AA1011819090	AA10119	575.0	1620.0X7720.0	1	1	1238.1	0.0	1238.1
1(1)	Item no. 15 of 02010218402		Section 4-5 LH	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
17		AA1011819090	AA10119	615.0	1770.0X8045.0	1	1	1410.0	0.0	1410.0
1(1)	Item no. 17 of 02010218402		Section 5-6 LH	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
31		AA1011819090	AA10119	107.0	3527.0X1706.0	1	1	595.6	0.0	595.6
1(1)	Stiffener 12 TK		Refer #31 of 02010218402	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
32		AA1011819090	AA10119	111.0	3435.0X1666.0	1	1	566.5	0.0	566.5
1(1)	Stiffener 12 TK		Refer #32 of 02010218402	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
33		AA1011819090	AA10119	121.0	3200.0X1570.0	1	1	497.0	0.0	497.0
1(1)	Stiffner 12TK		Refer #33 of 02010218402	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
38		AA1011819139	AA10119	119.0	1165.0X1161.0	1	2	223.2	0.0	446.4
2(2)	RIB 20 TK		Refer #38 of 02010218402	Y	PL 20					
MF	ST-FE410 WB-PLATE				0072-0301-0306					KG
39		AA1011819139	AA10119	62.0	826.0X620.0	1	2	84.5	0.0	169.0
2(2)	RIB 20 TK		Refer #39 of 02010218402	Y	PL 20					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
44		AA1011819198	AA10119	120.0	620.0X620.0	1	2	126.8	0.0	253.6
2(2)	Support plate 40 TK		Refer #44 of 02010218402	Y	PL 40			620mm Square flame cut		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG

ENGG

TTX

WTX

Initial

Date

Initial

Date

Initial

Date

Worked By

stemag

10.06.2021

ttxsso

08.07.2021

bk2rd

07.07.2021

Checked By

stemag

10.06.2021

ttxsso

08.07.2021

bk2rd

07.07.2021

Approved By

stedkr

10.07.2021

tbrmrkr

08.07.2021

wtxblm

07.07.2021



# COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010218402 CBOM Var: 03  
 Description: DRAFT TUBE ELBOW LINER (FAB)

Revno: 0

Rev Date: 10.07.2021

Total weight: 2878.0

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty( Total )	Description		Assy. Remarks	Inclusion?	Mat Shape		Remarks			
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
45		AA1010209264	AA10109	3.0	65.0	1	2	3.9	0.0	7.8
2(2)	Boss Dia 500		Refer #45 of 02010218402	Y	RND 100					
MF DR	ST-C20-HR-RND				0072-0301-0317-0306					KG
46		AA1012508137	AA10108	0.77	70.0	1	6	0.81	0.0	4.86
6(6)	Angle L=70		Refer #46 of 02010220202	Y	75X75X8		L=70mm			
MF DR	ST-A(FE410 WA)ANGLE				0072-0301-0317-0306					KG
47		AA1012508137	AA10108	2.4	220.0	1	14	2.6	0.0	36.4
14(14)	Angle L=220		Refer #47 of 02010220202	Y	75X75X8		L=220mm			
MF DR	ST-A(FE410 WA)ANGLE				0072-0301-0317-0306					KG
48	32302949140 03	AA1011819180	AA10119	5.0	150.0X125.0	1	6	5.6	0.0	33.6
6(6)	LIFTING LUG			Y	PL 36					
MF DR	LIFTING LUG-3.5T				0072-0301-0317-0306					KG
49		AA1012508129	AA10108	16.32	2400.0	1	1	17.2	0.0	17.2
1(1)	Transport stays angle L=2400			Y	75X75X6		L=2400mm			
RM DR	ST-A(FE410 WA)ANGLE				0072-0301-0306					KG

CBOM - 02

	ENGG		TTX		WTX	
	Initial	Date	Initial	Date	Initial	Date
Worked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Checked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Approved By	stedkr	10.07.2021	tbnmrkr	08.07.2021	wtxblm	07.07.2021





## COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010218402 CBOM Var: 04 Revno: 0 Rev Date: 10.07.2021  
Description: DRAFT TUBE ELBOW LINER (FAB) Total weight: 3090.0

CBOM - 02010218402 04

	ENGG		TTX		WTX	
	Initial	Date	Initial	Date	Initial	Date
Worked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Checked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Approved By	stedkr	10.07.2021	tbnmrkr	08.07.2021	wtxblm	07.07.2021



# COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010218402 CBOM Var: 04  
 Description: DRAFT TUBE ELBOW LINER (FAB)

Revno: 0

Rev Date: 10.07.2021

Total weight: 3090.0

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty( Total )	Description		Assy. Remarks	Inclusion?	Mat Shape		Remarks			
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
0	02010218402 04			3090.0						
1(1)	DRAFT TUBE ELBOW LINER (FAB)			Y						
MF CD			N		0306-0236					
18		AA1011819090	AA10119	625.0	1920.0X8440.0	1	1	1604.0	0.0	1604.0
1(1)	Item no 18 of 02010218402		Section 6-7 RH	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
20		AA1011819090	AA10119	657.5	2230.0X8765.0	1	1	1935.0	0.0	1935.0
1(1)	Item no 20 of 02010218402		Section 7-8 RH	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
22		AA1011819090	AA10119	660.0	2070.0X9320.0	1	1	1909.0	0.0	1909.0
1(1)	Item no 22 of 02010218402		Section 8-9 RH	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
33		AA1011819090	AA10119	121.0	3200.0X1570.0	1	1	497.0	0.0	497.0
1(1)	Stiffner 12TK		Refer #33 of 02010218402	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
34		AA1011819090	AA10119	132.0	2888.0X1764.0	1	1	504.0	0.0	504.0
1(1)	Stiffener 12 TK		Refer #34 of 02010218402	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
35		AA1011819090	AA10119	141.0	2665.0X1688.0	1	1	445.0	0.0	445.0
1(1)	Stiffener 12 TK		Refer #35 of 02010218402	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
40		AA1011819139	AA10119	55.7	840.0X620.0	1	2	86.0	0.0	172.0
2(2)	RIB 20 TK		Refer #40 of 02010218402	Y	PL 20					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
41		AA1011819139	AA10119	47.0	620.0X570.0	1	2	58.3	0.0	116.6
2(2)	RIB 20 TK		Refer #41 of 02010218402	Y	PL 20					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
44		AA1011819198	AA10119	120.0	620.0X620.0	1	2	126.8	0.0	253.6
2(2)	Support plate 40 TK		Refer #44 of 02010218402	Y	PL 40			620mm Square flame cut		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG

ENGG

TTX

WTX

Initial

Date

Initial

Date

Initial

Date

Worked By

stemag

10.06.2021

ttxsso

08.07.2021

bk2rd

07.07.2021

Checked By

stemag

10.06.2021

ttxsso

08.07.2021

bk2rd

07.07.2021

Approved By

stedkr

10.07.2021

tbnmrkr

08.07.2021

wtxblm

07.07.2021



# COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010218402 CBOM Var: 04  
Description: DRAFT TUBE ELBOW LINER (FAB)

Revno: 0

Rev Date: 10.07.2021

Total weight: 3090.0

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty( Total )	Description		Assy. Remarks	Inclusion?	Mat Shape		Remarks			
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
45		AA1010209264	AA10109	3.0	65.0	1	2	3.9	0.0	7.8
2(2)	Boss Dia 500		Refer #45 of 02010218402	Y	RND 100					
MF DR	ST-C20-HR-RND				0072-0315-0317-0306					KG
46		AA1012508137	AA10108	0.77	70.0	1	5	0.81	0.0	4.05
5(5)	Angle L=70		Refer #46 of 02010220202	Y	75X75X8		L=70mm			
MF DR	ST-A(FE410 WA)ANGLE				0072-0301-0306					KG
47		AA1012508137	AA10108	2.4	220.0	1	18	2.6	0.0	46.8
18(18)	Angle L=220		Refer #47 of 02010220202	Y	75X75X8		L=220mm			
MF DR	ST-A(FE410 WA)ANGLE				0072-0301-0317-0306					KG
48	32302949140 03	AA1011819180	AA10119	5.0	150.0X125.0	1	8	5.6	0.0	44.8
8(8)	LIFTING LUG			Y	PL 36					
MF DR	LIFTING LUG-3.5T				0072-0301-0317-0306					KG
49		AA1012508129	AA10108	21.76	3400.0	1	1	22.9	0.0	22.9
1(1)	Transport stays angle L=3400			Y	75X75X6		L=3400mm			
RM DR	ST-A(FE410 WA)ANGLE				0072-0301-0306					KG

CBOM - 02

	ENGG		TTX		WTX	
	Initial	Date	Initial	Date	Initial	Date
Worked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Checked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Approved By	stedkr	10.07.2021	tbnrkr	08.07.2021	wtxblm	07.07.2021



## COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010218402 CBOM Var: 05 Revno: 0 Rev Date: 10.07.2021  
Description: DRAFT TUBE ELBOW LINER (FAB) Total weight: 3090.0

CBOM - 02010218402 05

	ENGG		TTX		WTX	
	Initial	Date	Initial	Date	Initial	Date
Worked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Checked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Approved By	stedkr	10.07.2021	tbnmrkr	08.07.2021	wtxblm	07.07.2021



# COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010218402 CBOM Var: 05  
 Description: DRAFT TUBE ELBOW LINER (FAB)

Revno: 0

Rev Date: 10.07.2021

Total weight: 3090.0

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty( Total )	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
0	02010218402 05			3090.0						
1(1)	DRAFT TUBE ELBOW LINER (FAB)			Y						
MF CD			N		0306-0236					
19		AA1011819090	AA10119	625.0	1920.0X8440.0	1	1	1604.0	0.0	1604.0
1(1)	Item no 19 of 02010218402		Section 6-7 LH	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
21		AA1011819090	AA10119	657.5	2230.0X8765.0	1	1	1935.0	0.0	1935.0
1(1)	Item no 21 of 02010218402		Section 7-8 LH	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
23		AA1011819090	AA10119	660.0	2070.0X9320.0	1	1	1910.0	0.0	1910.0
1(1)	Item no 23 of 02010218402		Section 8-9 LH	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
33		AA1011819090	AA10119	121.0	3200.0X1570.0	1	1	497.0	0.0	497.0
1(1)	Stiffner 12TK		Refer #33 of 02010218402	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
34		AA1011819090	AA10119	132.0	2888.0X1764.0	1	1	504.0	0.0	504.0
1(1)	Stiffener 12 TK		Refer #34 of 02010218402	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
35		AA1011819090	AA10119	141.0	2665.0X1688.0	1	1	445.0	0.0	445.0
1(1)	Stiffener 12 TK		Refer #35 of 02010218402	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
40		AA1011819139	AA10119	55.7	840.0X620.0	1	2	85.9	0.0	171.8
2(2)	RIB 20 TK		Refer #40 of 02010218402	Y	PL 20					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
41		AA1011819139	AA10119	47.0	620.0X570.0	1	2	58.3	0.0	116.6
2(2)	RIB 20 TK		Refer #41 of 02010218402	Y	PL 20					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
44		AA1011819198	AA10119	120.0	620.0X620.0	1	2	126.8	0.0	253.6
2(2)	Support plate 40 TK		Refer #44 of 02010218402	Y	PL 40			620mm Square flame cut		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG

ENGG

TTX

WTX

Initial

Date

Initial

Date

Initial

Date

Worked By

stemag

10.06.2021

ttxsso

08.07.2021

bk2rd

07.07.2021

Checked By

stemag

10.06.2021

ttxsso

08.07.2021

bk2rd

07.07.2021

Approved By

stedkr

10.07.2021

tbnmrkr

08.07.2021

wtxblm

07.07.2021



# COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010218402 CBOM Var: 05  
Description: DRAFT TUBE ELBOW LINER (FAB)

Revno: 0

Rev Date: 10.07.2021

Total weight: 3090.0

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty( Total )	Description		Assy. Remarks	Inclusion?	Mat Shape		Remarks			
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
45		AA1010209264	AA10109	3.0	65.0	1	2	3.9	0.0	7.8
2(2)	Boss Dia 500		Refer #45 of 02010218402	Y	RND 100					
MF DR	ST-C20-HR-RND				0072-0315-0317-0306					KG
46		AA1012508137	AA10108	0.77	70.0	1	5	0.81	0.0	4.05
5(5)	Angle L=70		Refer #46 of 02010220202	Y	75X75X8		L=70mm			
MF DR	ST-A(FE410 WA)ANGLE				0072-0301-0317-0306					KG
47		AA1012508137	AA10108	2.4	220.0	1	18	2.6	0.0	46.8
18(18)	Angle L=220		Refer #47 of 02010220202	Y	75X75X8		L=220mm			
MF DR	ST-A(FE410 WA)ANGLE				0072-0301-0317-0306					KG
48	32302949140 03	AA1011819180	AA10119	5.0	150.0X125.0	1	8	5.6	0.0	44.8
8(8)	LIFTING LUG			Y	PL 36					
MF DR	LIFTING LUG-3.5T				0072-0301-0317-0306					KG
49		AA1012508129	AA10108	21.76	3400.0	1	1	22.85	0.0	22.85
1(1)	Transport stays angle L=3400			Y	75X75X6		L=3400mm			
RM DR	ST-A(FE410 WA)ANGLE				0072-0301-0306					KG

CBOM - 02

	ENGG		TTX		WTX	
	Initial	Date	Initial	Date	Initial	Date
Worked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Checked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Approved By	stedkr	10.07.2021	tbnmrkr	08.07.2021	wtxblm	07.07.2021



## COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010218402 CBOM Var: 06 Revno: 0 Rev Date: 10.07.2021  
Description: DRAFT TUBE ELBOW LINER (FAB) Total weight: 3410.0

CBOM - 02010218402 06

	ENGG		TTX		WTX	
	Initial	Date	Initial	Date	Initial	Date
Worked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Checked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Approved By	stedkr	10.07.2021	tbnmrkr	08.07.2021	wtxblm	07.07.2021



# COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010218402 CBOM Var: 06  
Description: DRAFT TUBE ELBOW LINER (FAB)

Revno: 0

Rev Date: 10.07.2021

Total weight: 3410.0

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty( Total )	Description		Assy. Remarks	Inclusion?	Mat Shape		Remarks			
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
0	02010218402 06			3410.0						
1(1)	DRAFT TUBE ELBOW LINER (FAB)			Y						
MF CD			N		0306-0236					
24		AA1011819090	AA10119	670.0	1680.0X10040.0	1	1	1669.0	0.0	1669.0
1(1)	Item no 24 of 02010218402		Section 9-10 RH	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
26		AA1011819090	AA10119	605.0	1630.0X10040.0	1	1	1620.0	0.0	1620.0
1(1)	Item no 26 of 02010218402		SECTION 10-11 RH	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
28		AA1011819090	AA10119	652.5	1395.0X10320.0	1	1	1425.0	0.0	1425.0
1(1)	Item no of 28 of 02010218402		SECTION 11-12 RH	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
35		AA1011819090	AA10119	141.0	2665.0X1688.0	1	1	445.0	0.0	445.0
1(1)	Stiffener 12 TK		Refer #35 of 02010218402	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
36		AA1011819090	AA10119	146.0	2552.0X1640.0	1	1	414.0	0.0	414.0
1(1)	Stiffener 12 TK		REFER #36 OF 02010218402	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
37		AA1011819090	AA10119	151.0	2523.0X1630.0	1	1	407.0	0.0	407.0
1(1)	Stiffener 12 TK		REFER #37 OF 02010218402	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
42		AA1011819139	AA10119	35.0	620.0X405.0	1	4	41.4	0.0	165.6
4(4)	RIB 20 TK		REFER #42 OF 02010218402	Y	PL 20					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
43		AA1011819139	AA10119	25.0	620.0X255.0	1	4	26.1	0.0	104.4
4(4)	RIB 20 TK		REFER #43 OF 02010218402	Y	PL 20					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
44		AA1011819198	AA10119	120.0	620.0X620.0	1	4	126.8	0.0	507.2
4(4)	Support plate 40 TK		Refer #44 of 02010218402	Y	PL 40		620mm Square flame cut			
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG

ENGG

TTX

WTX

Initial

Date

Initial

Date

Initial

Date

Worked By

stemag

10.06.2021

ttxsso

08.07.2021

bk2rd

07.07.2021

Checked By

stemag

10.06.2021

ttxsso

08.07.2021

bk2rd

07.07.2021

Approved By

stedkr

10.07.2021

tbrmrkr

08.07.2021

wtxblm

07.07.2021





# COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010218402 CBOM Var: 06  
Description: DRAFT TUBE ELBOW LINER (FAB)

Revno: 0

Rev Date: 10.07.2021

Total weight: 3410.0

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty( Total )	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
45		AA1010209264	AA10109	3.0	65.0	1	4	3.9	0.0	15.6
4(4)	Boss Dia 500		Refer #45 of 02010218402	Y	RND 100					
MF DR	ST-C20-HR-RND				0072-0301-0317-0306					KG
46		AA1012508137	AA10108	0.77	70.0	1	5	0.81	0.0	4.05
5(5)	Angle L=70		Refer #46 of 02010220202	Y	75X75X8			L=70mm		
MF DR	ST-A(FE410 WA)ANGLE				0072-0301-0317-0306					KG
47		AA1012508137	AA10108	2.4	220.0	1	10	2.6	0.0	26.0
10(10)	Angle L=220		Refer #47 of 02010220202	Y	75X75X8			L=220mm		
MF DR	ST-A(FE410 WA)ANGLE				0072-0301-0317-0306					KG
48	32302949140 03	AA1011819180	AA10119	5.0	150.0X125.0	1	8	5.6	0.0	44.8
8(8)	LIFTING LUG			Y	PL 36					
MF DR	LIFTING LUG-3.5T				0072-0301-0317-0306					KG
49		AA1012508129	AA10108	24.48	3600.0	1	1	25.7	0.0	25.7
1(1)	Transport stays angle L=3600			Y	75X75X6			L=3600mm		
RM DR	ST-A(FE410 WA)ANGLE				0072-0301-0306					KG

CBOM - 02

	ENGG		TTX		WTX	
	Initial	Date	Initial	Date	Initial	Date
Worked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Checked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Approved By	stedkr	10.07.2021	tbnmrkr	08.07.2021	wtxblm	07.07.2021



## COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010218402 CBOM Var: 07 Revno: 0 Rev Date: 10.07.2021  
Description: DRAFT TUBE ELBOW LINER (FAB) Total weight: 3410.0

CBOM - 02010218402 07

	ENGG		TTX		WTX	
	Initial	Date	Initial	Date	Initial	Date
Worked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Checked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Approved By	stedkr	10.07.2021	tbnmrkr	08.07.2021	wtxblm	07.07.2021



# COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010218402 CBOM Var: 07  
 Description: DRAFT TUBE ELBOW LINER (FAB)

Revno: 0

Rev Date: 10.07.2021

Total weight: 3410.0

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty( Total )	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
0	02010218402 07			3410.0						
1(1)	DRAFT TUBE ELBOW LINER (FAB)			Y						
MF CD			N		0306-0236					
25		AA1011819090	AA10119	670.0	1680.0X10040.0	1	1	1669.0	0.0	1669.0
1(1)	Item no 25 of 02010218402		Section 9-10 LH	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
27		AA1011819090	AA10119	605.0	1630.0X10040.0	1	1	1620.0	0.0	1620.0
1(1)	Item no 27 of 02010218402		Section 10-11 LH	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
29		AA1011819090	AA10119	652.5	1395.0X10320.0	1	1	1425.0	0.0	1425.0
1(1)	Item no 29 of 02010218402		SECTION 11-12 LH	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
35		AA1011819090	AA10119	141.0	2665.0X1688.0	1	1	445.0	0.0	445.0
1(1)	Stiffener 12 TK		Refer #35 of 02010218402	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
36		AA1011819090	AA10119	146.0	2552.0X1640.0	1	1	414.0	0.0	414.0
1(1)	Stiffener 12 TK		REFER #36 OF 02010218402	Y	PL 12					
MF	ST-FE410 WB-PLATE				0072-0301-0306					KG
37		AA1011819090	AA10119	151.0	2523.0X1630.0	1	1	407.0	0.0	407.0
1(1)	Stiffener 12 TK		REFER #37 OF 02010218402	Y	PL 12					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
42		AA1011819139	AA10119	35.0	620.0X405.0	1	4	41.4	0.0	165.6
4(4)	RIB 20 TK		REFER #42 OF 02010218402	Y	PL 20					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
43		AA1011819139	AA10119	25.0	620.0X255.0	1	4	26.1	0.0	104.4
4(4)	RIB 20 TK		REFER #43 OF 02010218402	Y	PL 20					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
44		AA1011819198	AA10119	120.0	620.0X620.0	1	4	126.8	0.0	507.2
4(4)	Support plate 40 TK		Refer #44 of 02010218402	Y	PL 40			620mm Square flame cut		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG

ENGG

TTX

WTX

Initial

Date

Initial

Date

Initial

Date

Worked By

stemag

10.06.2021

ttxsso

08.07.2021

bk2rd

07.07.2021

Checked By

stemag

10.06.2021

ttxsso

08.07.2021

bk2rd

07.07.2021

Approved By

stedkr

10.07.2021

tbrmrkr

08.07.2021

wtxblm

07.07.2021



# COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02010218402 CBOM Var: 07  
Description: DRAFT TUBE ELBOW LINER (FAB)

Revno: 0

Rev Date: 10.07.2021

Total weight: 3410.0

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty( Total )	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
45		AA1010209264	AA10109	3.0	65.0	1	4	3.9	0.0	15.6
4(4)	Boss Dia 500		Refer #45 of 02010218402	Y	RND 100					
MF DR	ST-C20-HR-RND				0072-0315-0317-0306					KG
46		AA1012508137	AA10108	0.77	70.0	1	5	0.81	0.0	4.05
5(5)	Angle L=70		Refer #46 of 02010220202	Y	75X75X8			L=70mm		
MF DR	ST-A(FE410 WA)ANGLE				0072-0301-0317-0306					KG
47		AA1012508137	AA10108	2.4	220.0	1	10	2.6	0.0	26.0
10(10)	Angle L=220		Refer #47 of 02010220202	Y	75X75X8			L=220mm		
MF DR	ST-A(FE410 WA)ANGLE				0072-0301-0317-0306					KG
48	32302949140 03	AA1011819180	AA10119	5.0	150.0X125.0	1	8	5.6	0.0	44.8
8(8)	LIFTING LUG			Y	PL 36					
MF DR	LIFTING LUG-3.5T				0072-0301-0317-0306					KG
49		AA1012508129	AA10108	24.48	3600.0	1	1	25.7	0.0	25.7
1(1)	Transport stays angle L=3600			Y	75X75X6			L=3600mm		
RM DR	ST-A(FE410 WA)ANGLE				0072-0301-0306					KG

CBOM - 02

	ENGG		TTX		WTX	
	Initial	Date	Initial	Date	Initial	Date
Worked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Checked By	stemag	10.06.2021	ttxsso	08.07.2021	bk2rd	07.07.2021
Approved By	stedkr	10.07.2021	tbnmrkr	08.07.2021	wtxblm	07.07.2021



## COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02020721502 CBOM Var: 01 Revno: 0 Rev Date: 22.06.2021  
Description: PIT LINER (WELDED ASSEMBLY) Total weight: 9250.0

CBOM - 02020721502 01

	ENGG		TTX		WTX	
	Initial	Date	Initial	Date	Initial	Date
Worked By	stejm	09.06.2021	ttxsk	22.06.2021	bk2rd	18.06.2021
Checked By	stejm	21.06.2021	ttxsk	22.06.2021	bk2rd	18.06.2021
Approved By	stemb	22.06.2021	ttxss	22.06.2021	wtxblm	18.06.2021



# COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02020721502 CBOM Var: 01  
 Description: PIT LINER (WELDED ASSEMBLY)

Revno: 0

Rev Date: 22.06.2021

Total weight: 9250.0

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty( Total )	Description		Assy. Remarks	Inclusion?	Mat Shape		Remarks			
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
0	02020721502 01			9250.0						
1(1)	PIT LINER (WELDED ASSEMBLY)			Y						
MF	PIT LINER VAR-01		N	9250.0	0306-0236					
1		AA1011819139	AA10119	187.0	5215.0X1330.0	1	1	1144.43	0.0	1144.43
1(1)	BASE PLATE		REF DRG 02020721502	Y	PL 20		Cut in 2 segments			
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
2		AA1011819074	AA10119	838.0	930.0X11483.0	1	1	925.0	0.0	925.0
1(1)	UPPER CYLINDER HALF		REF DRG 02020721502	Y	PL 10					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
5		AA1011819074	AA10119	927.0	3575.0X6920.0	1	1	2041.0	0.0	2041.0
1(1)	BOTTOM PLATE		REF DRG 02020721502	Y	PL 10		offcut generated			
MF DR	ST-FE410 WB-PLATE				0072-0301-0317-0306					KG
6		AA1011819074	AA10119	962.0	3575.0X6920.0	1	1	2041.0	0.0	2041.0
1(1)	TOP PLATE		REF DRG 02020721502	Y	PL 10		offcut generated			
MF DR	ST-FE410 WB-PLATE				0072-0301-0317-0306					KG
7		AA1011819074	AA10119	525.0	2190.0X3055.0	1	2	552.0	0.0	1104.0
2(2)	SIDE PLATE		REF DRG 02020721502	Y	PL 10					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
8		AA1011819074	AA10119	981.0	2190.0X6620.0	1	1	1196.1	0.0	1196.1
1(1)	END PLATE		REF DRG 02020721502	Y	PL 10					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
9		AA1011819074	AA10119	279.0	310.0X11483.0	1	1	294.0	0.0	294.0
1(1)	LOWER CYLINDER HALF		REF DRG 02020721502	Y	PL 10					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
10		AA1011819074	AA10119	280.0	2210.0X1614.0	1	2	294.3	0.0	588.6
2(2)	CYLINDER SEGMENT		REF DRG 02020721502	Y	PL 10					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
11		AA1011819074	AA10119	40.6	150.0X3450.0	1	2	42.7	0.0	85.4
2(2)	VERTICAL RIB		REF DRG 02020721502	Y	PL 10					
MF DR	ST-FE410 WB-PLATE				0072-0301-0317-0306					KG

**ENGG****TTX****WTX**

Worked By	stejm	09.06.2021	ttxsk	22.06.2021	bk2rd	18.06.2021
Checked By	stejm	21.06.2021	ttxsk	22.06.2021	bk2rd	18.06.2021
Approved By	stemb	22.06.2021	ttxss	22.06.2021	wtxblm	18.06.2021



# COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02020721502 CBOM Var: 01  
Description: PIT LINER (WELDED ASSEMBLY)

Revno: 0

Rev Date: 22.06.2021

Total weight: 9250.0

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty( Total )	Description		Assy. Remarks	Inclusion?	Mat Shape		Remarks			
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
12		AA1011819074	AA10119	0.28	50.0X100.0	1	9	0.42	0.0	3.78
9(9)	STIFFNER		REF DRG 02020721502	Y	PL 10					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
13	22011018501 12	AA1012508129	AA10108	2.0	250.0	1	12	2.1	0.0	25.2
12(12)	DETAILS FOR LOWER PIT LINER			Y	75X75X6		L=250mm			
MF DR	LOWER PIT LINER VAR12				0072-0301-0317-0306					KG
14		AA1011819074	AA10119	26.0	150.0X2190.0	1	16	27.1	0.0	433.6
16(16)	Vertical Rib		REF DRG 02020721502	Y	PL 10					
MF DR	ST-FE410 WB-PLATE				0072-0301-0317-0306					KG
15		AA1011819074	AA10119	11.0	150.0X930.0	1	4	11.5	0.0	46.0
4(4)	VERTICAL RIB FLATE 10X150X930		REF DRG 02020721502	Y	PL 10					
MF DR	ST-FE410 WB-PLATE				0072-0301-0317-0306					KG
16		AA1011819074	AA10119	59.0	150.0X5000.0	1	30	61.9	0.0	1857.0
30(30)	RIB FLAT 10X150X5000		CUT TO SUIT	Y	PL 10					
RM DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
17		AA1011819074	AA10119	23.0	1963.0X274.0	1	15	44.37	0.0	665.55
15(15)	CIRCUMFERENTIAL RIB		REF DRG 02020721502	Y	PL 10					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
18		AA1011819074	AA10119	11.0	941.0X181.0	1	14	14.0	0.0	196.0
14(14)	CIRCUMFERENTIAL RIB		REF DRG 02020721502	Y	PL 10					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
19		AA1012708020	AA10108	490.0	70000.0	1	1	514.5	0.0	514.5
1(1)	TRANSPORT STAYS 70 MTR		CUT TO SUIT 75X40X4.8X7.5	Y	CH ISMC 75X40		L=70000mm			
RM DR	ST-A(FE410 WA)CHANEL				0072-0301-0306					KG
20		AA1011819031	AA10119	1.7	132.0X274.0	1	12	1.8	0.0	21.6
12(12)	PLATE-1 6TK		REF DRG 02020721502	Y	PL 6					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
21		AA1011819031	AA10119	4.0	132.0X656.0	1	12	4.3	0.0	51.6
12(12)	PLATE-2 6TKX132X656			Y	PL 6					
RM DR	ST-FE410 WB-PLATE				0072-0301-0306					KG

**ENGG****TTX****WTX**

Worked By	stejm	09.06.2021	ttxsk	22.06.2021	bk2rd	18.06.2021
Checked By	stejm	21.06.2021	ttxsk	22.06.2021	bk2rd	18.06.2021
Approved By	stemb	22.06.2021	ttxss	22.06.2021	wtxblm	18.06.2021



## COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02020721502 CBOM Var: 01  
Description: PIT LINER (WELDED ASSEMBLY)

Revno: 0

Rev Date: 22.06.2021

Total weight: 9250.0

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty( Total )	Description		Assy. Remarks	Inclusion?	Mat Shape		Remarks			
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
22		AA1011819031	AA10119	8.8	274.0X680.0	1	6	9.22	0.0	55.32
6(6)	PLATE-3 6TKX274X680			Y	PL 6					
RM DR	ST-FE410 WB-PLATE				0072-0301-0306					KG

CBOM - 02020721502 01

	ENGG		TTX		WTX	
	Initial	Date	Initial	Date	Initial	Date
Worked By	stejm	09.06.2021	ttxsk	22.06.2021	bk2rd	18.06.2021
Checked By	stejm	21.06.2021	ttxsk	22.06.2021	bk2rd	18.06.2021
Approved By	stemb	22.06.2021	ttxss	22.06.2021	wtxblm	18.06.2021





## COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02020721502 CBOM Var: 02 Revno: 0 Rev Date: 22.06.2021  
Description: PIT LINER (WELDED ASSEMBLY) Total weight: 5030.0

CBOM - 02020721502 02

	ENGG		TTX		WTX	
	Initial	Date	Initial	Date	Initial	Date
Worked By	stejm	09.06.2021	ttxsk	22.06.2021	bk2rd	18.06.2021
Checked By	stejm	21.06.2021	ttxsk	22.06.2021	bk2rd	18.06.2021
Approved By	stemb	22.06.2021	ttxss	22.06.2021	wtxblm	18.06.2021



# COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02020721502 CBOM Var: 02  
Description: PIT LINER (WELDED ASSEMBLY)

Revno: 0

Rev Date: 22.06.2021

Total weight: 5030.0

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty( Total )	Description		Assy. Remarks	Inclusion?	Mat Shape		Remarks			
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
0	02020721502 02			5030.0						
1(1)	PIT LINER (WELDED ASSEMBLY)			Y						
MF	PIT LINER VAR-02		N	5030.0	0306-0236					
1		AA1011819139	AA10119	187.0	5215.0X1330.0	1	1	1144.43	0.0	1144.43
1(1)	BASE PLATE		REF DRG 02020721502	Y	PL 20		Cut in 2 segments			
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
3		AA1011819074	AA10119	2253.0	2500.0X11477.0	1	1	2367.1	0.0	2367.1
1(1)	UPPER CYLINDER HALF		REF DRG 02020721502	Y	PL 10					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
4		AA1011819074	AA10119	856.0	950.0X11477.0	1	1	899.5	0.0	899.5
1(1)	LOWER CYLINDER HALF		REF DRG 02020721502	Y	PL 10					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
11		AA1011819074	AA10119	40.6	150.0X3450.0	1	6	42.7	0.0	256.2
6(6)	VERTICAL RIB		REF DRG 02020721502	Y	PL 10					
MF DR	ST-FE410 WB-PLATE				0072-0301-0317-0306					KG
12		AA1011819074	AA10119	0.28	50.0X100.0	1	9	0.42	0.0	3.78
9(9)	STIFFNER		REF DRG 02020721502	Y	PL 10					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
13	22011018501 12	AA1012508129	AA10108	2.0	250.0	1	12	2.1	0.0	25.2
12(12)	DETAILS FOR LOWER PIT LINER			Y	75X75X6		L=250mm			
MF DR	LOWER PIT LINER VAR12				0072-0301-0317-0306					KG
17		AA1011819074	AA10119	23.0	1963.0X274.0	1	35	44.37	0.0	1552.95
35(35)	CIRCUMFERENTIAL RIB		REF DRG 02020721502	Y	PL 10					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
18		AA1011819074	AA10119	11.0	941.0X181.0	1	14	14.0	0.0	196.0
14(14)	CIRCUMFERENTIAL RIB		REF DRG 02020721502	Y	PL 10					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
19		AA1012708020	AA10108	455.0	65000.0	1	1	477.75	0.0	477.75
1(1)	TRANSPORT STAYS 65 MTR		CUT TO SUIT 75X40X4.8X7.5	Y	CH ISMC 75X40		L=65000mm			
RM DR	ST-A(FE410 WA)CHANEL				0072-0301-0306					KG

**ENGG****TTX****WTX**

Worked By	stejm	09.06.2021	ttxsk	22.06.2021	bk2rd	18.06.2021
Checked By	stejm	21.06.2021	ttxsk	22.06.2021	bk2rd	18.06.2021
Approved By	stemb	22.06.2021	ttxss	22.06.2021	wtxblm	18.06.2021



# COMBINED BILL OF MATERIAL

Printed On:16.07.2021

Printed By:

CBOM No: 02020721502 CBOM Var: 02  
Description: PIT LINER (WELDED ASSEMBLY)

Revno: 0

Rev Date: 22.06.2021

Total weight: 5030.0

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty( Total )	Description		Assy. Remarks	Inclusion?	Mat Shape		Remarks			
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
20		AA1011819031	AA10119	1.7	132.0X274.0	1	4	1.8	0.0	7.2
4(4)	PLATE-1 6TK		REF DRG 02020721502	Y	PL 6					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
21		AA1011819031	AA10119	4.0	132.0X656.0	1	4	4.3	0.0	17.2
4(4)	PLATE-2 6TKX132X656			Y	PL 6					
RM DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
22		AA1011819031	AA10119	8.8	274.0X680.0	1	2	9.22	0.0	18.44
2(2)	PLATE-3 6TKX274X680			Y	PL 6					
RM DR	ST-FE410 WB-PLATE				0072-0301-0306					KG

CBOM - 02020721502

	ENGG		TTX		WTX	
	Initial	Date	Initial	Date	Initial	Date
Worked By	stejm	09.06.2021	ttxsk	22.06.2021	bk2rd	18.06.2021
Checked By	stejm	21.06.2021	ttxsk	22.06.2021	bk2rd	18.06.2021
Approved By	stemb	22.06.2021	ttxss	22.06.2021	wtxblm	18.06.2021



## BHARAT HEAVY ELECTRICALS LIMITED

HEEP-HARIDWAR, UTTARAKHAND (249403)

General Instructions and Standard Terms & Conditions for bidding against Tender Enquiry (GISTC)

For Indian Bidders (Version December-2020, Rev: 05)

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### 1. GENERAL.

These general terms & conditions shall apply to all the Tender Enquiries, notice inviting tenders, request for quotations concerning the supply of goods and / or rendering of services to Bharat Heavy Electricals Ltd., HEEP, Haridwar (hereinafter referred to as BHEL or the Purchaser). In case of placement of order these conditions will become part of Purchase Order (P.O) until unless the deviations are specifically agreed by BHEL.

### 2. ORIGIN OF QUOTATION.

- The quotation should preferably be from the principal bidder. However tender specific authorized registered dealer/agent can also submit the bid on their behalf, failing which the quotation is liable to be ignored. BHEL prefers to deal directly with the principal manufacturers.
- An agent cannot quote on behalf of more than one principal in the same Tender Enquiry.

### 3. SUBMISSION OF TENDER.

- Bid / Quotation must be enclosed in sealed cover on which tender enquiry number and the due date MUST BE written and be invariably sent under REGISTERED POST / SPEED POST / COURIER / Dropped in the Tender Box: addressed as follows:

Quotation against Enquiry No. \_\_\_\_\_

Dated: \_\_\_\_\_

Due on: \_\_\_\_\_

To,

**THE HEAD OF MATERIALS MANAGEMENT,  
Heavy Electrical Equipment Plant,  
Bharat Heavy Electricals Limited,  
HARIDWAR-249403 (Uttarakhand), INDIA.**

- TENDER ROOM is located at: Room No. - 415, 4<sup>th</sup> Floor, Main Admin. Building, BHEL-HEEP, Haridwar.

**## Quotations / Bids not in accordance with General Instructions and Standard Terms & Conditions are likely to be ignored.**



## BHARAT HEAVY ELECTRICALS LIMITED

HEEP-HARIDWAR, UTTARAKHAND (249403)

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- c) In case of Three / Two Part Bid, technical bid containing technical offer, duly signed and un-priced copy of the Price Bid should be kept in one envelope. Price Bid containing only the price should be kept in a separate envelope. All envelopes indicating Part-1 or Part-2 or Part-3 as the case may be to be put in a bigger envelope. Please note that un-priced bid should be the exact replica of price bid but without prices.
- d) The bid / quotation must be posted before due date, keeping allowance for postal transit time. Quotations sent by any mode but not received in time will be ignored. Tender received through authorized E-mail is also acceptable. However, in time submission of tender in tender box shall be the responsibility of the bidder, sent through any mode. Documents submitted with the offer / bid shall be signed and stamped in each page by authorized representative of the bidder.
- e) Any additional documents submitted by supplier / bidder, during processing of registration application / tender or after placement of order shall not be accepted unless it is submitted with forwarding letter and duly signed and stamped.
- f) The bids of the bidders who are on the banned list and also the bids of the bidders, who engage the services of the banned firms, shall be rejected. The cutting / overwriting in the bid / offer must be duly attested by the signatories to the bid. The list of firms banned by BHEL is available on BHEL web site [www.bhel.com](http://www.bhel.com).
- g) Being PMD vendor, if you are not quoting against this tender enquiry, please send your regret letter positively for our reference with valid reasons for not participating in the tender enquiry. Repeated lack of response on the part of bidder may lead to deletion such PMD vendor from BHEL's approved vendor list.
- h) The bidders will submit Integrity Pact, duly signed by its authorized signatory, along with their bids wherever estimated tender value is Rs. 2 Crore or more.
- i) In case of open tender, technically qualified unregistered bidders may apply online for registration through <http://www.bhel.com/index.php/vender>.
- j) BHEL reserves the right to award tendered quantities among more than one bidder (after acceptance of L1 price by the other bidders). BHEL can also consider awarding of part of the tendered quantity to other than L-1 bidder at L1 counter offered rates, if the quantity offered by the L-1 bidder is less than the quantity tendered for.
- k) In case of e-Tendering (Online bidding through e-portal), offline bid submitted in hard copy or in any other form by the vendor / supplier will not be accepted and will be rejected out rightly. Only e-portal bid will be accepted.

#### 4. TENDER OPENING.

Tender opening is scheduled to start in the Tender Room at 2:00 PM, on the due date. Therefore, bid / quotations must reach this office / tender Box latest by 1:45 PM on due date. Only participating bidders are allowed to attend tender opening. **TENDERS RECEIVED AFTER THE SPECIFIED TIME OF THEIR 'SUBMISSION' WILL BE TREATED AS LATE TENDERS AND SHALL NOT BE CONSIDERED UNDER ANY CIRCUMSTANCES.** The bidders or their authorized representatives may be allowed to attend tender opening if duly authorized by their principals, through a tender specific letter on that particular day. General authorization letter is not acceptable.

***Note: - Foreign bidders willing to attend the bid opening has to provide the requisite documents to the concerned Purchase executives for arranging gate pass for them.***

#### 5. SPECIFICATION, DRAWINGS & STANDARD.

- a) Bidders must give their detailed specification in the quotation along with relevant technical literature / catalogue etc. against the tender enquiry.
- b) The Bid should be accompanied with relevant copies of catalogues, drawings or specification as per tender enquiry.

**## Quotations / Bids not in accordance with General Instructions and Standard Terms & Conditions are likely to be ignored.**



## BHARAT HEAVY ELECTRICALS LIMITED

HEEP-HARIDWAR, UTTARAKHAND (249403)

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If these documents are not furnished, the offer is liable to be rejected.

- c) Wherever national / international (N/IN) standards are referred, the latest N/IN standards are to be followed. Mention year & date of standard revision that shall be followed for the supply.
- d) All Drawings and Standards are proprietary of BHEL. It must not be used in anyway detrimental to the interest of the company.

### 6. PRICE SCHEDULE.

- a) Kindly quote your prices in figures and words both. In case of any discrepancy in value, the prices quoted in words shall be considered for evaluation and establishing L1 status.
- b) Prices quoted should not be more than the prices quoted to any other BHEL units / offices / divisions. Vendor to submit copy of latest Purchase Order placed by any unit of BHEL for similar items in the technical bid. In case no order has been placed on such items, specific confirmation that no order has been placed on such items should be provided.
- c) Prices should be quoted on F.O.R. Destination basis. Transit insurance shall be arranged by BHEL and not to be included in the prices. The offers quoted on other than F.O.R destination basis may result in non-consideration of such bids.
- d) In case BHEL accepts the EX-Works prices, such offers will be loaded by 1.5% of EX-Works value towards freight or with actual freight charges as per BHEL freight rate contract whichever is higher.
- e) In case of Indigenous items covered by DGS & D Rate Contract, the bidders should submit latest valid copy of the rate contract along with bid / quotation
- f) Applicable **IGST / CGST / SGST** and any other statutory levy should be indicated separately and clearly in the bid / quotation.

g) Bidders can dispatch goods through any Indian Bank Association approved transporters having their branch at HARIDWAR / destination. If material is dispatched through other than Indian Bank Association approved transporter, material to be delivered on door delivery BHEL Stores basis.

h) In case of dispatch of material through any other unapproved transporter, payment shall be made only after receipt of material and any additional charges payable to the transporter shall be to the bidder's account.

i) Any demurrage / godown rent payable to the transporter / or to godown's owner due to any delay attributed by the supplier shall be recovered from supplier's account.

j) Currency of Evaluation shall be INR.

**NB: Financial evaluation of L1, L2 .....Status will be on the basis of Landed Cost to BHEL.**

### 7. REVERSE AUCTION.

**Wherever RA is declared in the special terms and conditions of tender enquiry, following shall be applicable and Bidders to confirm the same:**

"BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on [www.bhel.com](http://www.bhel.com)) for this tender. RA shall be conducted among all the techno-commercially qualified bidders.

Price bids of all techno-commercially qualified bidders shall be opened and same shall be considered as initial bids of bidders in RA. In case any bidder(s) do(es) not participate in online Reverse Auction, their sealed envelope price bid along with applicable loading, if any, shall be considered for ranking."

### 8. DELIVERY TERMS.

a) Goods shall be delivered on 'FOR Destination' basis to the named destination unless otherwise called for in the tender enquiry.

b) Loading on account of 3rd party inspection charges in case of Indian bidders shall be 0.20%.



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### 9. PENALTY FOR LATE DELIVERY.

#### a) Where items of Purchase Order are independently usable.

Penalty for Late Deliveries shall be applicable @0.5% per week or part thereof on the value of respective delayed supplies subject to a maximum of 10% of the value of respective delayed supplies. Value of delayed supplies will mean the Gross Value payable to the vendor (Before LD) against such supplies excluding taxes and duties.

#### b) Where the total items are required for a main equipment and items are interdependent.

Penalty for Late Deliveries shall be applicable @0.5% per week or part thereof on total value of Purchase Order subject to maximum of 10% of the total value of Purchase Order. Purchase Order value for this purpose shall be the Total Gross Value payable to the vendor (Before LD) excluding taxes and duties.

#### c) Bidders are requested to quote the best delivery meeting the delivery requirements. BHEL reserves the right to reject the offers not meeting BHEL's delivery requirement.

#### d) Commencement of delivery period shall be reckoned from the date of PO / LOI or any other agreed milestone.

#### e) Bidder shall deliver the goods in the manner and schedule agreed under the terms and conditions of Purchase order.

#### f) DELIVERY IN CASE OF REJECTION: In case the material is rejected, then date of replacement will be considered as the actual date of delivery.

#### g) DELIVERY AGAINST BANK DOCUMENTS: In case payment terms quoted by bidder are documents through bank, and the delivery terms being "FOR Haridwar / FOR Transporter Go-down" then date of delivery will be date of intimation by transporter / bidder of delivery of material at Haridwar for the penalty purpose.

g) Where the payments are through bank, the documents may be presented for negotiation to BHEL authorized / nominated bank.

### 10. PAYMENT TERMS.

a) BHEL's standard payment term is Payment after receipt and acceptance of materials / items at HEEP, BHEL-Store or at desired destination unless otherwise specified in Special Terms attached to the tender enquiry.

b) BHEL reserves the right to accept or reject the offer of the bidder who quotes the payment term other than BHEL's standard payment term.

c) Loading on account of deviation in payment terms shall be done as per extant rules of BHEL-Haridwar.

d) 100% payment along with taxes, freight & insurance will be made after receipt and acceptance of material and within 75 days from the date of invoice subject to submission of non-discrepant documents within 15 days of supply as per terms and conditions of Purchase Order. In case any discrepancy found in the documents, BHEL will notify the same to vendor within 7 days of receipt. Vendor has to clear all the discrepancies in one go within 7 days thereafter else the payment of vendor may get delayed.

e) For MSEs (covered under MSME Act) which are registered and periodically renewed with BHEL, the payment will be made within 45 days or as prescribed in the relevant act.

f) Adherence to the above time schedule of payment is contingent upon Vendor complying with GST Rules w.r.t availment of Input Tax Credit by BHEL.

g) In case GST credit is delayed / denied to BHEL, due to non / delayed receipt of goods and / or tax invoice or expiry of the timeline prescribed in GST Law for availing such ITC, or any other reason not attributable to BHEL, GST amount shall be recoverable from Vendor along with interest levied / leviable on BHEL.

h) The taxes and duties that are reimbursed would be the ones applicable as on the contractual Purchase order delivery date or the amount actually paid whichever is less.



**BHARAT HEAVY ELECTRICALS LIMITED**

HEEP-HARIDWAR, UTTARAKHAND (249403)

**General Instructions and Standard Terms & Conditions for bidding against Tender Enquiry (GISTC)****For Indian Bidders (Version December-2020, Rev: 05)****i) The loading criteria for the different payment terms shall be as under:**

Payment Terms	Days of Loading
After Receipt & Acceptance of material within 75 days of supply.	<b>No Loading</b>
Against Delivery at BHEL-Stores Haridwar.	<b>45</b>
Against documents through bank (CAD):	<b>45</b>
Letter of Credit (LC)	<b>120</b>
Usance LC	No Loading if usance period is > 120 Days.
	Loading of days' difference i.e. difference between 120 days and usance period if the usance period is < 75 days.
Advance	Delivery Period + 120 Days - Advance Payment Days.

**11. TAXES & DUTIES.**

- a) The bidder to specify in their offer (part 1 bid) the category of their registration under GST like Registered, Unregistered and composite dealer.
- b) The provisional GST registration number of Bharat Heavy Electrical Ltd, Heavy Electricals Equipment Plant, Ranipur, Haridwar is "05AAACB4146P1ZL" with state Code as "05" and State Name as "Uttarakhand".
- c) Please quote our provisional GST registration number in all invoices raised for supply of goods and services under GST regime and also ensure filing of timely return and payment of tax and compliance of other applicable provisions on supplier under GST regime.
- d) No GST will be reimbursed to unregistered or composite dealer. In the event, any GST is quoted by composite dealer, the same shall be added to the cost of supply in evaluating the bid.
- e) Since, input credit of GST will be available to BHEL-Haridwar only after correct filing of return and payment of applicable GST by supplier, reimbursement of GST shall be made by BHEL-Haridwar on matching of vendor inputs at GST portal,

ensuring availability of input credit to BHEL Haridwar. Payment of GST will be made to vendor after matching of input credit and vendor to ensure submission of their invoices along with consent to accept payment of tax after such matching in all cases where bills are submitted directly to BHEL-Haridwar or through bank or under LC or through any other mode.

- f) In the event of any disallowance of input credit or applicability of interest or any other financial liability arises on BHEL-Haridwar due to any default of supplier under GST, such implication shall be to supplier's account.
- g) In the event of any change in the status of the vendor after the submission of the bid but before the supply, GST applicable at the time of supply or in the bid, based on the registration status of the vendor, whichever is lower shall be payable.
- h) Where ever applicable If PAN (Permanent Account Number) of the recipient is not available, income tax is deductible either at the normal rate or at the rate of 20 percent, whichever is higher as per Section 206AA of Indian Income Tax Act 1961.
- i) The bidder shall clearly indicate HSN (*Harmonised System Nomenclature*) / SAC (*Service Accounting Code*), its description and applicable rate of GST for each item in his techno-commercial bid.
- j) Statutory Variation in Taxes & duties as applicable at the time of supply shall be payable. However, in the event of no change in law but bidder quoting certain tax structure in bid document which is lower than the applicable one, such amount shall be the maximum amount of tax that can be claimed by bidder.
- k) **IMPORTED GOODS OFFERED BY INDIAN BIDDERS AGAINST DEALER INVOICE:** Wherever the material being offered is imported, the bidder must quote the prices inclusive of IGST. The rate and value of IGST as included in the price must be indicated separately. In case quantum of IGST is not mentioned by the bidder the same will not be considered for evaluation. However, bidder will have to pass on the benefit of IGST to BHEL at the time supply.





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- l) In case of directly dispatchable items to Customer's Site, BHEL-Haridwar will inform the GST registration number of the respective customer which must be mentioned on the vendor's invoice. Vendor to ensure availability of such information from BHEL-Haridwar before dispatch of any material. However, while filing GSTN-1, BHEL Haridwar GSTN number to be quoted.

Note: - Vendors must ensure compliance of all the applicable rules and procedure as envisaged in the GST Regime. Any loss to BHEL-Haridwar due to fault / non-compliance by the vendor will be to the vendor's account.

### 12. BANK GUARANTEE.

In case the bank guarantees are required to be deposited towards security deposit/performance guarantee or for any other purpose as per the terms of this tender enquiry, such bank guarantees of the requisite value in the denominated currency of the purchase order should be from one of the Indian branch of BHEL consortium banks and the bank guarantee should be in the proforma as prescribed by BHEL. The proforma of bank guarantee and the list of consortium banks are displayed at BHEL website [www.bhelhwr.co.in](http://www.bhelhwr.co.in). However, in case the bank guarantee is not from BHEL consortium banks, then the bidder has to get the bank guarantee confirmed from one of the Indian branch of BHEL consortium banks and the bank charges for such confirmation will be borne by the bidder.

### 13. GUARANTEE / WARRANTY AND CORRESPONDING REPAIRS / REPLACEMENT OF GOODS.

Goods shall comply with the specifications for material, workmanship and performance. Unless otherwise specified, the warranty shall be for a period of 18 months from the date of receipt. If the delivery is found non-compliant during the warranty period, leading to rejection, the Seller shall arrange free replacement / repair of goods, within one month from the date of intimation or any mutually agreed period. The rejected goods shall be taken away by the Seller at his cost and replaced on Delivered Duty Paid (DDP) (FOR - BHEL Stores / designated destination basis) within such period. In the event

of the Seller's failure to comply, Purchaser may take action as appropriate, including Repair / Replenish rejected goods & disposal of rejections, at the risk & cost of the Seller. In case the defects attributable to Seller are detected during processing of the goods at BHEL or at our subcontractor's works, the Seller shall be responsible for free replacement / repair of the goods as required by BHEL.

- b) **RETURN OF REJECTED MATERIAL FOR REPLACEMENT:** The bidder shall have to pay 5% incidental charges while taking back supplied material if it is found rejected on receipt. The rejected material shall be sent back only after receipt of replacement / submission of BG / refund of amount paid.

### 14. QUALITY REQUIREMENT.

Your bid / quotation should have specific confirmation regarding meeting all our quality requirements such as. (i) Test Certificate (TC), (ii) Guarantee Certificate (GC) / Warranty Certificate (WC), (iii) Quality Plan (QP) (if applicable); and (iv) Pre-Dispatch Inspection at your works (if applicable).

### 15. VALIDITY.

The quotation should be valid for a minimum period of 90 days effective from the date of opening of tender, unless otherwise specified in the tender enquiry.

### 16. RIGHT OF ACCEPTANCE.

- a) **BHARAT HEAVY ELECTRICALS LIMITED HARIDWAR** reserves the right to reject any or all the bids / quotations without assigning any reason thereof. BHEL also reserves the right to increase or decrease the tendered quantities. Bidders should be prepared to accept order for reduced quantity without any extra charges.
- b) Any discount / revised offer / bids submitted by a bidder on its own shall be considered, provided it is received on or before the due date and time of offer / bid submission (Part-1). Conditional discounts shall not be considered for evaluation of tenders.
- c) Unsolicited discounts / revised offers / bids given after Part-1 bid opening shall not be accepted. No change in price will be



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permitted within the validity period asked for in the tender enquiry.

- d) In case of changes in scope and / or technical specification and / or commercial terms & conditions having price implication, techno-commercially acceptable bidders shall be asked by BHEL to submit the impact of such changes on their price bids. In case a bidder opts to submit revised price bid instead of impact called for then the latest price bid shall prevail. However, in both situations, original price bid will be necessarily opened.
- e) The bidder whose bid is technically not accepted will be informed & EMD wherever submitted shall be returned after finalization of contract. EMD shall be forfeited in the event of bidder opting out after tender opening.
- f) BHEL reserves the right to short close the existing Purchase Order / Rate Contract / Work Order or any extension thereof at any stage.

### 17. TRANSIT INSURANCE.

- a) Transit Insurance will be covered by BHEL under its open Insurance Policy. Seller shall inform dispatch particulars (Purchase Order, RR /GR, Invoice value etc.) to "Finance department (Store bill Section), BHEL Ranipur, Haridwar (Uttarakhand-India) with value of consignment to the Purchaser within 07 days of dispatch for BHEL to arrange insurance coverage in its policy. Failure on the part of seller to inform dispatch particulars will make him liable to pay for any transit damages / losses suffered by the Purchaser.
- b) If Quoted Prices are inclusive of transit insurance, no weightage shall be given while evaluating the bids for Cost of Insurance, being in BHEL Scope.

### 18. RISK PURCHASE.

In case of abnormal delays (beyond the maximum late delivery period as per Penalty clause) in supplies / defective supplies or non-fulfillment of any other terms and conditions given in

Purchase Order, BHEL may cancel the Purchase Order in full or part thereof, and may also make the purchase of such material from elsewhere / alternative source at the risk and cost of the supplier. BHEL will take all reasonable steps to get the material from alternate source at optimum cost. If bidder does not agree to the above Risk Purchase Clause, BHEL reserves the right to reject the offer. In case for compelling reasons BHEL accepts the offer without acceptance of this clause by the bidder and in the eventuality of Risk Purchase, appropriate action will be taken as per BHEL extant rules. This will be without prejudice to any other right of BHEL under the contract.

### 19. FORCE MAJEURE CLAUSE.

Notwithstanding any other thing contained anywhere else in the contract or PO (Purchase Order), In case the discharge of obligation under the contract by either party is impeded or made unreasonably onerous, neither party shall be considered in breach of the contract to the extent that performance of their respective obligation is prevented by an event of Force Majeure that arises after the effective date (PO date).

In the above clause, Force Majeure means an event beyond the control of the parties to the contract which prevents a party from complying with any obligation of the contract including but not limited to:

- a) Act of God (Such as but not limited to earthquake, drought, tidal waves, floods etc.).
- b) War (whether war be declared or not), Hostilities Invasion, Act of foreign enemy etc.
- c) Rebellion, revolution, insurrection, civil war etc.
- d) Contamination of Radio Activity from any nuclear fuel or from any other nuclear waste or any other hazardous materials.
- e) Riots, commotions, strike unless restricted to the employees of supplier.
- f) Acts of terrorism.
- g) Other unforeseeable circumstances beyond the control of the parties and which the affected party cannot avoid even by using its best efforts.
- h) Cancellation of contract by customer.



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- i) Change in law / government. Regulation making the performance impossible.

The party claiming to be affected by force majeure shall notify the other party in writing immediately without delay on the intervention and on the cessation of such circumstances.

Irrespective of any extension of time, if an event of force majeure occurs and its effect continues for more than 180 days the affected party shall have right to cancel the contract.

As soon as reasonably practicable following the date of commencement of a Force Majeure Event, and within a reasonable time following the date of termination of a Force Majeure Event, either Party invoking it shall submit to the other Party reasonable proof of the nature of the Force Majeure Event and of its effect upon the performance of the Party's obligations under this Agreement.

The party shall, and shall ensure that its Subcontractors shall, at all times take all reasonable steps within their respective powers and consistent with Good Operating Practices (but without incurring unreasonable additional costs) to:

- a) Prevent Force Majeure Events affecting the performance of the party's obligations under this Agreement.
- b) mitigate the effect of any Force Majeure Event and
- c) Comply with its obligations under this Agreement.

If the war like situation has developed in a country where a seller's works is located in this P.O. or there is political instability and Indian Embassy located in that country forbids or advises for not having any business dealing with the sellers located in such zone / region/ country, then BHEL reserves the right to cancel the order.

### 20. NON-DISCLOSURE AGREEMENT.

All Drawing and Technical Documents relating to the product or it's manufacture submitted by one party to the other, prior or subsequent to the formation of contract, shall remain property of the submitting party. Drawing, technical documents or other technical information received by one party, shall not without the consent of the other party, be used for any other purpose than that, for which they were provided. Such technical information

shall not without the consent of the submitting party, otherwise be used or copied, reproduced, transmitted or communicated to a third party. Patterns supplied by BHEL will remain BHEL's property which shall be returned by the bidder on demand to BHEL. Bidder shall in no way share or use such intellectual property of BHEL to promote his own business with others. BHEL reserves the right to claim damages from the bidder, or take appropriate penal action as deemed fit against the bidder, for any infringement of the provisions contained herein.

### 21. SETTLEMENT OF DISPUTES / ARBITRATION.

In all cases of dispute, the matter shall be referred for ARBITRATION by sole arbitrator to be appointed by the Unit Head of Bharat Heavy Electricals Ltd., at HARIDWAR. The award of the Arbitrator shall be final and binding on both the parties. The place of Arbitration shall be Haridwar.

**JURIDICTION:** The courts of Haridwar, India, shall have exclusive jurisdiction.

### 22. WHARFAGE / DEMURRAGE RESPONSIBILITY.

In the event of delay in receipt of documents by Manager (Stores-Shipping) BHEL-Haridwar and in case where dispatches are made through Unapproved Transporter the sole responsibility for wharfage / demurrage for such delay shall be that of supplier.

### 23. CONDITIONS FOR AVAILING MICRO & SMALL ENTERPRISES (MSE'S) BENEFITS.

- a) "MSE Suppliers can avail the intended benefits only if they submit along with the offer, attested copies of either EM II certificate having deemed validity (**five years** from the date of issue of acknowledgement in EM II) or valid NSIC certificate or EM II certificate along with attested copy of a CA certificate (Format enclosed at annexure-1 where deemed validity of EM II certificate of five years has expired) applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the date of bid opening (Part 1 in case of two-part bid) or vendor has to give Udyog Adhar Memorandum (UAM). Non submission of such documents will lead to consideration of their bid at par with



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other bidders. No benefit shall be applicable for this enquiry if any deficiency in the above required documents is found or the requisite documents are not submitted before price bid opening. If the tender is to be submitted through e-procurement portal, then the above required documents are to be uploaded on the portal. Documents should be notarized or attested by a Gazetted officer. **UAM need not required to be notarized or attested.**

**b)** Any new supplier will be eligible for registration with BHEL as MSE supplier provided at least any one of the following documents are submitted along with application for registration: -

1. Udyog Adhar Memorandum (UAM).
2. Valid National Small Industries Commission (NSIC) Certificate.
3. Entrepreneurs Memorandum part II (EM II) certificate (valid based on deemed validity of 5 years) or
4. EM II certificate along with attested copy of CA Certificate (as per prescribed format at annexure-A) applicable for the relevant financial year (latest audited), where the deemed validity of EM II is over.
5. However, credentials of all MSE suppliers will be verified before advancing the intended benefits.
6. MSE bidders claiming SC/ST status will have to submit SC/ST certificate of the Proprietor from competent authority. Attested (notarized or attested by Gazetted officer) copy to be submitted along with the offer.
7. In case techno-commercial accepted bidders include MSE source and their prices (based on landed cost – considering quoted prices) are within the price band of 15% w.r.t. L-1 bidder, then BHEL can offer **25%** of quantity of respective item (rounded off to nearest number) to MSE bidders at L-1 price and in case, more than one MSE bidder is in 15 % band and the same is accepted by more than one MSE bidders then **25%** quantities of respective items will be considered for ordering on proportionate basis amongst MSE bidders.
8. There will be minimum of **3%** reservation for women owned MSEs within the above mentioned 25% reservation.
9. The reservation for MSEs owned by SC/ST will be **6.25%** { 25% out of target of 25% - refer para 4 of Public Procurement Policy for the Micro and Small Enterprises(MSEs)}.
10. The definition of MSEs owned by Women Entrepreneurs is clarified as under:

- a) In case of proprietary MSE, proprietor shall be Woman.
- b) In case of partnership MSE, the Woman partners shall be holding at least 51% of share in the unit.
- c) In case of Private Limited companies, at least 51% share shall be held by Women promoters.

11. The definition of MSEs owned by SC/ST is clarified as under:

- a) In case of proprietary MSE, proprietor(s) shall be SC/ST.
- b) In case of partnership MSE, the SC/ST partners shall be holding at least 51% of shares in the unit.
- c) In case of Private Limited companies, at least 51% share shall be held by SC/ST promoters.

12. While distributing the **25%** quantity amongst MSE bidders the decimal points in quantity shall be ignored for all the bidders except the L-1 amongst MSE bidders. Balance quantity after allocating the quantity to other MSE bidders ignoring the quantities in decimal, shall be given to L-1 (amongst MSE) bidder. However, if there are more than one MSE bidder at the same price level than preference for additional quantities due to ignoring off the decimal (as mentioned above) shall be given to the bidder offering favorable terms to BHEL and if the conditions offered are also same then preference will be given to the bidder having high SPR rating.

13. In case there are more than one MSE bidders (with different landed cost to BHEL) within 15% price band of lowest bidder and quantity to be offered is 1 no. only, then preference shall be given to the MSE bidder with lowest landed cost.

14. In case there are more than one MSE bidders (with same landed cost to BHEL) within 15% price band of lowest bidder and quantity to be offered is 1 no. only, then preference shall be given first, based on the favorable terms in the bid and in case terms are also same, the bidder with high SPR rating shall be given preference.

15. If L1 bidder is MSE bidder, entire quantity will be given to such MSE bidder only.

16. Note: It may however be noted that MSE guidelines as on date (Date of Technical Bid Opening Part-1) shall prevail.

17. "As per the OM No. F.No. 1(2)(1)/2016-MA dtd. 09.02.2017 issued from the Office of Development Commissioner (Micro, Small & Medium Enterprises), "Traders and agents should not be allowed to avail the benefits extended under the PP Policy."



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In view of this, it is clarified that benefits of MSE (such as EMD Waiver, Tender fee exemption, Price preference, Payment preference etc.) will be given only to those MSE Vendors who are manufacturers of offered items against the NIT. No MSE benefits shall be provided to Agents / Stockists / Dealers / Traders etc. for the items offered but not manufactured by themselves.”

### 24. INFORMATION TO THE BIDDERS.

- a) Purchase related information is available at our Business-to-Business (B2B) Portal available on our website <https://hwr.bhel.com>. The user ID & password can be obtained by sending a request to concerned purchase executives.
- b) Intimate your change in mail address or communication address or changes, if any, by email to AGM (SDX/MM) giving your bidder Code.
- c) Please resolve your rejections and unexecuted overdue purchase order immediately which are posted at our B2B Portal, which can be visited through our site <https://hwr.bhel.com>
- d) Copy of this Tender Enquiry is being sent through the post.
- e) The Bidder declares that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other bidder(s). This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.  
In case, the bidder is found having indulged in above activities, suitable action shall be taken by BHEL as per extant policies/guidelines.
- f) Supplier must upload digitally signed e-Invoice on B2B portal for processing of Bills.  
In other cases, inked signed hard copy of Invoice to be submitted for processing of Bills.

### 25. MAKE IN INDIA (GOVT-NOTIFICATION).

- A. This tender enquiry shall be governed by notification no. P-45021/2/2017-PP (BE-II) dated 04.06.2020 of government of INDIA and subsequent circulars issued afterwards. Accordingly, the minimum local content, the margin of purchase preference and the procedure for preference to make in INDIA shall be adhered.
- B. The margin of purchase preference shall be 20%.
  - ‘Class-I local Supplier’ means a supplier or service provider, whose goods, services or works offered for procurement, has local content equal to or more than 50%, as defined under this order.
  - ‘Class-II local Supplier’ means a supplier or service provider, whose goods, services or works offered for procurement, has local content more than 20% but less than 50%, as defined under this order.
  - ‘Non- local Supplier’ means a supplier or service provider, whose goods, services or works offered for procurement, has local content less than or equal to 20%, as defined under this order.
- C. Vendor to specifically confirm if they are Class-I or Class-II local supplier or not as per above mentioned notification. Accordingly, the ‘Class-I local supplier’/ ‘Class-II local Supplier’ at the time of tender, bidding or solicitation shall be required to indicate percentage of local content and provide self-certification that the item offered meets the local content requirement for ‘Class-I local supplier’/ ‘Class-II local Supplier’, as the case may be. They shall also give details of the location(s) at which the local value addition is made.
- D. 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.
- E. Requirement of Purchase Preference:  
Purchase preference shall be given to ‘Class-I local supplier’ in procurements undertaken by procuring entities in the manner specified hereunder -
  - a. In the procurements of goods or works, which are covered by para 3(b) of mentioned Govt. circular and which are divisible in nature, the ‘class-I local supplier’ shall get purchase preference over ‘Class-II supplier’





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as well as 'Non-local supplier', as per following procedure:

- i. Among All qualified bids, the lowest bid will be termed as L1. If L1 is 'Class-I local supplier', the contract for full quantity will be awarded to L1.
- ii. If L1 bid is not a 'Class-I local supplier', 50% of the order quantity shall be awarded to L1. Thereafter, the lowest bidder among the 'Class-I local supplier' will be invited to match the L1 price for the remaining 50% quantity subject to the class-I local supplier's quoted price falling within the margin of purchase preference, and contract for that quantity shall be awarded to such 'Class-I local supplier' subject to matching the L1 price. In case such lowest eligible 'Class-I local supplier' fails to match the L1 price or accepts less than the offered quantity, the next higher 'Class-I local supplier' within the margin of purchase preference shall be invited to match the L1 price for remaining quantity and so on, and contract shall be awarded accordingly. In case some quantity is still left uncovered on Class-I local supplier, then such balance quantity may also be ordered on the L1 bidder".
- b. In the procurements of goods or works, which are covered by para 3(b) of mentioned Govt. circular and which are not divisible in nature, and in procurement of services where the bid is evaluated on price alone, the 'class-I local supplier' shall get purchase preference over 'Class-II supplier' as well as 'Non-local supplier', as per following procedure:
  - i. Among all qualified bids, the lowest bid will be termed as L1. If L1 is 'Class-I local supplier', the contract will be awarded to L1.
  - ii. If L1 is not 'Class-I local supplier', the lowest bidder among the 'Class-I local supplier', will be invited to match the L1 price subject to Class-I local supplier's quoted price falling within the margin of purchase preference, and the contract shall be awarded to such 'Class-I local supplier' subject to matching the L1 price.
  - iii. In case such lowest eligible 'Class-I local supplier', fails to match the L1 price, the 'Class-I local supplier' with the next higher bid within the margin of purchase preference shall be

invited to match the L1 price and so on and contract shall be awarded accordingly. In case none of the 'Class-I local supplier' within the margin of purchase preference matches the L1 prices, the contract may be awarded to the L1 bidder.

- c. 'Class-II local supplier' will not get purchase preference in any procurement, undertaken by procuring entities.
- F. For this procurement, the local content to categorize a supplier as a Class-I local supplier/ Class-II local supplier/ Non-local supplier and purchase preference to Class-I local supplier, is as defined in Public Procurement (Preference to Make in India), Order 2017 dated 04.06.2020 issued by DPIIT. In case of subsequent orders issued by nodal ministry, changing the definition of local content for the items of the NIT, the same shall be applicable even if issued after issue of this NIT, but before opening of Part-II bids against this NIT.
- G. Procurements where estimated value to be procured is less than Rs. 5 lakhs shall be exempted from GOI order No. P-45021/2/2017-PP (BE-II) dated 04.06.2020.
- H. For procurement of Goods & Services which are divisible in nature, following shall be operated for **MSE bidders** under Public procurement Policy for the Micro and Small Enterprises (MSEs) Amendment Order, 2019, Ref. No. AA: SSP: MSE: Amndt, dtd. 30.11.2018, Circular No. 44 of 2018-19;-
  - a. If L1 bid is not from "Class-I local Supplier" and price quoted by MSE bidder falls within the margin of Purchase preference (L1+15% for MSEs), then 25 % of total order quantity of respective item (rounded off to nearest number) shall be awarded to MSE bidder, subject to MSE bidder matching the L1 Price. Out of Remaining 75% quantity, distribution shall be operated as per below sub-clause (2) –
  - b. If "Class- I Local Supplier" (Next to L1, other than MSE) quoted price falling within the Margin of Purchase Preference, and "Class-I local supplier" matches the L1 price, then 50% of remaining Quantity (after allocation of 25% to MSE) i.e. 37.5% shall be awarded to local supplier and 37.5% shall be awarded to foreign bidder.

*Note: L1 Price refers to lowest evaluated / landed cost to Company.*



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For Further details, please refer GOI order no. P-45021 / 2 / 2017 - PP (BE-II) dated 04.06.2020.

### 26. RESTRICTIONS UNDER RULE 144(XI) OF THE GENERAL FINANCIAL RULES (GFRs), 2017

All provisions of Order No. F.No.6/18/2019-PPD of Department of Expenditure (DoE) shall be applicable for this tender enquiry (Order copy is available at <https://doe.gov.in/procurement-policy-divisions>). Accordingly, any bidder from a country which shares a land border with India (except the countries to which the Govt. of India has extended lines of credit or in which the Govt. of India is engaged in development projects for which list is available at <https://www.mea.gov.in/>) will be eligible to bid in this tender only if the bidder is registered with the Competent Authority as specified in Annex I of the said Order of DoE.

Updated list of the countries to which lines of credit have been extended or in which development projects are undertaken are available on the Ministry of External affairs website (<https://www.mea.gov.in/>)

For the purpose of this order, definition of Bidder from a country which shares a land border with India shall be same as defined in the Annex III of the said order.

Registration with the competent authority as stipulated in the said order is responsibility of bidder. Bidder has to submit a certificate certifying following along with offer:

"I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that bidder (... Name of Bidder) is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that bidder (.....Name of bidder) fulfils all requirements in this regard and is eligible to be considered"

If the bidder is from such country which shares a land border with India evidence of valid registration by the Competent Authority shall also be attached along with offer."

### 27. NOTE.

- a) Special conditions of enquiry, if enclosed by BHEL, will supersede the respective standard / general terms of enquiry.
- b) Any other Standard terms and Conditions of the bidder attached / referred against the tender enquiry will be treated as null and void ab initio.
- c) In order to protect the commercial interests of BHEL, it becomes necessary to take action against suppliers / contractors by way of supervision of business dealings, who either fail to perform or are in default without any reasonable cause, cause loss of business / money / reputation, indulged in malpractices, cheating, bribery, fraud or any other misconducts or formation of cartel so as to influence the bidding process or influence the price etc. Guide- lines for Suspension of Business Dealings with Suppliers / Contractors shall prevail over which is available at BHEL website <http://www.bhel.com>
- d) The bidder along with its associate / collaborators / sub-contractors / sub-vendors / consultants / service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL-Management about any fraud or suspected fraud as soon as it comes to their notice.
- e) "BHEL shall recover the amount of compensation paid to victim(s) by BHEL towards loss of life / permanent disability due to an accident which is attributable to the negligence of contractor, agency or firm or any of its employees as detailed below;
  1. **Victim:** Any person who suffers permanent disablement or dies in an accident as defined below.
  2. **Accident:** Any death or permanent disability resulting solely and directly from any unintended and unforeseen injurious occurrence caused during the manufacturing / operation and works incidental thereto at BHEL factories/ **offices and precincts** thereof , project execution , erection and commissioning, services, repairs and maintenance, trouble shooting, serving , overhaul, renovation and retrofitting , trial



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operation, performance guarantee testing undertaken by the company or during any works / during working at BHEL Units/ Offices/ townships and premises/ project sites.

### 3. Compensation in respect of each of the victims:

- (i) In the event of death or **permanent disability** resulting from **Loss of both limbs**: Rs. 10,00,000/- (Rs. Ten Lakh).
- (ii) In the event of **other permanent disability**: Rs. 7,00,000/- (Rs. Seven Lakh).

4. Permanent Disablement: A disablement that is classified as a permanent total disablement under the proviso to Section 2(I) of the Employees Compensation Act, 1923."