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**INVITATION TO TENDER**

Ref : OS/19-20/2434/41/087

Date : 13.01.2020

**Sub : Balance Fabrication of Amine Flash Drum against S.O. 2434 at ADM site of BHEL - HPVP, Visakhapatnam.**

Dear Sir,

Sealed tenders are invited for the subject work in **two part bid** system from Vendors who are experienced in / capable of fabrication of similar jobs. **Bidders shall enclose supporting documents in support of work experience.**

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**1. VENDOR'S SCOPE OF WORK :**

- The following equipment is to be fabricated for M/s. Petrofac, Mumbai :

**(a) Amine Flash Drum (Tag No. 509-V-2001) - ID 5.5M x 17.047M : 1 No. – 86 MT**

This equipment has been partly fabricated in HPVP shops and balance fabrication is outsourced to meet the delivery commitments made to the customer.

- Balance fabrication of the above Drum as per the approved drawings, QAP, WPS, Painting Schedule, NDE program, Standard Procedures, Specifications etc. and it includes the following activities but not limited to the same : -
- **For item wise scope of work, Annexure – II(A) may be referred.**
- Collection of free issue materials, partially fabricated sections and components from HPVP Stores / Shops and Shifting of the same to ADM site including unloading at site
- Assembly & Welding of Dished Ends with Shell Section
- Assembly & welding of all Nozzle Sub-assemblies, Internal & External attachments
- Assembly & Welding of Saddles with Shell Section. Saddles will be issued in sub-assembled condition
- NDT like DPT, MPI, RT & UT, RF Pad Testing, wherever applicable, shall be carried out as per approved ITP / QAP / NDE plan / Procedures etc.
- 100% UT on all pressure retaining welds after PWHT as per approved ITP / QAP / NDE plan / Procedures etc.
- Transportation and handing over of the materials to shops for Section Bending / Pipe Bending / Pressing and Shifting of the same to ADM Site after completion of the activity in Shops
- Transportation of (Shell Section + One Dished end with nozzle) after assembly, welding, NDT from ADM Site to HPVP Shops for SR and back to Site after SR
- 100% UT is to be carried out after SR for all nozzles, L-seams & C-seams as per approved ITP / QAP / NDE plan / Procedures etc.
- Local SR of the final C-Seam of Dished End with Flash Drum
- Hydro testing of Complete Drum. Wooden saddles required for hydro test will be provided by BHEL-HPVP.

- Surface Preparation by Blast Cleaning and Painting as per approved Painting Schedule / Procedure. Blast Profile Measurement Test, Cello Tape Adhesive Test, Salt Contamination Test, DFT checks are to be carried out by deploying required instruments as per the applicable procedure.
- Free issue items cleared by QC shall be collected within 3 days from the date of intimation without failure. Any delay beyond the 3 days shall be considered for levying of L.D.
- Scaffolding & Staging materials required are to be arranged and installed at vendor cost for safe working at heights
- Hydra Crane up to 14MT capacity required for fabrication, unloading & loading at ADM site
- All tools & tackles required for completion of the job
- Handing over of the finished equipments to Logistics at ADM site and loading onto the trailer for dispatch to the project site
- Qualified personnel shall be deployed as Site In-charge, Engineers & Supervisors for proper co-ordination of the job. All the QC related documents are to be prepared & submitted to BHEL (QC) / TPIA / Customer for stage wise inspection & final dimension clearances.
- Welding is to be carried out by qualified welders along with Production Test Coupons strictly using NACE electrodes wherever applicable as per relevant drawings, QAP / ITP & WPS.

Welding Test Coupons shall be provided as free issue by BHEL. However, **NACE electrodes shall be issued on chargeable basis.**

Welder's qualification is the responsibility of the Vendor. However, Test Pieces shall be provided by BHEL as free issue.

- Stenciling & Letter painting of Dispatch particulars in a prescribed / specified format.
- It may be noted that fabrication of Drum is to be taken up on priority immediately after placement of order and sufficient man power shall be deployed (if required round the clock) for completion of the equipment to meet HPVP delivery schedules committed to the customer.
- Any modification work due to revision of drawings during fabrication is to be carried out by the vendor without any extra cost.
- Though not mentioned specifically, any activity which is required for completion of the work is deemed to be included in the scope of work of vendors.

**2. BHEL'S SCOPE :** BHEL – HPVP shall provide the following as free issue :

- Applicable approved drawings, GMS, ITP / QAP & WPS, Painting Schedule, NDE Plan, Standard Procedures, etc.
- Welding Test Coupons shall be provided as free issue by BHEL.
- **All NACE & other electrodes shall be issued on chargeable basis.**
- Shell Section with L-seams and C-seams in welded condition including NDT Clearance as per approved ITP / QAP / NDE Plan / Procedures etc.
- Dished ends in formed condition including NDE clearances as per approved QAP / ITP / NDE Plan / Procedures etc.
- Nozzle Sub-assemblies in finished condition including Machining & NDT as per ITP / QAP / NDE plan/ Procedures etc.
- Skimming Bucket plate and Weir plate with stiffeners in welded condition

- Impingement plate in two halves in pressed condition
- Saddles in sub-assembled condition without welding
- Pads / RF Pads in pressed condition
- All other internals & externals in cut to size condition
- Stress Relieving of Drum with one Dished end in welded condition and 2<sup>nd</sup> Dished end in loose condition
- BOCs like Fasteners, Gaskets etc. as per GMS and Paints as per requirement
- Blind Flanges, Gaskets and Fasteners required for Hydro test
- 300 MT & 75 MT crane along with operator and fuels will be provided by BHEL free of charge for fabrication, loading & unloading at ADM site. Maintenance of the crane including spares shall also be in the scope of BHEL. However, Riggers required for handling the job shall have to be provided by the vendor. Helpers are to be provided by the vendor for maintenance of the cranes whenever required.
- Area required for fabrication will be provided free of charge.
- Power, Water shall also be provided free of charge at one point but all arrangement for further distribution to desired location is in vendor's scope.

Bidder's scope shall include arranging Distribution Board with 250A Switch Fuse unit as incomer, all outgoing with necessary safe trips as per the industrial safety norms and their installation, all outgoing cables from Distribution Board, termination at the distribution board, Working Area Lighting.

In case of power failure, the vendor shall have to make alternative arrangement for smooth functioning of the work without any extra cost to BHEL.

### 3. **INSPECTION** :

Inspection shall be carried out by M/s. BHEL – Vizag / Bureau Veritas / EIL / Customer as per approved QAP / ITP. Contractor shall have to offer for Stage wise and Final inspection as per approved QAP and obtain necessary clearances before proceeding for further operations.

### 4. **DELIVERY** :

Finished items along with all inspection documents and all other related certificates are to be handed over to HPVP Logistics as per the following schedule : -

Within **4 weeks** from the date of issue of last consignment of free issue materials / components. However, the delivery period should meet the delivery schedules committed to the customer.

**Note** : For intermediate operations like SR, the time period from the date of handing over to the date of taking over will be excluded from the delivery period for the purpose of computation of LD.

### 5. **PRICE** :

The price shall be quoted as per the Schedule of Rates enclosed at Annexure – I for the detailed scope of work of each item. The prices shall be fixed & firm without any escalation during the entire period of contract and till completion of the work.

The quoted price shall be inclusive of all applicable taxes & duties except GST and Income tax will be deducted at applicable rates from RA & Final bills. GST shall be reimbursable to the vendor as detailed in Clause – 6 and as per Annexure – GST.

**6. GOODS & SERVICES TAX (GST) :**

Bidders shall make a note of the following points of GST before submission of their offer : -

- Vendors shall have to mention their GSTIN no. (15 Digits) in their Technical Bid. If any specific exemption is available, a declaration with due supporting documents need to be furnished for considering the offer.
- Semi-finished goods are to be delivered by the Vendors in BHEL, HPVP premises within a maximum period of one year from the date of issue of the material, failing which the whole transaction will be considered as Supply and Sale and GST is required to be paid along with interest (calculated @ SBI Base Rate + 6%) along with penalty, if any, from the date of Challan on the whole value of materials. Hence vendors shall have to ensure that materials issued to them are returned within 365 days.
- After fabrication, the vendors shall have to deliver the Semi - finished Goods by fulfilling the following formalities:

GST invoice should be raised by the vendors by paying GST on job work charges at applicable rates and by incorporating the HPVP GSTIN no. in the invoice for availing the reimbursement of GST from HPVP.

The vendor shall also have to enter in their GST Return -1 (GSTR-1) the details of invoice raised for payment of GST so as to enable HPVP to avail input credit

**7. REVERSE AUCTION :**

BHEL reserves the right to opt for Reverse Auction at its discretion instead of opening the price bids submitted in sealed envelope and any information regarding the reverse auction shall be decided after technical evaluation and shall be intimated to the bidders at appropriate time. The bidders are requested to give their acceptance for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids in case BHEL decides to go for RA.

In case BHEL decides to go for RA, only those bidders who give their acceptance will be allowed to participate in RA and these bidders shall have to necessarily submit 'Online Sealed Bid' in the RA. **Non-submission of 'Online Sealed Bid' by the bidder will be considered as tampering of the tendering process and will invite action by BHEL as per extent guidelines in vogue.**

**8. RISK PURCHASE :**

In case the contractor fails to execute the work within the scheduled time or due to any other reasons, BHEL - HPVP reserves the right to get the same completed through some other party at the risk & cost of the contractor and any additional expenditure incurred due to the same shall be charged to the contractor.

9. Other Terms & Conditions shall be as per Annexure – III enclosed.

**10. VALIDITY OF OFFER :**

The offer shall be valid for a period of **3 months** from the last date for tender submission.

**11. GENERAL :**

- The bidders shall study the Tender documents, Drawings, Quality Documents and all other relevant documents in detail for understanding the scope of work and the processes involved before submission of offers. One complete set of drawings shall be made available in the office of DGM (Outsourcing) and the same shall be referred during working hours. Drawings, QAP, WPS etc. shall be sent to vendor's e-mail address.

- For any clarifications required on this tender document, scope of work etc., **the bidders shall depute their authorized representatives to BHEL, Visakhapatnam to visit the HPVP shops for better understanding of the scope of work and getting clarifications** from concerned authorities between 09:00 AM and 04:30 PM.
- Bidders shall confirm their acceptance to all the terms & conditions of the tender enquiry. Any deviations to the tender terms & conditions are not acceptable and BHEL reserves the right to reject such offers without further correspondence
- BHEL reserves the right to modify or cancel the tender enquiry at any stage without assigning any reasons thereof.

**12. The following documents shall form part of the tender enquiry:**

- |   |                    |
|---|--------------------|
| i) Schedule of Rates  | : Annexure – I     |
| ii) Item wise Scope of Work   | : Annexure – II(A) |
| iii) List of Drawings & Documents   | : Annexure – II(B) |
| (Drawings, QAP / ITP, Painting Schedule, NDE Plan, Standard Procedures, WPS etc. shall be sent by e-mail to vendor's e-mail address on request) |                    |
| iv) General Terms & Conditions  | : Annexure – III   |
| v) Acceptance to tender terms & conditions  | : Annexure – IV    |
| vi) Reverse Auction Rules & Regulations   | : Annexure – V     |
| vii) Procedure for GST Payment  | : Annexure – GST   |

**13. TENDER SUBMISSION :**

Techno-commercial bids shall be submitted along with the **tender document duly signed by the bidder on all pages.** Techno-Commercial Bid and Price bid shall be placed in two separate envelopes and both shall be kept in another big envelope.

Tenders completed in all respects shall be sent to or dropped in the **Outsourcing Tender Box** placed at Reception counter, Admn. Building, BHEL - HPVP, Visakhapatnam, PIN - 530012 so as to reach on or before **14.00 hrs. on 23.01.2020** duly super scribing the Subject, Tender Ref. No. and Technical / Price Bid on the envelopes.

**TENDERS RECEIVED AFTER THE DUE DATE & TIME ARE NOT ACCEPTABLE.**


**Note : Offers sent in any other form will be treated as invalid and will be summarily rejected.**

**14. OPENING OF TENDERS :**

Techno-commercial Bids will be opened on **23.01.2020 at 14.00 Hrs.** at Customer Cell, Admn. Building, BHEL - HPVP, Visakhapatnam. The price bid of the techno-commercially qualified bidders will be opened in presence of representatives of the bidders and the date & time of opening of price bids will be intimated later. The bidders may depute their representatives at the time of opening.

In case of opting for Reverse Auction, intimation shall be given to the qualified bidders in advance at appropriate time.

for Bharat Heavy Electricals Limited,

  
(Y.V.R.Rao)  
DGM (OS)

**Schedule of Rates**

Ref : OS/19-20/2434/41/087, dated 13.01.2020

Sub : Balance Fabrication of Amine Flash Drum against S.O. 2434 at ADM site of BHEL - HPVP, Visakhapatnam

Sl. No.	S.O. No.	Description of Work	Unit	Qty.	Unit Rate (in ₹)	Total Amount (in ₹)
1	2434	Balance Fabrication of Amine Flash Drum including NDT, Hydrotesting, Blasting & Painting as per the Drawings, Specifications, QAP, WPS & Painting Schedule and including Collection of FIMs from HPVP stores / shops & transportation to ADM site, Transportation of Sections from ADM site to Shops for SR & back to ADM site, Loading of finished equipments onto the trailers & Welding of Supports for transportation and Handing over of the finished equipments to HPVP Logistics dept. etc. complete in all respects as per the detailed scope of work mentioned in the tender document.	LS	1		
		Amine Flash Drum (Tag No. 509-V-2001) (Approx. Wt. 86MT)				
Total Amount in Words :						

**Notes :**

- 1) The quantity and weights indicated above are approximate and may slightly vary on both sides subject to revision or addition or deletion of drawings. However, payment shall be made for the actual weights as per the applicable drawings / BOM.
- 2) The prices shall be fixed & firm without any escalation during the entire period of contract and till completion of work.
- 3) The quoted price shall be inclusive of all applicable taxes & duties except GST and Income tax will be deducted from Vendor's bills at applicable rates. However, GST shall be reimbursed by BHEL on submission of proof of GST payment.
- 4) The bidders are advised to go through all the drawings & documents before quoting the tender.
- 5) BHEL reserves the right to go for Reverse auction as per the applicable guidelines instead of opening price bids.
- 6) Tenderer should quote the amount in figures & words. It may be noted that corrections, overwriting etc. are not allowed. If there is a discrepancy between amount in figures & words, the amount in words shall prevail unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail. If there is an error in the total corresponding to the addition or subtraction of sub-totals, the sub-totals shall prevail and total shall be corrected accordingly.

In case of any mismatch between rate and amount in figures, rate in figures shall be taken into consideration for further evaluation and processing.

**Signature of the Bidder with Stamp**

**Itemwise Scope of Work**

Sub : Balance Fabrication of Amine Flash Drum (PV-020) against S.O. 2434

Ref : OS/19-20/2434/41/087, dated 13.01.2020

Sl. No.	S.O. No.	PGMA	Description of Item / Work	BHEL's Scope	Bidder's Scope
II	2434	PV-020	<b>Amine Flash Drum (Tag No. 509-V-2001) - ID 5.5M x 17.047M - 85.610 MT</b>		
1			<b>Dished Ends - 2 Nos.</b>	1) One dished end having Nozzles to be Issued in formed condition including all NDE complete as per approved ITP / QAP / NDE plan / Procedures etc.	<b>Height Marking, Cutting &amp; Edge Preparation</b> 1) Opening of the Nozzles, Assemble & Weld the same with dished end and NDT complete as per applicable plan / procedures. Assembly & Welding of this Dished End with Shell & NDT complete as per applicable procedures and to be sent to HPVP shops for SR. 100% UT & other NDT requirements as per applicable plan / procedures.
				2) Second Dished End to be issued as Loose including all NDE complete as per approved ITP / QAP / NDE plan / Procedures etc.	<b>Height Marking, Cutting &amp; Edge Preparation</b> 2) Second Dished End to be assembled to the shell followed by local SR.
2			<b>Shell Section (NACE)</b>	Issued in all L-seams & C-seams welded condition with NDT clearance as per approved ITP, NDE plan & Procedures	Assembly & Welding of D'ends with the Shell Section and NDT as per approved ITP /QAP, NDE plan & Procedures
3			<b>Nozzle Sub-assemblies</b>	Issued in finished condition including all NDE complete	Assembly & Welding of Nozzle Sub-assemblies to the shell and NDT as per approved ITP /QAP, NDE plan & Procedures
4			<b>Internal attachments like Skimming Bucket, Vertex Breaker, Distributor Pipes etc.</b>	(1) Skimming Bucket plate & Weir plate with Stiffners in welded condition but shall be supplied in loose with NDE complete	Assembly & Welding of the same with shell & NDT as per approved ITP /QAP, NDE plan & Procedures
5				(2) Impingement plate in two halves in pressed condition	Assembly & Welding of the same with shell & NDT as per approved ITP /QAP, NDE plan & Procedures
6				(3) Distributor Pipes in Cut to size condition	Fabrication of Sub-assembly, Fit up & Welding of the same with shell & NDT as per approved ITP /QAP, NDE plan & Procedures

Sl. No.	S.O. No.	PGMA	Description of Item / Work	BHEL's Scope	Bidder's Scope
7			Internal attachments like Skimming Bucket, Vertex Breaker, Distributor Pipes etc.	(4) Elbows in finished condition with NDE complete	Assembly & welding of the same with the shell including NDT as per approved ITP /QAP, NDE plan & Procedures
8				(5) All others in cut to size condition	Fabrication of Sub-assemblies, Fit up & Welding of the same with Shell including NDT as per approved ITP /QAP, NDE plan & Procedures
9			Extrenal attachments like Lifting Trunnions, RF Pads, Platform Clips, Man Hole Davit, etc.	Pads / RF Pads in pressed condition with tell tale holes	Assembly & welding of the same with shell including NDT & Leak Testing as per approved ITP /QAP, NDE plan & Procedures
10				All others in Cut to size condition	Fabration of Sub Assemblies, Assembly & Welding of external attachments including as per approved ITP /QAP, NDE plan & Procedures
11			Saddles	Sub-assembled but shall be supplied in loose	Welding of Saddles, Assembly & Welding with shell
12			Stress Relieving	Stress Relieving of Drum in Two Pieces	
				<b>1st Piece</b> : (Shell section + Dished end with Nozzles) in welded condition including assembly & welding of internals and externals complete in all respects	<b>Transportation of Flash Drum - 1st piece</b> to shops for SR and back to ADM site. 100% UT & all applicable NDT after SR as per approved ITP /QAP, NDE plan & Procedures
				<b>2nd Piece</b> : Loose Dished end including 100% UT after PWHT	<b>2nd Piece</b> i.e. Loose Dished end to be collected from Shops directly after SR and shifted to ADM site
13			Closing C-seam		(1) Assembly & welding of 2nd (loose) Dished end with the main shell (2) Local SR of closing C-Seam
14			Hydro Test	Supply of Blind Flanges, Fasteners & Gaskets	Hydro Testing of the Drum
15			Others	Section Bending, Pipe Bending & Pressing of components wherever required	Collection of all free issue items from Shops / Stores and loading of the finished equipment onto the trailer
16			Paints	Supplied as free issue	Blast cleaning and Painting as per applicable drawings, Painting Schedule / Procedure etc.
17			Consumables	All NACE & other Electrodes shall be supplied on chargeable basis	All other consumables <b>except electrodes</b> are to be procured by the vendor at their own cost



**LIST OF REFERENCE DRAWINGS & DOCUMENTS**

**Sub : Balance Fabrication of Amine Flash Drum, against S.O. 2434 at ADM site of BHEL - HPVP, Visakhapatnam.**

**Ref : OS/19-20/2434/41/087, dated 09.01.2020**

Sl. No.	S.O. No.	PGMA	Description of Drg. / Document	Drg. / Doc. No.	Rev. No.	No. of Sheets
01	2434	PV-020	General Assembly of Amine Flash Drum (Item No. 509-V-2001)	1-PV-010-U0002	1	1
02			Assembly details of Amine Flash Drum	1-PV-010-U0003	1	1
03			Details of External Clips	1-PV-010-U0004	2	1
04			Details of Internal & External Attachments	1-PV-010-U0006	2	1
05			Details of Man Hole Davit Assembly for Nozzles MH-1 & MH-2	3-PV-010-U0009	1	1
06			Details of Name Plate	3-PV-010-U0014	0	1
07			Details of Right Dished End	4-PV-010-U0013	1	1
08			Details of Left Dished End	4-PV-010-U0012	1	1
09			Temporary Spider	3-PV-010-U0048	1	1
10		PV-020	Quality Assurance Plan	CQP:2492	1	8+1
11			Weld Map & NDE Plan	2040060059-M-H01-0001-0001	1	1+3
12			Painting Schedule / Surface Preparation & Painting Procedure	2040060059-M-H06-0001-0001	1	4+1
13			Procedure for Magnetic Particle Examination	BHE-NDT-MT-07024	1	8+1
14			Procedure for Liquid Penetrant Examination	BHE-NDT-PT-07026	1	8+1
15			Procedure for Radiographic Examination	BHE/NDT/RT-07023	1	16+1
16			Procedure for Ultrasonic Examination	BHE-NDT-UT-07025	1	9+5
17			Flushing & Dry Out Procedure	2040060039-M-H10-0002-0001	1	1+1
18			Hardness Test Procedure	2040060039-M-H04-0001-0001	1	2+1
19			Hydrostatic Test Procedure	2040060039-M-H07-0001-0001	2	3+1
20			Material Color Coding Marking Traceability Procedure	2040060039-M-H21-0001-0001	1	1+1
21			Packing and Marking Procedure	2040060039-M-N01-0001-0001	1	10+1
22			Welding Procedure Specification	M.1.1.75	3	2
23				M.1.1.76	2	2
24				M.1.1.79	0	2
25				M.S.1.1.13	0	2
26				M.S.1.1.14	0	2
27				T.M.1.1.36	3	2
28				T.M.1.1.38	2	2

**Note :** The drawings & documents mentioned above are indicative only and scope of work may vary as per actual detailed drawings /documents issued for fabrication.

**GENERAL TERMS & CONDITIONS****1. TECHNICAL DELIVERY CONDITIONS :**

The work should conform to the technical data given in our drawings, GMS, Shipping List Specifications, QAP, WPS etc.

**2. PARTY'S SCOPE :**

The scope of the party shall be as follows: -

- a) All welding equipments, baking oven, tools, jigs and fixtures, measuring instruments duly calibrated, handling facilities, testing facilities etc.
- b) All materials other than those mentioned under "Free Issue Materials", which are required for completion of the work.
- c) All consumables such as gases, grinding wheels etc. except NACE & other electrodes.

**3. REVISION OF DRAWINGS :**

There may be minor changes in the drawings during execution. In such a case, party should accommodate the same without any extra claim.

**4. WELDING QUALIFICATION :** Qualification of required number of Welders is party's responsibility at their cost.**5. X-RAY :**

All welding shall be of X-ray quality where specified on drawings. Inspection would specify the quantum of X-ray based on drawings / code requirement. Party should strictly follow the WPS and QAP supplied by BHEL during welding. Getting the welds radiographed and getting them cleared by inspection is the responsibility of the party.

**6. RECTIFICATIONS / REJECTIONS :**

Any rectification due to defective work, if required, shall be done by the party free of charge with a suitable technology approved before hand by BHEL in writing. The cost of material, if any used for rectification work / rejection work, will be estimated by BHEL and the same shall be debited to party's account. In case any rectification / rework is to be carried out due to defective material supplied by BHEL, the replacement material and consumables will be supplied by BHEL free of Cost.

**7. SECURITY DEPOSIT :**

Vendors shall have to submit a Bank Guarantee for **10%** of the order value in case of **HPVP ADM site** or **25%** of the material cost in case of Vendor works towards Security Deposit and safe custody of materials within one week from the date of issue of Order. The BG shall be valid for the contract period with a claim period of 3 months. This Bank Guarantee shall be released to the contractor after completion of work and on acceptance of the same by BHEL / Owner and on submission of Performance BG for 10 % of the order value covering for the defects liability period. If PBG is not submitted, 10% of the order value shall be deducted towards PBG from final bill.

**8. RAW MATERIALS ISSUE :**

Raw materials shall be issued with appropriate processing allowance and invisible wastage over the theoretical requirement of raw materials (**Plates, Sheets, Sections and Pipes**).

**9. TRANSFER / RETURN OF LEFT OVER MATERIALS :**

Party should maintain proper records for receipt & use of all free issue materials. The left over materials & scrap as per the material accounting statement shall be returned to HPVP stores along with finished job. Material Transfer Vouchers (MTV) from one order to another or from one vendor to another and Material Return Vouchers should be submitted immediately after transfer / return. The material reconciliation statement shall be submitted by the contractor after verification and certification by BHEL along with the final bill **within 30 days from the date of completion of work**. Otherwise, recovery for the balance materials shall be made from any of their pending bills without further intimation.

**10. MATERIAL RECONCILIATION :**

Orders issued to the vendors have to be completed in all respects including Material Accounting within a maximum of **180 days** from the **date of issue of the first material** from BHEL - HPVP stores. This is a statutory requirement under Central Excise Rules and must be strictly complied with.

**Maximum of 0.5 %** on the requirement of materials (**Plates, Sections and Pipes**) is admitted towards **process allowance and invisible wastage**.

Scrap quantity is permissible up to a **maximum of 1% on Structural (Beams, Channels, Angles, Rods, Pipes etc.), 2% on Sheets, 3% for Plates** on the theoretical requirement of materials.

**If wastage and scrap is beyond the above limits**, it should be fully justified with cutting diagrams etc. which are to be approved in advance by BHEL. **Otherwise, the cost of raw materials beyond approved limits will be recovered from the contractor as per BHEL recovery rates including applicable taxes & duties.**

Material reconciliation including return of balance materials, off-cuts is to be completed within 20 days from the date of completion of the order. The material reconciliation statement shall be submitted by the contractor after verification and certification by BHEL-HPVP along with the final bill **within 30 days from the date of completion of work**. Otherwise, recovery for the balance materials shall be made from any of their pending bills without further intimation,

Repeated occurrence of inordinate delays in returning and settling the material accounting will entail BHEL the right to terminate the contract forthwith or impose a temporary suspension on further loading at the discretion of BHEL.

**11. SCRAP & OFFCUT NORMS :**

Sl. No.	Description	Scrap Size (in mm)	Off-Cut (in MM)
1.	CS/AS Sheets & Plates	Below 500 × 250	500 × 250 & above
2.	Rolled sections Rod, angles etc. (other than -tubes, pipes)	Below 1000	1000 & above
3.	Tubes & Pipes	Below 500	500 & above
4.	Universal column	Below 1000	1000 & Above
5.	SS Sheets & Plates	Below 500 × 250	500 × 250 & above
6.	SS Structural, Rods, Tubes, Pipes	Below 250	250 & above
7.	Non – ferrous: sheets & plates, rods & tubes	Below 500 × 250 (S & PL), Below 250 (Rods & Tubes)	500 × 250 & above, 250 & above
8.	Big size Scrap	(2500 & above) × (150 to 249)	-

**12. INSPECTION :**

Party shall contact our Quality Control Dept. for stages of inspection before commencement of job and should strictly follow the stages of inspection as per QAP.

**13. WORKMANSHIP GUARANTEE :**

The vendors should give workmanship guarantee for fabricated items for a period of 18 months from the date of last delivery of the order. Any defects due to incomplete work, faulty workmanship found in the fabricated items after delivery during the defects liability period shall be rectified / replaced by the vendor free of cost. Otherwise, the expenditure incurred towards the same will be recovered from the pending bills of vendors.

**14. WORK PROGRESS :**

The fabricator shall furnish a weekly report on the progress of work along with the status of availability of free issue materials and requirement of further materials, if any.

Outsourcing dept. personnel will visit vendor's works from time to time to assess and review the work progress. Free access shall be provided to BHEL or its inspection agency at all reasonable times of the day / night.

In case the progress is not satisfactory or supplies are delayed abnormally beyond the contractual delivery date, BHEL-HPVP, Visakhapatnam reserves the right to cancel the order in part or full or get the balance job in as is where is condition completed elsewhere by another agency at the risk and cost of Fabricator. The value of the work carried out by the party will be assessed by BHEL and the same shall be final. No compensation will be given to the fabricator in case of cancellation of order or diversion of balance job even if the jobs have been processed partly.

**15. DELIVERY :**

Finished items should be handed over to the Logistics dept. on party's delivery challans along with Job completion certificate / Final Inspection Report from inspection agency / HPVP-QC department.

**16. PENALTY :**

If delivery exceeds the stipulated delivery schedule, penalty 1/2 % of the total value of order per week or part there of subject to a maximum of 10% on the total value of the order will be levied. However, time taken for the following will not be considered as delay on the part of the Sub-Contractor.

- 1) Intermediate operations, if any, carried out by BHEL.
- 2) Waiting time for BHEL / Third party Inspection beyond a normal time of 3 days.

**17. PAYMENT TERMS :**

100% payment will be made against delivery of the finished items, duly inspected & cleared by Inspection authority along with all inspection documents, to Logistics dept. Payment shall be made within 45 days from the date of submission of RA Bill.

RA Bills are not allowed for orders of value less than Rs. 5 lakh. RA Bills are allowed for Order values of more than 5 lakh and in such cases, each RA bill value shall not be less than Rs. 5 lakh.

Vendors shall have to submit the bills in the formats specified by HPVP-Outsourcing and the bills submitted in the specified format along with necessary supporting documents are only admitted for processing. The following documents shall be submitted along with the Final Bill: -

1. No Claim Certificate from the contractor
2. No Dues Certificate from BHEL
3. Work Completion Certificate from BHEL
4. Material Reconciliation Statement submitted by the Contractor and certified by concerned authority of BHEL (if applicable)
5. Workmanship Guarantee Certificate from the contractor

**18. SECRECY :**

All the documents of BHEL inclusive of Drawings, GMS, Standards and Procedures made available to the fabricator should be kept in strict confidence and under no circumstance be made available to others or allow others to make use of them. Such documents shall be returned to BHEL on demand after completion of the job. This secrecy clause is binding on the employees of the fabricators also. Violation of the same may lead to suspension of business with the vendor and necessary legal action.

**19. SUB-LETTING :**

In general, sub-letting of jobs will not be permitted. But in special circumstances, this may be allowed. In such case, the party should obtain written approval from BHEL-HPVP, Visakhapatnam before sub-letting.

**20. FACTORY RULES AND REGULATIONS :**

Party shall abide by all the rules and statutory regulations in force from time to time as per factories act. It shall be party's responsibility to ensure the safety of their workmen and fulfilling the ESI, PF and other relevant statutory regulations.

**21. SAFETY :**

- a) Contractor shall adhere to safe construction practices, guard against hazardous & unsafe working conditions and shall comply with the safety rules of BHEL and local authorities. He shall maintain First Aid facilities for all his employees and labour. Contractor's responsibility includes supply of welder kit, all safety items such as safety belts, white and colour glasses, goggles, safety helmets, safety shoes etc.
- b) *Contractor and his employees shall follow all fire & safety, security regulations of BHEL.*

**22. HOUSE KEEPING :**

During execution of work, the contractor at all times keep the working place and storage area clean and free from accumulation of waste materials, rubbish etc.,

**23. ACCIDENT / DAMAGE / CONDUCT ETC. :**

Contractor will be held responsible for any disorderly conduct / misconduct, indiscipline, theft, smoking etc., on the part of his men. He will ensure summary eviction of such men from his premises failing which BHEL would remove them from the factory on his responsibility. Any damage to and or loss of equipment, machinery, building etc., to BHEL or BHEL employees, visitors or other contractors resulting from his own or any of his men's negligence shall be liable to be made good by him. Contractor shall be solely responsible for any accident in which you or your men or your equipment may be involved during the execution of contract on account of any reason what so ever.

**24. TERMINATION OF CONTRACT :**

In the event of any failure on the part of the contractor, BHEL reserves the right to terminate the contract by giving a notice of 2 weeks for any of the following lapses and contractual violations: -

- a) Failure to make labour payments in time as per the rules
- b) Failure to progress the job according to the agreed schedule
- c) Failure to mobilize adequate man power, tools & tackles and consumables in time
- d) Failure to adhere to Quality Standards of BHEL
- e) Refused to co-operate with other agencies working in the same area
- f) Failure to resolve labour disputes like strikes etc., within 7 days of occurrence
- g) Failure to comply with statutory regulations applicable at BHEL

BHEL shall also be free to intervene and take necessary remedial measures. All costs incurred with interest and overheads shall be recovered from contractor by such foreclosing or off-loading any part of the contract work.

**25. DISPUTES :**

Head of BHEL- HPVP Unit will be the final authority for any disputes arising out of this contract. The disputes / arbitration / settlement of contractual or legal issues shall be under the Jurisdiction of Visakhapatnam Court.

- 26.** For this procurement, Public Procurement (Preference to Make in India), Order 2017 dated 15.06.2017 & 28.05.2018 and subsequent Orders issued by the respective Nodal Ministry shall be applicable even if issued after issue of this NIT but before finalization of Contract / PO / WO against this NIT.

In the event of any Nodal Ministry prescribing higher or lower percentage of purchase preference and / or local content in respect of this procurement, same shall be applicable.

**Signature of the Bidder with Stamp**

**Acceptance to Tender Terms & Conditions**

I / We hereby confirm that the Tender documents, Drawings, Quality documents etc. have been studied in detail and we have fully understood the scope of work.

I / We accept to all the Terms and Conditions of the Tender Enquiry and the prices quoted are in accordance with the same.

I / We give our acceptance to participate in reverse auction in case BHEL decides to opt for reverse auction for this tender.

Tender documents duly signed on all the pages by the Owner / authorized representative of the bidder are attached herewith.

**Signature of the Bidder with Stamp**

**GENERAL TERMS AND CONDITIONS OF RA (REVERSE AUCTION)**

BHEL reserves the right to go for Reverse Auction (RA) (Guidelines as available on [www.bhel.com](http://www.bhel.com)) instead of opening the sealed envelope price bid, submitted by the bidder.

This will be decided after techno-commercial evaluation. Bidders have to give their acceptance with their offer for participation in RA. Non-acceptance to participate in RA may result in non . consideration of their bids, in case BHEL decides to go for RA.

Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit ~~Process compliance form~~(to the designated service provider) as well as ~~Online sealed bid~~in the Reverse Auction. Non-submission of ~~Process compliance form~~or ~~Online sealed bid~~by the agreed bidder(s) will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines for suspension of the business dealings with suppliers/ contractors (as available on [www.bhel.com](http://www.bhel.com)).

The bidders have to necessarily submit online sealed bid less than or equal to their envelope sealed price bid already submitted to BHEL along with the offer. **The envelope sealed price bid of successful L1 bidder in RA, if conducted, shall also be opened after RA and the order will be placed on lower of the two bids (RA closing price & envelope sealed price) thus obtained. The bidder having submitted this offer specifically agrees to this condition and undertakes to execute the contract on thus awarded rates.**

If it is found that L1 bidder has quoted higher in online sealed bid in comparison to envelope sealed bid for any item(s), the bidder will be issued a warning letter to this effect. However, if the same bidder again defaults on this count in any subsequent tender in the unit, it will be considered as fraud and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers / contractors (as available on [www.bhel.com](http://www.bhel.com)).+

As a reminder to the bidders, system will flash following message (**in RED Colour**) during the course of ~~online sealed bid~~

~~Bidders to submit online sealed bid less than or equal to their envelope sealed bid already submitted to BHEL~~+

**Signature of the Bidder with Stamp**

**GST COMPLIANCE FOR INDIGENOUS SUPPLIERS**

1. In Response to Tenders for Indigenous supplier will be entertained only if the vendor has a valid GSTIN which should be clearly mentioned in the offer. If any specific exemption is available, a declaration with due supporting documents need to be furnished for considering the offer.
2. Supplier shall mention their GSTIN in all their invoices and invoices shall be in the format as specified/prescribed under GST laws. Invoices shall necessarily contain Invoice number (in case of multiple numbering system is being followed for billing like SAP invoice no, commercial invoice no etc., then the Invoice No which is linked/uploaded in GSTN network shall be clearly indicated), item description as per PO, Quantity, Rate, Value, applicable taxes with nomenclature (like IGST, SGST, CGST & UTGST) separately, HSN/ SAC Code, etc.
3. All invoices shall bear the HSN Code for each item separately (Harmonized System of Nomenclature)/ SAC code (Services Accounting Code).
4. A declaration to the effect that all invoice particulars are/were uploaded in the GSTN network/ portal & all tax liability as per GST rules and regulations have been and will be discharged, shall be mentioned in the invoice. If not mentioned in the invoice, a separate declaration shall be submitted as per the requirement of BHEL.
5. All documents like Test Certificate, LR copy, Guarantee/Warranty certificate, work completion certificate, any other document mentioned in PO, shall be sent along with the vehicle/consignment where ever applicable. For all consignments received within the calendar month, input credit will be availed within that month in line with monthly returns filing cycle. In case of any discrepancy in the document or non-submission of documents mentioned in the PO, then BHEL will not be able to accept or account the material, in such case availing of tax credit will be deferred to next month or so.
6. In case of discrepancy in the data uploaded by supplier in the GSTN portal or in case of any shortages or rejection in the supply, then BHEL will not be able to avail the tax credit and will notify the supplier of the same. Supplier has to rectify the data discrepancy in the GSTN portal or issue credit note (details to be uploaded in GSTN portal) for the shortages or rejections in the suppliers, within the calendar month notified by BHEL.
7. For any such delay in availing of tax credit for reasons attributable to supplier (as mentioned above), interest (calculated @ SBI Base Rate + 6%) along with penalty if any will be deducted for the delayed period i.e. from the month of receipt till the month tax credit is availed, from the running bills.
8. Under GST regime, BHEL has to discharge GST liability on LD recovered from suppliers/contractors. Hence applicable GST shall also be recoverable from suppliers/contractors on LD amount. For this Debit note will be issued by BHEL indicating the respective supply invoice number.
9. This is to inform that GST portion of invoice, shall be released only upon Vendor declaring such invoice in his GSTR-1 and receipt of goods and Tax invoice by BHEL and Confirmation of payment of GST thereon by vendor on GSTN portal. Alternatively, BG of appropriate value may be obtained from vendor which shall be valid At least one month after the confirmation of date of payment of GST by vendor on GSTN portal and receipt of Tax invoice and receipt of goods, whichever is later. Above is subject to receipt of goods/service and tax invoice thereof along with vendor declaring invoice in his return and paying GST within timeline prescribed for availing ITC by BHEL.
10. That in case vendor delays Declaring such invoice in his return and GST credit availed by BHEL is denied or reversed subsequently as per GST law, GST amount paid by BHEL towards such ITC reversal as per GST law shall be recoverable from vendor/contractor along with interest levied/ leviable on BHEL.

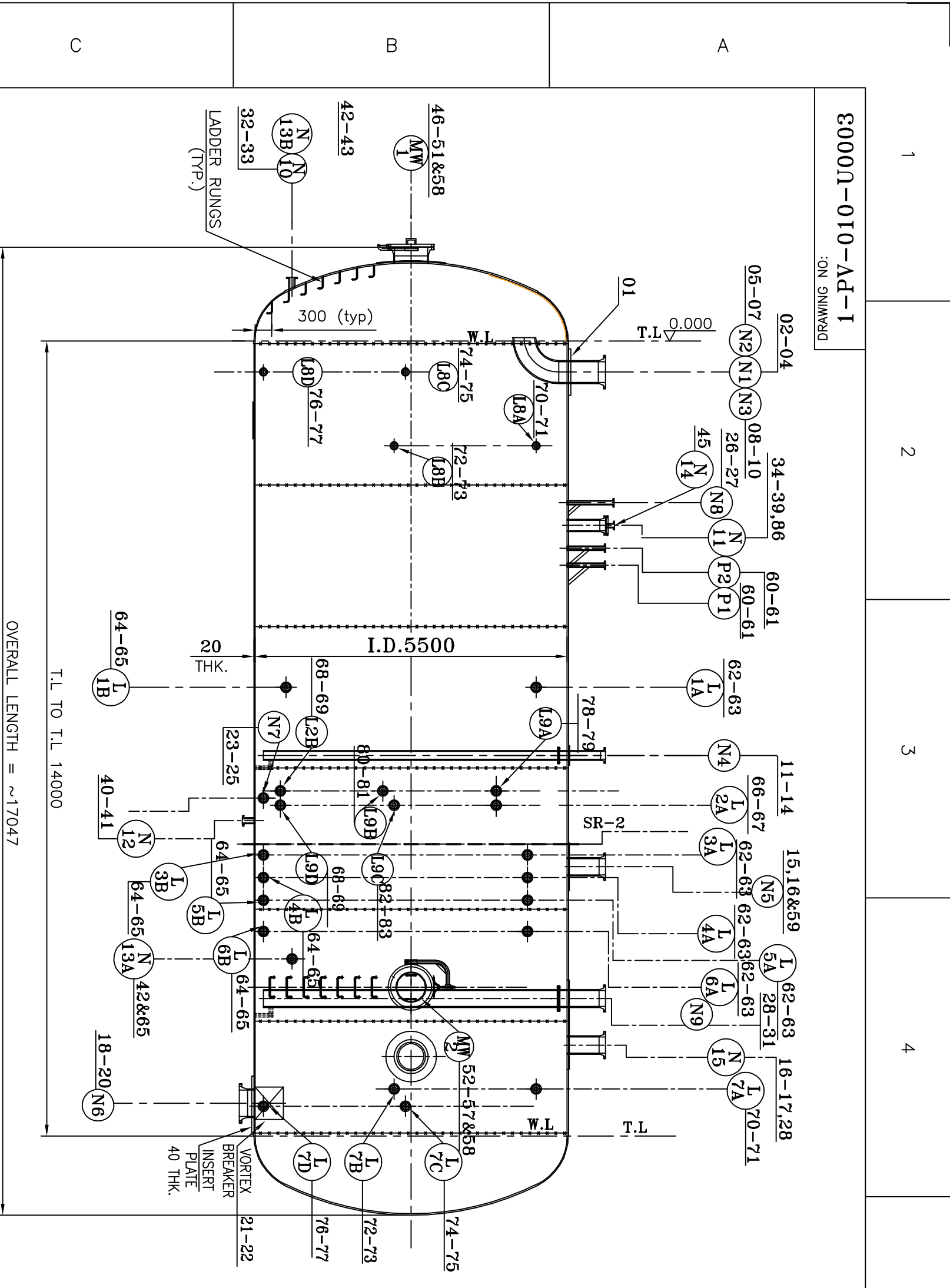
***Note : The above will be followed strictly for processing vendor payments to ensure GST Compliance.***

**Signature of the Bidder with Stamp**

















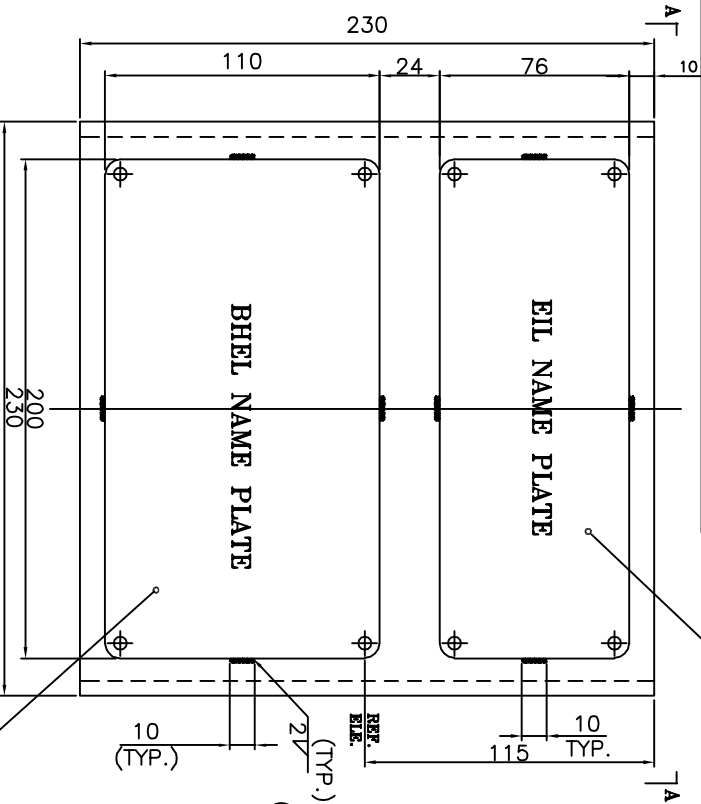




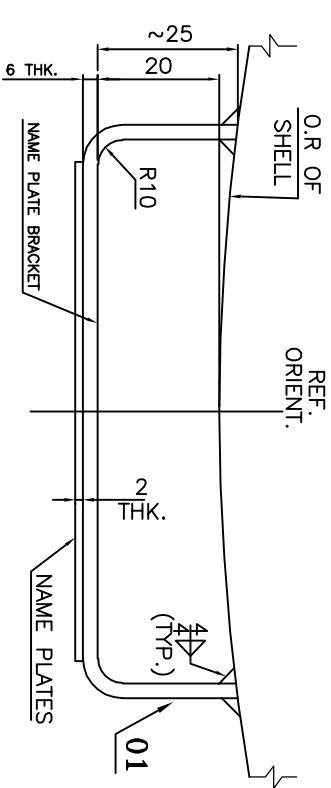
4100N-010-Ad-3

:ON GNIMWRD

2 THK 03



DETAIL OF NAME PLATE BRACKET



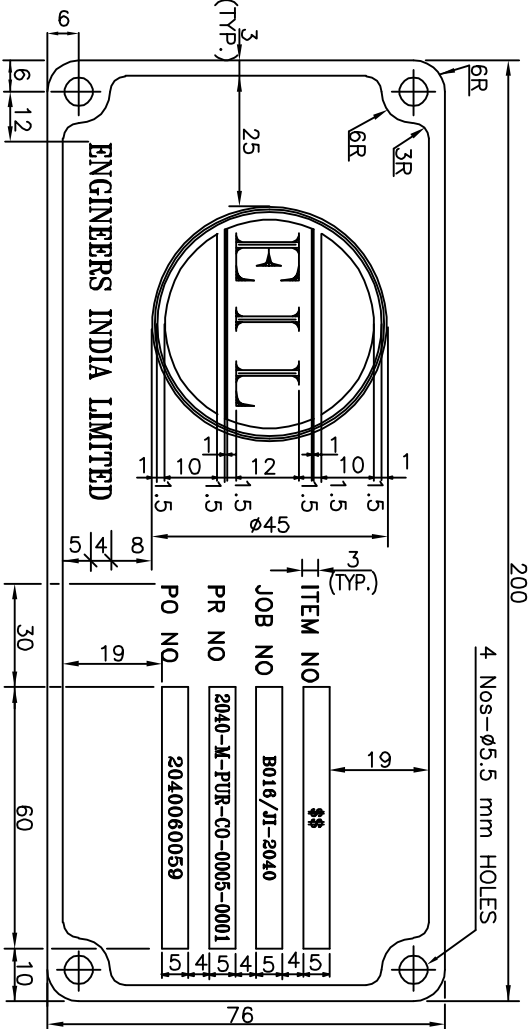
VIEW-A A

ITEM NUMBER	DESCRIPTION	DRAWING NUMBER	MATERIAL SPECN	UNIT WEIGHT	QUANTITY
03	E.I.L.NAME PLATE 2 THK X 76 X 200	156410180000	SS	0.239	1
02	B.H.E.L NAME PLATE 2 THK X 110 X 200	156410230000	SS	0.340	1
01	NAME PLATE BRACKET PL. 6 x 230 x 280	156020500000	SA 516 Gr.60N (NACE+HIC)	3.03	1

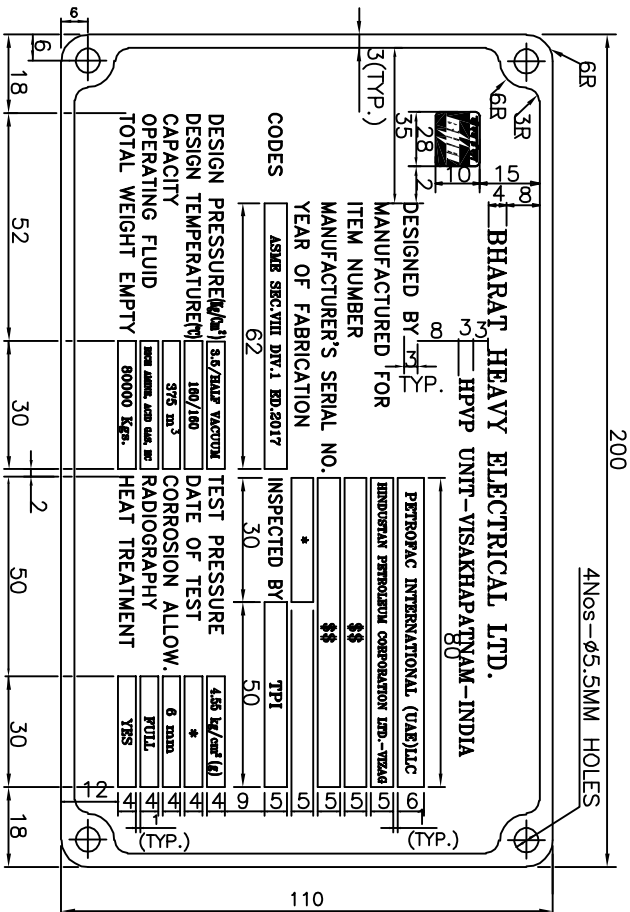
NOTES :

1. ALL LETTERS, BLOCKS AND BORDER SHALL BE OF RAISED POLISHED FACE.
  2. BACK GROUND SHALL BE BLACK.
  3. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE STATED.
  - \* 4. TO BE FILLED BY QUALITY DEPT. OF BHEL.
  5. ALL SHARP CORNERS TO BE ROUNDED OFF.
  6. NAME PLATE SHALL BE TACK-WELDED TO THE BRACKET. WHERE NOT POSSIBLE IT MAY BE RIVETED.
- \$\$\$ 26647 & 26648 ARE SL. NO'S FOR ITEM NO. 509-V-1001, 509-V-2001 RESPECTIVELY

DETAIL OF EIL NAME PLATE (03)



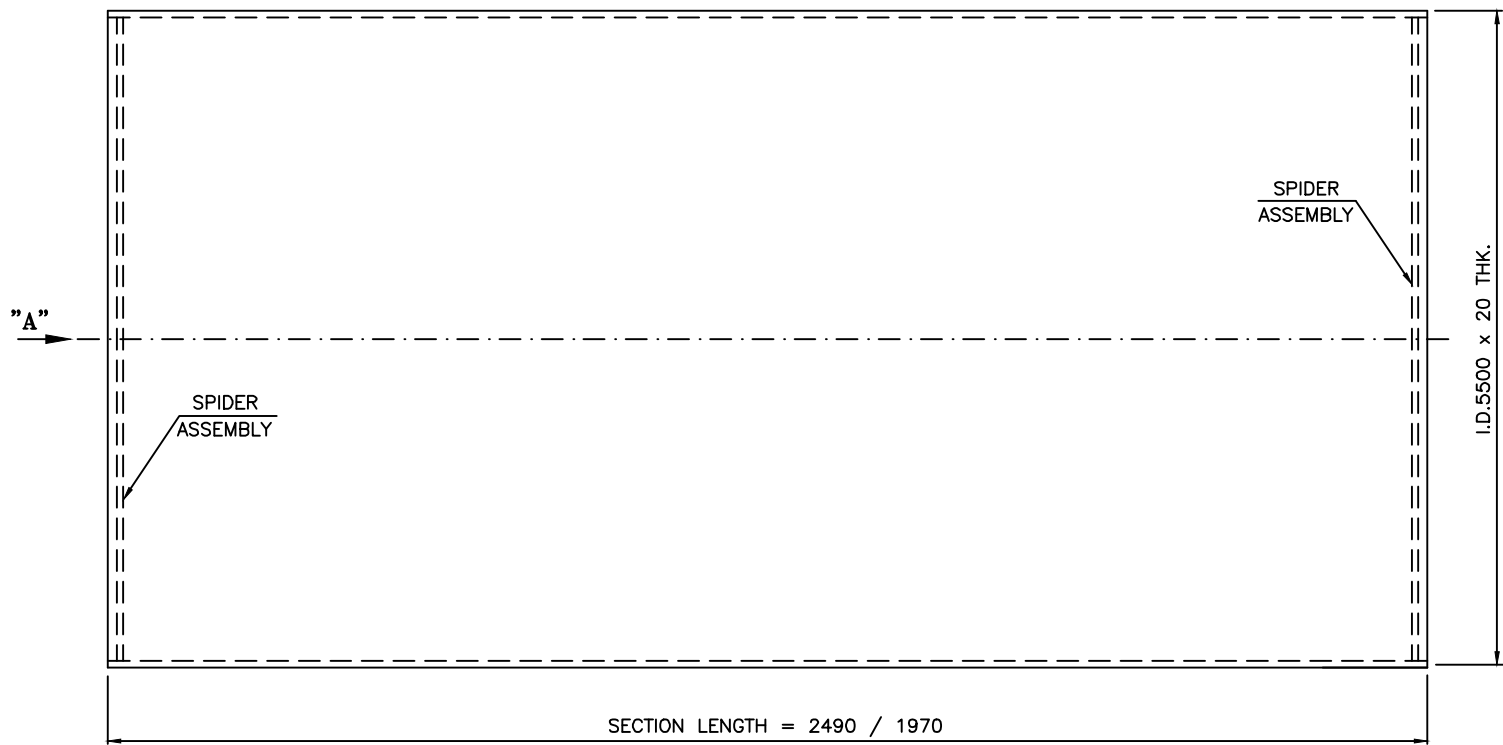
DETAIL OF BHEL NAME PLATE (02)



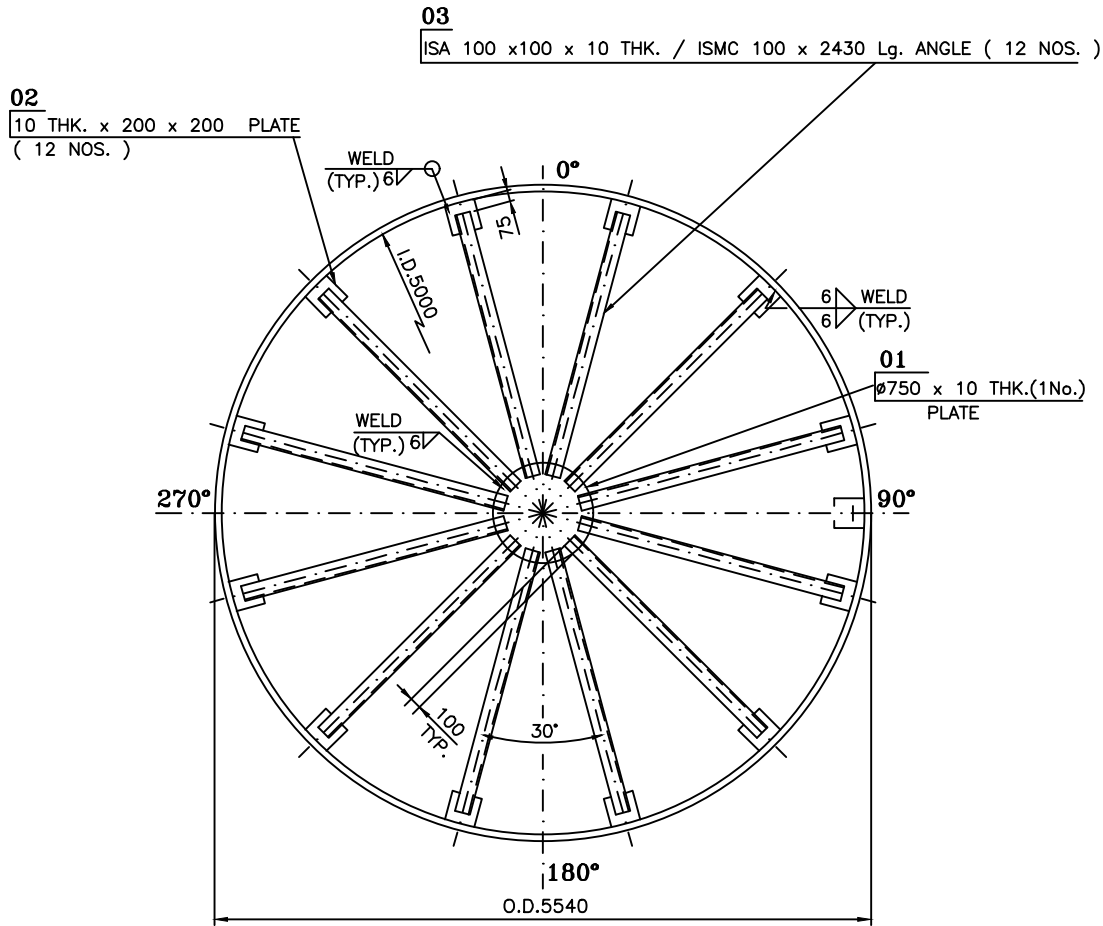
NOTE : QTY. FOR ONE ITEM ONLY

DRG. CATEGORY: (USE TICK MARK)	<input checked="" type="checkbox"/> R	<input type="checkbox"/> I	EIL REVIEW/APPROVAL	VPTL NO.:
SCH. DATE OF SUBMISSION	DOCUMENT STATUS		CODE:	
STATEMENT OF SUB [1st] [2nd] [3rd]	REVIEW CODE 1 - NO COMMENT PROCEED WITH MANUFACTURER/ FABRICATION/ CONSTRUCTION AS PER THE DOCUMENT.			
<input type="checkbox"/> FINAL FOR CODE-1	<input type="checkbox"/> AS BUILT	<input type="checkbox"/> REVIEW CODE 2 - PROCEED WITH MANUFACTURER, FABRICATION/ CONSTRUCTION AS PER THE DOCUMENT.		
<input type="checkbox"/> ORDER	<input type="checkbox"/> INFORMATION	<input type="checkbox"/> REVIEW CODE 3 - DOCUMENT DOES NOT CONFORM TO BASIC REQUIREMENTS AS MARKED. RESUBMIT FOR REVIEW.		
<input type="checkbox"/> ENQUIRY	<input type="checkbox"/> REVIEW	<input type="checkbox"/> R- DOCUMENT IS RETAINED FOR RECORDS PROCEED WITH MANUFACTURE / FABRICATION		
<input type="checkbox"/> CONSTRUCTION	<input type="checkbox"/> V- VOID			
SIGN: _____	DATE: _____	NAME _____	DISCIPLINE _____	SIGN _____
VISAKH REFINERY MODERNIZATION PROJECT				
EPC-07 PACKAGE FOR SULPHUR RECOVERY UNIT BLOCK				
HPL CONTRACT No. : 18000129-0Q-46009 EIL/CONTRACTOR'S JOB No. : B016/JI-2040				
SCALE	DRAWING NO	T SHEETS	REV	1
NTS	2040060059-M-B10-0001-0001	1	1	1

HINDUSTAN PETROLEUM CORPORATION LIMITED		ENGINEERS INDIA LIMITED (A Govt. of India Undertaking)	
CAUTION: The information on this document is the property of BHARAT HEAVY ELECTRICALS LTD. It must not be used directly or indirectly in any way detrimental to the interest of the company.		NAME PLATE DETAILS FOR AMINE FLASH DRUM (ITEM NO. 509-V-1001/509-V-2001)	
DEPT PP ENGS CODE 031	ALL DIMENSIONS ARE IN MM	PROJECTION SCALE N.T.S	WEIGHT (kg) 3.609
TITLE NAME PLATE DETAILS FOR AMINE FLASH DRUM		DRAWING NO : 3-PV-010-U0014	
REV	DATE	DESCRIPTION	PPD CHKD APPD



ELEVATION



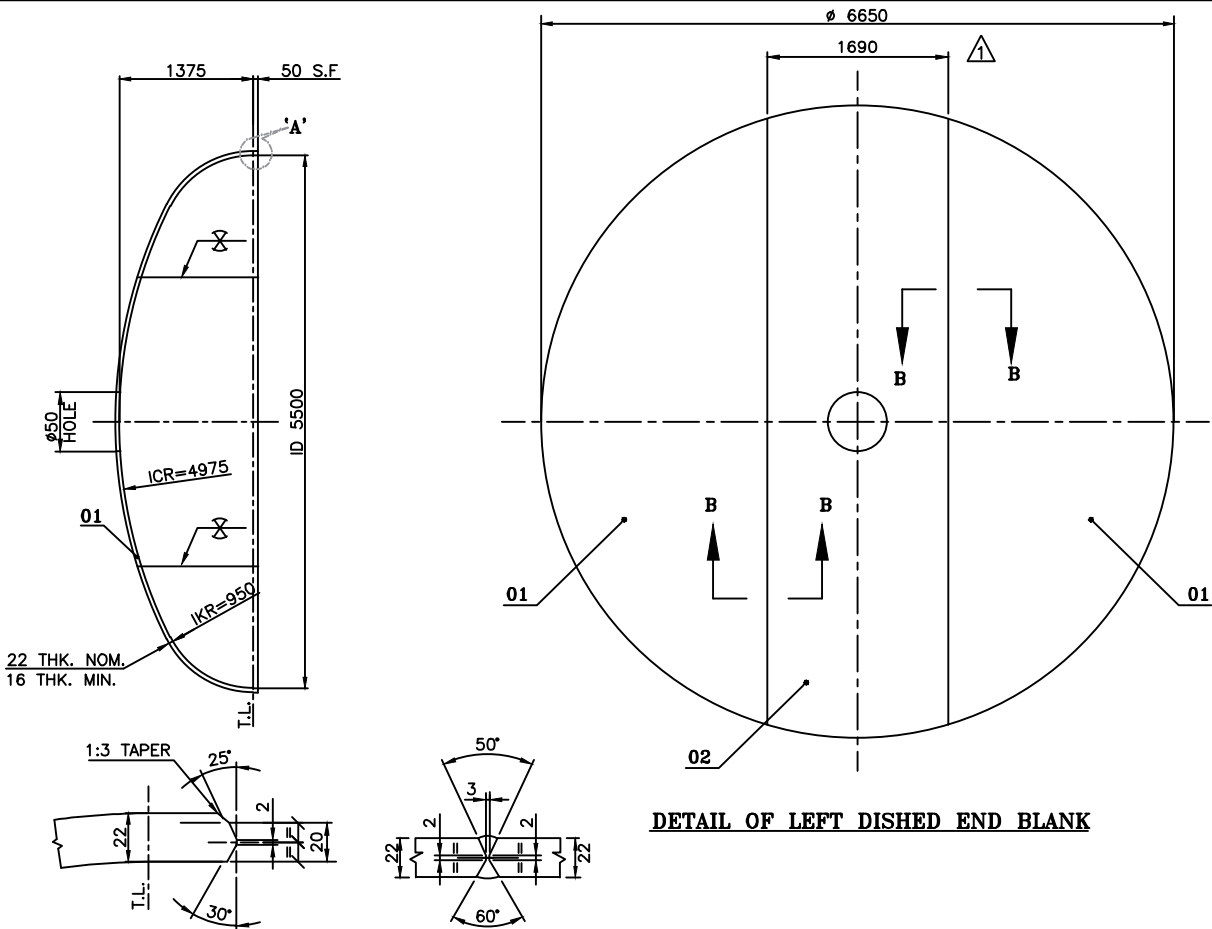
VIEW - "A"

NOTE : HIGHER THK. MATERIAL OF SIMILAR SPECIFICATION IS ACCEPTABLE.

1		LENGTH MODIFIED FOR ITEM NO.3	IM	YPK	YPK
REV	DATE	DESCRIPTION	PPD	CHKD	APPD

03	ANGLE $\triangle_{01}$ ISA 100 x 100 x 10 THK. X 2430 Lg.				—	N	36.2
02	PLATE 200 x 200 x 10 THK.				—	N	3.14
01	PLATE Ø750 x 10 THK.				—	C	44.1
					IS 2062 GrA/B		2
VARIANT NUMBER	ITEM NUMBER	DESCRIPTION	DRAWING NUMBER	ITEM NO	MATERIAL CODE	A/C/P	UNIT WEIGHT
				VAR NO	MATERIAL SPECN	Q	QUANTITY
CAUTION: The information on this document is the property of BHARAT HEAVY ELECTRICALS LTD. It must not be used directly or indirectly in any way detrimental to the interest of the company.					Bharat Heavy Electricals Ltd		
					UNIT: HEAVY PLATES & VESSELS PLANT		
					VISAKHAPATNAM-530012		
DEPT	HTE	ALL DIMENSIONS ARE IN MM	PROJECTION	SCALE	WEIGHT (Kg)	REF TO ASSY / OLD DWG	
CODE	320			N.T.S	—		
TITLE						DRAWING NO :	REV
DETAILS OF							
TEMPORARY SPIDER FOR AMINE FLASH DRUM						3-PV-010-U0048	1

CAUTION : The information on this document is the property of BHARAT HEAVY ELECTRICALS LTD. It must not be used directly or indirectly in any way detrimental to the interest of the company.



DETAIL-A

SECTION-BB

TYPE :	2:1 ELLIPSOIDAL DISHED END	CENTER HOLE :	YES
DESIGN CODE :	ASME SEC. VIII DIV. 1, EDITION-2017	PROCESS OF MGF. :	COLD FORMING
RADIOGRAPHY :	FULL	TOLERANCES :	AS PER CODE & EIL STD. 7-12-0001
JOINT EFFICIENCY :	1.0	ON CIRCUMFERENCE :	± 20
HEAT TREATMENT :	YES	ON CIRCULARITY (MAX. OD - MIN. OD) :	> 10
INSPECTION :	TPI / BHEL	ON PROFILE (DEPTH OF DISHING) :	+60, -30

FOR TENDER  
PURPOSE ONLY

ITEM NUMBER	DESCRIPTION	DRAWING NUMBER	ITEM NO	MATERIAL CODE	A/C/P	UNIT	UNIT WEIGHT
02	PL. 22 x 1690x 6650			156020540000			1941
				SA 516 Gr.60N (NACE+HIC)			1
01	PL. 22 x 2480 x 6432			156020540000			2749.5
				SA 516 Gr.60N (NACE+HIC)			2
BLANK DIA REVISED		VKK	IJAZ	13-8-19			
REV NO.		PPD.	CHD.	APPD.			

NOTES:-

1. BLANK DIAMETER SHALL BE CONFIRMED BY DEND MANUFACTURER.
2. D'END SHALL BE SINGLE PIECE WITH 2 CHORDAL JOINTS & SHALL BE NORMALISED AFTER FORMING (IF HOT FORMED)
3. CENTRE HOLE SHALL BE PLUGGED & RADIOGRAPHED 100%



**Bharat Heavy Electricals Ltd**  
UNIT: HEAVY PLATES & VESSELS PLANT  
VISAKHAPATNAM-530012

DRN	NAME	SIGNATURE	DATE
CHD	V KAVI KUMAR		27.03.19
APPD	IJAZ		27.03.19
	Y PRASANNA KUMAR		27.03.19

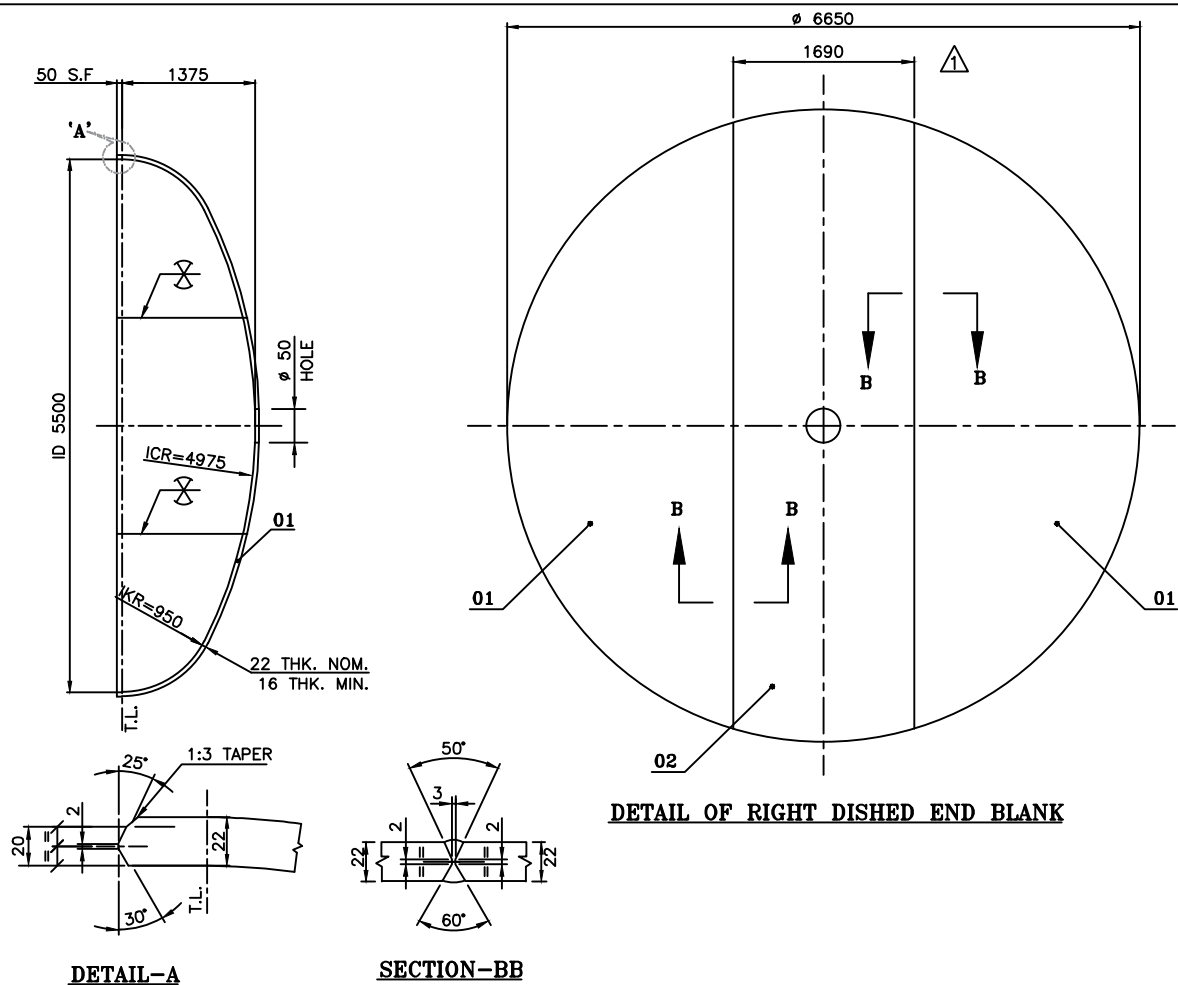
DEPT P.P.ENG.	ALL DIMENSIONS ARE IN MM	PROJECTION	SCALE	WEIGHT (Kg)	REF TO ASSY / OLD DWG
CODE 031			1: 50, N.T.S	7440	

TITLE	DRAWING NO :	REV
<b>DETAIL OF LEFT D'END FOR AMINE FLASH DRUM (ITEM 509-V-1001/2001)</b>	<b>4-PV-010-U0012</b>	<b>1</b>

FORM NO. 0420/2



y of BHARAT HEAVY  
or indirectly in any





TYPE :	2:1 ELLIPSOIDAL DISHED END	CENTER HOLE :	YES ( TO BE PLUGGED) SEE NOTE - 3
DESIGN CODE :	ASME SEC. VIII DIV. 1, EDITION-2017	PROCESS OF MGF. :	COLD FORMING
RADIOGRAPHY :	FULL	TOLERANCES :	AS PER CODE & EIL STD. 7-12-0001
JOINT EFFICIENCY :	1.0	ON CIRCUMFERENCE :	$\pm 20$
HEAT TREATMENT :	YES	ON CIRCULARITY (MAX. OD - MIN. OD) :	$\geq 10$
INSPECTION :	TPI / BHSL	ON PROFILE (DEPTH OF DISHING) :	$+60, -30$

**FOR TENDER**  
**PURPOSE ONLY**

02	PL. 22 x 1690 x 6650		156020540000				1941
			SA 516 Gr.60N (NACE+HIC)				1
01	PL. 22 x 2480 x 6432		156020540000				2749.5
			SA 516 Gr.60N (NACE+HIC)				2
ITEM NUMBER	DESCRIPTION	DRAWING NUMBER	ITEM NO	MATERIAL CODE	A/C/P	UNIT	UNIT WEIGHT
			VAR NO	MATERIAL SPECN			DI
①	BLANK DIA REVISED				VKK	IJAZ	IJAZ 13.8.19
REV NO.	BRIEF RECORD OF REVISIONS				PPD.	CHD.	APPD.

NOTES:—

1. BLANK DIAMETER SHALL BE CONFIRMED BY D'END MANUFACTURER.
2. D'END SHALL BE SINGLE PIECE WITH 2 CHORDAL JOINTS & SHALL BE NORMALISED AFTER FORMING (IF HOT FORMED)
3. CENTRE HOLE SHALL BE PLUGGED & RADIOGRAPHED 100%

<div></div> <div><b>Bharat Heavy Electricals Ltd</b> <b>UNIT: HEAVY PLATES &amp; VESSELS PLANT</b> <b>VISAKHAPATNAM-530012</b></div>				NAME		SIGNATURE		DATE			
				DRN		V KAVI KUMAR				27.03.19	
				CHD		IJAZ M				27.03.19	
				APPD		Y PRASANNA KUMAR				27.03.19	
DEPT P.P.ENG.	ALL DIMENSIONS	PROJECTION	SCALE	WEIGHT (Kg)	REF TO ASSY / OLD DWG						
CODE 031	ARE IN MM		1: 50,N.T.S	7440							
TITLE					DRAWING NO :					REV	
<div><u><b>DETAIL OF RIGHT D'END FOR</b></u> <u><b>AMINE FLASH DRUM</b></u> <u><b>(ITEM 509-V-1001/2001)</b></u></div>					4-PV-010-U0013					1	