OIL INDIA LIMITED
(A Government of India Enterprises)
PO : Duliajan – 786602
Assam (India)

TELEPHONE NO. (91-374) 2808719
FAX NO: (91-374) 2800533
Email: ranjanbarman@oilindia.in; erp_mm@oilindia.in

FORWARDING LETTER

Tender No. : **SDI9755P19 DT:15.11.2018**

Tender Fee : **NIL**

Bid Security : **Applicable**

Bidding Type : **SINGLE STAGE TWO BID SYSTEM**

Bid Closing on : **10.01.2019 (11.00 HRS IST)**

Bid Opening on : **10.01.2019 (14.00 HRS IST)**

Performance Security : **Applicable**

Integrity Pact : **Applicable**

DATE OF PRE-BID CONFERENCE : 20.12.2018

TIME OF PRE-BID CONFERENCE : 09 HRS

VENUE OF PRE-BID CONFERENCE : DULIAJAN

OIL invites Bids for **SUPPLY OF INDIRECT WATER BATH HEATER PACKAGE FOR PROCESSING CRUDE OIL: Quantity: 55 Nos** through its e-Procurement site under **SINGLE STAGE TWO BID SYSTEM**. The bidding documents and other terms and conditions are available at Booklet No. MM/LOCAL/E-01/2005 for E-Procurement of Indigenous Tenders. The prescribed Bid Forms for submission of bids are available in the Technical RFx -> External Area - > Tender Documents

The general details of tender can be viewed by opening the RFx [Tender] under RFx and Auctions. The details of items tendered can be found in the Item Data and details uploaded under Technical RFX.

NOTES:

(1) A Pre-Bid Conference with the vendors will be held at DULIAJAN to discuss on the technical specifications and other terms and conditions of the tender. All the vendors who registers themselves against this Tender Document before the sale of Pre-bid Conference

date i.e 20.12.2018 (or amended otherwise) will be eligible to attend the Pre-Bid Conference. The exact venue and time of the Pre-Bid conference will be intimated to the vendors at a later date.

(2) Clarification on the technical specifications and other terms & conditions of the tender shall be provided to the vendors during the Pre-bid Conference. Vendors should come fully prepared to the Pre-bid Conference and submit their queries to OIL in the Pre-bid Conference for clarification. The set of queries shall be sent to OIL at least 5 days before the Pre-bid Conference (ie Within 15.12.2018) for study by OIL.

(3) Any changes in the technical specifications and other terms & conditions of the tender arising out of discussion in the Pre-bid Conference shall also form part of the tender document. In the Pre-bid Conference specifications, terms and conditions of the NIT will be frozen and no request for amendment to NIT shall be entertained after the pre bid conference.

(4) Vendors shall depute representatives who are competent enough and authorized to take on the spot decision. At the most 2 (Two) representatives from each vendor shall be allowed to participate in the pre-bid conference. All costs for attending the pre-bid conference shall be to the vendors account.

(5) Vendors, immediately after the purchase of the Tender documents, shall inform OIL at the following address about their participation in the Pre-Bid Conference with details of the persons to enable OIL to make arrangement for the Pre-Bid Conference.

GM – MATERIALS, OIL INDIA LIMITED
P.O DULIAJAN, PIN – 786 602, DIST. DIBRUGARH (ASSAM) INDIA
FAX NO. : +91 - 374 – 2800533, E-Mail : ranjanbarman@oilindia.in

The tender will be governed by:

a) For technical support on various matters viz. Online registration of vendors, Resetting of Passwords, submission of online bids etc, vendors should contact OIL's ERP MM Deptt at following: Tel Nos = 0374-2807178, 0374-2807171 , 0374-2807192. Email id = erp_mm@oilindia.in.

b) OIL's office timings are as below:

	Time (in IST)
Monday – Friday	**07.00 AM to 11.00 AM; 12.30 PM to 03.30 PM**
Saturday	**07.00 AM to 11.00 AM**
Sunday and Holidays	**Closed**

Vendors should contact OIL officials at above timings only.

OIL Bank Details :

	Bank Details of Beneficiary	
a	Bank Name	STAE BANK OF INDIA
b	Branch Name	Duliajan
c	Branch Address	Duliajan, Dist-Dibrugarh

d	Banker Account No.	10494832599
e	Type of Account	Current Account
f	IFSC Code	SBIN0002053
g	MICR Code	786002302
h	SWIFT Code	SBININBB479
i	Contact No.	9435554859
j	Contact Person Name	Mr. K.L.K.Banik, AGM
k	Fax No.	0374-2802729
l	Email Id	sbi.02053@sbi.co.in

c) "General Terms & Conditions" for e-Procurement as per Booklet No. MM/LOCAL/E-01/2005 for E-Procurement of Indigenous Tenders.

d) Technical specifications and Quantity as per **Annexure – 1A**.

e) The prescribed Bid Forms for submission of bids are available in the Technical RFx -> External Area - > Tender Documents.

f) Amendments to the NIT after its issue will be published on OIL's website only. Revision, clarification, addendum, corrigendum, time extension etc. to the tender will be hosted on OIL website only. No separate notification shall be issued in the press. Prospective bidders are requested to visit website regularly to keep themselves updated.

g) Any sum of money due and payable to the contractor (including Security Deposit refundable to them) under this or any other contract may be appropriated by Oil India Limited and set-off against any claim of Oil India Limited (or such other person or persons contracting through Oil India Limited) for payment of sum of money arising out of this contract or under any other contract made by the contractor with Oil India Limited (or such other person or persons contracting through Oil India Limited).

h) Bidder are advised to fill up the Technical bid check list (**Annexure EEE**) and Response sheet (**Annexure FFF**) given in MS excel format in Technical RFx -> External Area - > Tender Documents. The above filled up document to be uploaded in the Technical Attachment. For details please refer "Vendor User Manual" / "NEW INSTRUCTIONS"

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Special Notes:

1.0

a) Bidders who do not have E-tender Login ID and Password should complete their online registration at least seven (7) days prior to the scheduled bid closing date and time of the tender. For online registration, Bidder may visit the OIL's E-tender site https://etender.srm.oilindia.in/irj/portal

b) Necessary Login ID & Password will be issued by OIL only after submitting the complete online registration by the Bidder. In the event of late registration/incomplete registration by Bidder, OIL INDIA LIMITED shall not be responsible for late allotment of User ID & Password and request for bid closing date extension on that plea shall not be entertained by Company.

c) **MSEs Units (manufacturers only and not their dealers/distributors) who are already registered with District Industry Centers or Khadi & Village Industries Commission or Khadi & Village Industries Board or Coir Board or National Small Industries Corporation or Directorate of Handicrafts & Handloom or any other body specified by Ministry of MSME are exempted from payment of Bid Security (EMD) irrespective of monetary limit mentioned in their registration, provided they are registered for the item they intend to quote/participate.**

d) **For availing benefits under Public Procurement Policy (Purchase preference & EMD exemption), the interested MSE Bidders must ensure that they are the manufacturer of tendered item(s) and registered with the appropriate authority for the said item(s). Bids without EMD shall be rejected, if the technical offer does not include a valid copy of relevant MSE Certificate issued by appropriate authority specifying the item as per tender. Therefore, it is in the interest of such MSE Vendors to furnish a copy of complete certificate to the concerned tender handling officer of OIL at least seven (7) days prior to the scheduled Bid Closing Date of the tender, seeking clarification/confirmation as to whether their registered item is eligible for EMD exemption or not. Late communication in this regard and request for bid closing date extension on that plea shall not be entertained by Company.**

NOTE:
In case of MSE/PSUs/ Govt. Bodies / eligible institutions etc., they must apply to concerned tender handling officer, Materials Department, Oil India Limited, P.O. Duliajan, Assam-786602 for waiver of EMD upto one week prior to the Bid closing date (or as amended in e-portal).

2.0 The tender is invited under SINGLE STAGE-TWO BID SYSTEM. The bidders are required to submit both the "TECHNO-COMMERCIAL UNPRICED BID" and "PRICED BID" through electronic format in the OIL's e-Tender portal within the Bid Closing Date and Time stipulated in the e-Tender.

2.1 Please ensure that Technical Bid / all technical related documents related to the tender are uploaded in the RFx Information > Technical Attachment only**.** The "**TECHNO-COMMERCIAL UNPRICED BID**" shall contain all techno-commercial details **except the prices**. **Please note that no price details should be uploaded in** Technical RFx Response**.**

2.2 The "**PRICE BID**" must contain the price schedule and the bidder's commercial terms and conditions. **For price upload area , please refer** "NEW INSTRUCTIONS" Please refer Annex-BB for price schedule.

2.3 Offer not complying with above submission procedure will be rejected as per Bid Rejection Criteria mentioned in Annexure-CCC.

3.0 Please note that all tender forms and supporting documents are to be submitted through OIL's e-Procurement site only except following documents which are to be submitted manually in sealed envelope super scribed with **Tender no.** and **Due date** to **DGM-Materials, Materials Department, Oil India Limited, Duliajan - 786602, Assam** on or before the Bid Closing Date and Time mentioned in the Tender.

a) **Original Bid Security**
b) **Detailed Catalogue (if any)**
c) **Any other document required to be submitted in original as per tender requirement**

All documents submitted in physical form should be signed on all pages by the authorised signatory of the bidder and to be submitted in Duplicate.

4.0 Benefits to Micro & Small Enterprises (MSEs) as per OIL's Public Procurement Policy for Micro and Small Enterprises (MSEs) shall be given. Bidders are requested to go though ANNEXURE – I of MM/LOCAL/E-01/2005 for E-Procurement of Indigenous Tenders for more details. MSE bidders are exempted from submission of Tender Fees and Bid Security/Earnest Money provided they are registered for the items they intend to quote.

5.0 Bidders are requested to examine all instructions, forms, terms and specifications in the bid. Failure to furnish all information required as per the NIT or submission of offers not substantially responsive to the bid in every respect will be at the bidders risk and may result in rejection of its offer without seeking any clarifications.

6.0 Bidders must ensure that their bid is uploaded in the system before the tender closing date and time. Also, they must ensure that above documents which are to be submitted in a sealed envelope are also submitted at the above mentioned address before the bid closing date and time failing which the offer shall be rejected.

7.0 Bid must be submitted electronically only through OIL's e-procurement portal. Bid submitted in any other form will be rejected.

8.0 **SINGLE STAGE TWO BID SYSTEM** shall be followed for this tender and only the PRICED-BIDS of the bidders whose offers are commercially and technically acceptable shall be opened for further evaluation.

9.0 **a) The Integrity Pact is applicable against this tender. Therefore, please submit the Integrity Pact document duly signed along with your quotation as per BRC. OIL shall be entering into an Integrity Pact with the bidders as per format enclosed vide Annexure DDD of the tender document. This Integrity Pact proforma has been duly signed digitally by OIL's competent signatory. The proforma has to be submitted by the bidder (along with the technical bid) duly signed (digitally) by the same signatory who signed the bid, i.e., who is duly authorized to sign the bid. Uploading the Integrity Pact with digital signature will be construed that all pages of the Integrity Pact has been signed by the bidder's authorized signatory who sign the Bid. If any bidder refuses to sign Integrity Pact or declines to submit Integrity Pact with the offer, their bid shall be rejected straightway.**

b) The name of the OIL's Independent External Monitors at present are as under:

i) SHRI RAJIV MATHUR, IPS (Retd.)
Former Director, IB, Govt. of India,
e-Mail ID : rajivmathur23@gmail.com

ii) SHRI SATYANANDA MISHRA, IAS (Retd.)
Former Chief Information Commissioner &
Ex-Secretary, DOPT, Govt. of India
E-Mail ID : satyanandamishra@hotmail.com

iii) SHRI JAGMOHAN GARG
EX-VIGILANCE COMMISSIONER, CVC
E-mail id: jagmohan.garg@gmail.com

10.0 The tender shall be governed by the Bid Rejection & Bid Evaluation Criteria given in enclosed **Annexure-CCC**. However, if any of the Clauses of the Bid Rejection Criteria / Bid Evaluation Criteria (as per **Annexure-CCC**) contradict the Clauses of the tender and /

or "General Terms & Conditions" as per Booklet No. MM/LOCAL/E-01/2005 for E-Procurement of Indigenous Tenders elsewhere, those in the BEC / BRC shall prevail.

11.0 To ascertain the substantial responsiveness of the bid OIL reserves the right to ask the bidder for clarification in respect of clauses covered under BRC also and such clarifications fulfilling the BRC clauses in toto must be received on or before the deadline given by the company, failing which the offer will be summarily rejected.

12.0 Please do refer the User Manual provided on the portal on the procedure How to create Response for submitting offer.

13.0 If Bank Guarantee is submitted towards 'Bid Security', then bidders have to ensure that the Bank Guarantee issuing bank indicate the name and detailed address (including e-mail) of their higher office from where confirmation towards genuineness of the Bank Guarantee can be obtained.

14.0 Bidders are requested to refer to the enclosed **Annexure – BBB** for the Taxes and Duties clauses under GST regime.

15.0 Delivery/collection Instructions in cases where transportation is in OIL's scope:

(i) the suppliers shall be required to deliver the Sundry consignments of weight less than 3 (Three) Tons at the godown/office/collection point of OIL's authorized transporter in various cities.
(ii) consignments weighing more than 3(Three) Tons shall be collected from the supplier's premises/loading points by OIL's authorized transporter.
(iii) the names of OIL's current authorized transporters are:
a) M/s Western Carriers (India) Ltd.
b) M/s DARCL Logistics Limited

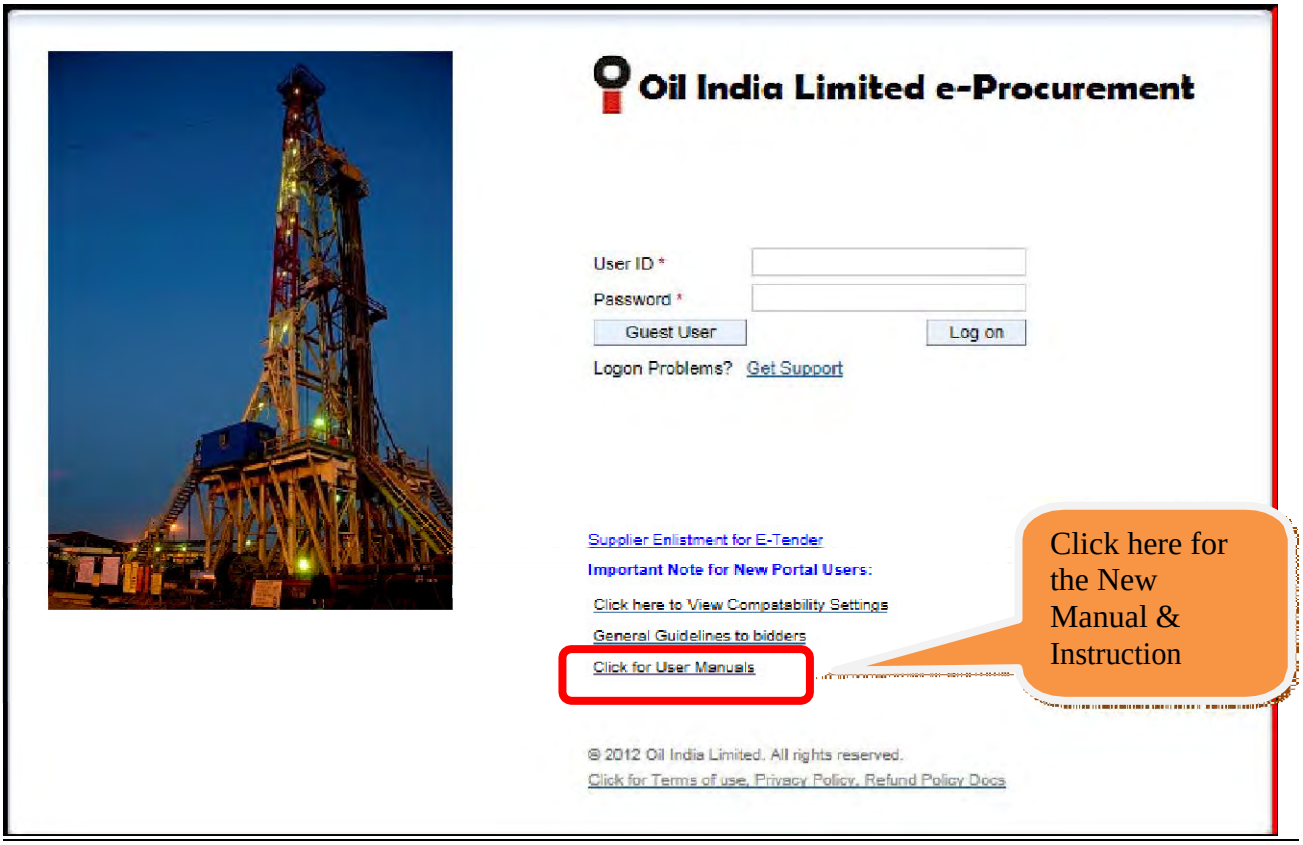
16.0 While submitting the offers bidders are requested to refer to the enclosed **Annexure – BB (Price Bid Format and Evaluation Criteria).**

17.0 Bidders should fill-up and submit alongwith their bid an UNDERTAKING towards authenticity of information/documents furnished by them, as per enclosed ANNEXURE-K.

Bidder's are requested to note the above delivery/collection instructions while submitting their offers.

18.0 The applicable GST on the Liquidated Damage if any, shall have to be borne by the Seller. Accordingly, the Liquidated Damage shall be recovered from the seller along with applicable GST.

Please do refer "NEW INSTRUCTION TO BIDDER FOR SUBMISSION" for the above two points and also please refer "New Vendor Manual (effective 12.0.2017)" available in the login Page of the OIL's E-tender Portal.



NOTE:

Bidders should submit their bids (preferably in tabular form) explicitly mentioning compliance / non compliance to all the NIT terms and conditions of NIT.

Yours Faithfully

Sd-

(R BARMAN)
CMM (IP)
FOR GM-MATERIALS

Annexure - CCC

Tender No & Date: SDI9755P19 DT: 15.11.2018

BID REJECTION CRITERIA (BRC) / BID EVALUATION CRITERIA (BEC)

The following BRC/BEC will govern the evaluation of the bids received against this tender. Bids that do not comply with stipulated BRC/BEC in full will be treated as non responsive and such bids shall prima-facie be rejected. Bid evaluation will be done only for those bids that pass through the "Bid Rejection Criteria" as stipulated in this document.

Other terms and conditions of the enquiry shall be as per General Terms and Conditions vide MM/LOCAL/E-01/2005 for E-Procurement of Indigenous Tenders. However, if any of the Clauses of the Bid Rejection Criteria / Bid Evaluation Criteria (BRC / BEC) contradict the Clauses of the tender or MM/LOCAL/E-01/2005 elsewhere, those in the BRC / BEC shall prevail.

Criteria

1.0 BID REJECTION CRITERIA (BRC):

The bid shall conform generally to the specifications, terms and conditions given in this document. Notwithstanding the general conformity of the bids to the stipulated specifications, the following requirements will have to be particularly met by the Bidders without which the same will be considered as non-responsive and rejected.

A) TECHNICAL:

1.0 Bidder's Qualification:

1.1 The bidder shall be an Original Equipment Manufacturer (OEM) of the tender items.
1.2 The bidder shall carry out the fabrication work of the tender item by engaging welders who are qualified under ASME boiler and pressure vessel code section- IX regulations. Documentary evidence in regard of welder qualifications shall be submitted by the bidder along with the bid. The list of welder(s), who will be engaged for fabrication of the tender item, along with respective welder performance qualification test report carried out within last 05 years preceding original bid closing date of this tender, shall be submitted along with the technical bid.

2.0 Bidder's Experience:

2.1 The bidder shall have the experience of successful execution of order(s) for not less than 17 Nos. of Indirect Heater or any of the crude oil process equipment as detailed below, to Oil & Gas Industries and/or to E&P Company in last 07 years from the original bid closing date of the tender.
(a) Indirect Heater of working pressure of 105.46 kg/cm2 or above.
(b) Steam jacket of working pressure of 105.46 kg/cm2 or above.
(c) Crude Oil Emulsion Treater of working pressure 2.0 kg/cm2 or above.
(d) Gas Oil Separator of minimum 200 KLPD capacities & working pressure 1.0 kg/cm2 or above.

2.2 The bidder shall submit the following documents in support of successful execution of past supply /contract, as applicable under clause 2.1
(a) Copy(ies) of Purchase Order(s) / Contract document(s), and

(b) Any of the following documents that confirms the successful execution of the order(s)-
- Performance/Commissioning Report from the clients,
- Delivery challan / invoice etc.
- any other documentary evidence that can substantiate the successful execution of each of the above Purchase Order/ contract.

2.3 Note regarding supply experience:

a) The Purchase Order date need not be within 7 (seven) years preceding original bid closing date of this tender. However, the execution of supply should be within 7 (seven) years preceding original bid closing date of this tender.

b) Satisfactory supply/completion/installation report (if submitted) should be issued on client's official letterhead with signature and stamp.

3.0 Delivery date for entire tender quantity should be of maximum 12 months from the date of issue of LOI. The bidder should categorically confirm in their technical bid that the tendered items will be supplied within the delivery period, without which the bid will be rejected.

4.0 OIL reserves the right to split the tender quantity (55 Nos.) in the ratio of 60:40, i.e. 60% quantity (33 Nos.) would be awarded on L1 Bidder and remaining 40% (22 Nos.) on other technically qualified bidder (L2, L3… and so on in that order), subject to matching their quoted rate on FOR Duliajan basis with L1 bidder. In the event of single acceptable bid scenario or refusal by other bidders to match with L1 rate, purchase order for full quantity of 55 Nos. may be placed on the L1 Bidder.

B) FINANCIAL:

a) Annual Financial Turnover of the bidder during **any of preceding 03 (three) financial / accounting years from the original bid closing date** should be at least **Rs. 6.55 Crores.**

b) Net Worth of the firm should be Positive for preceding financial /
Accounting year **(FY: 2017-2018)**.

Note -For (a) & (b):
Considering the time required for preparation of Financial Statements, if the last date of preceding financial / accounting year falls within the preceding six months reckoned from the original bid closing date and the Financial Statements of the preceding financial / accounting year are not available with the bidder, then the financial turnover of the previous three financial / accounting years excluding the preceding financial / accounting year will be considered. In such cases, the Net worth of the previous financial / accounting year excluding the preceding financial / accounting year will be considered. However, the bidder has to submit an affidavit/undertaking certifying that 'the balance sheet/Financial Statements for the financial year ….....…… (As the case may be) has actually not been audited so far'.

Note:
a) For proof of Annual Turnover & Net worth any one of the following document must be submitted along with the bid:-

i) A certificate issued by a practicing Chartered Cost Accountant (with Membership Number and Firm Registration Number), certifying the Annual turnover & Net worth as per format prescribed in **ANNEXURE-J**.

OR

ii) Audited Balance Sheet along with Profit & Loss account."

b) In case the bidder is a Central Govt. Organization/PSU/State Govt. Organization/Semi-State Govt. Organization or any other Central/State Govt. Undertaking, where the auditor is appointed only after the approval of Comptroller and Auditor General of India and the Central Government, their certificates may be accepted even though FRN is not available. However, bidder to provide documentary evidence for the same.

C) COMMERCIAL:

i) Validity of the bid shall be minimum 120 days from the Bid Closing Date.

ii) Bid security:
The bid must be accompanied by Bid Security of **Rs.31,20,600.00** in OIL's prescribed format as Bank Guarantee in favour of OIL. The Bid Security may be submitted manually in sealed envelope superscribed with Tender no. and Bid Closing date to GM-Materials, Materials Department, Oil India Limited, Duliajan- 786602, Assam on or before the Bid Closing Date and Time mentioned in the Tender. **The Bank Guarantee towards Bid Security shall be valid for 7 months from Bid closing date. (i.e. upto 31.08.2019).**

Bid Security may also be paid online on or before the Bid Closing Date and Time mentioned in the Tender.

If bid security in ORIGINAL of above mentioned Amount and Validity is not received or paid online within bid closing date and time, the bid submitted through electronic form will be rejected without any further consideration.

For exemption for submission of Bid Security, please refer Clause No. 8.16 of General Terms and Conditions vide MM/LOCAL/E-01/2005 for E-Procurement of Indigenous Tenders.

The format of Bank Guarantee towards Bid Security (Annexure – VII) has been amended to Annexure – VII (Revised) and bidders should submit Bank Guarantee towards Bid Security as per Annexure – VII (Revised) only.

iii) Bids are invited under "Single Stage Two Bid System". Bidders have to submit both the "Techno-commercial Unpriced Bids" and "Priced Bids" through electronic form in the OIL's e-Tender portal within the bid Closing date and time stipulated in the e-tender. The Techno-commercial Unpriced bid is to be submitted as per scope of works and Technical specification of the tender and the priced bid as per the online Commercial bid format. For details of submission procedure, please refer relevant para of General Terms and Conditions vide MM/LOCAL/E-01/2005 for E-Procurement of Indigenous Tenders. Any offer not complying with the above shall be rejected straightway.

iv) Performance Security:
The successful bidder shall submit Performance Security @ 10% of PO value within 30 days of receipt of the formal purchase order failing which OIL reserves the right to cancel the order and forfeit the Bid Security.

The Performance Security shall be in the following forms :
A Bank Guarantee in the prescribed OIL's format valid for 3(three) months beyond the Warranty period indicated in the Purchase Order /contract agreement.

Bidders should undertake in their bids to submit Performance Security as stated above.

The validity requirement of Performance Security is assuming despatch within stipulated delivery period and confirmation to all terms and conditions of order. In case of any delay in despatch or non-confirmation to all terms and conditions of order, validity of the Performance Security is to be extended suitably as advised by OIL.

v) The prices offered will have to be firm through delivery and not subject to variation on any account. A bid submitted with an adjustable price will be treated as non-responsive and rejected.
vi) Bids received after the bid closing date and time will be rejected. Similarly, modifications to bids received after the bid closing date & time will not be considered.
vii) All the Bids must be Digitally Signed using "Class 3" digital certificate with Organisation's name *(e-commerce application)* as per Indian IT Act obtained from the licensed Certifying Authorities operating under the Root Certifying Authority of India (RCAI), Controller of Certifying Authorities (CCA) of India. The bid signed using other than "Class 3 with Organisation's Name" digital certificate, will be rejected.
viii) **Technical RFx Response folder is meant for Technical bid only. Therefore, No price should be given in Technical RFx Response folder, otherwise the offer will be rejected.**
ix) Price should be maintained in the "online price schedule" only. The price submitted other than the "online price schedule" shall not be considered.

x) A bid shall be rejected straightway if it does not conform to any one of the following clauses:
(a) Validity of bid shorter than the validity indicated in the Tender.
(b) Original Bid Security not received within the stipulated date & time mentioned in the Tender.
(c) Bid Security with (i) Validity shorter than the validity indicated in Tender and/or (ii) Bid Security amount lesser than the amount indicated in the Tender.
(d) In case the Party refuses to sign Integrity Pact.
(e) Annual Turnover of a bidder lower than the Annual turnover mentioned in the Tender.

XI) DELIVERY: DELIVERY DATE SHOULD BE OF MAXIMUM 12 MONTHS FROM THE DATE OF ISSUE OF LOI /LETTER OF CREDIT.THE BIDDER SHOULD CATEGORICALLY CONFIRM IN THEIR TECHNICAL BID THAT THE TENDERED ITEMS WILL BE SUPPLIED WITHIN THE DELIVERY PERIOD, WITHOUT WHICH THE BID WILL BE REJECTED.

NOTE: FOR CLAUSE NOS. C(ii) & C(iv) OF BID SECURITY/EMD AND PBG.

The bidders/successful bidders are requested to advise the Bank Guarantee issuing bank to comply with the following and ensure to submit, the receipt of the copy of SFMS message as sent by the issuing bank branch, along with the original bank guarantee in Oil's tender issuing office:
The bank guarantee issued by the bank must be routed through SFMS platform as per following details:
(i) "MT 760 / MT 760 COV for issuance of bank guarantee.
(ii) "MT 760 / MT 767 COV for amendment of bank guarantee
The above message/intimation shall be sent through SFMS by the BG issuing bank branch to Axis Bank, Duliajan Branch, IFS Code - UTIB0001129, Branch Address - AXIS Bank Ltd,

Duliajan Branch, Daily Bazar, Jyotinagar, Duliajan, District - Dibrugarh, PIN- 786602

2.0 BID EVALUATION CRITERIA (BEC)

The bids conforming to the terms and conditions stipulated in the tender and considered to be responsive after subjecting to the Bid Rejection Criteria as well as verification of original of any or all documents/ documentary evidences pertaining to BRC, will be considered for further evaluation as per the Bid Evaluation Criteria given below. The original Bid Closing Date shall be considered by OIL for evaluation of BRC criteria even in case of any extension of the original Bid Closing Date.

A) TECHNICAL:

1. The manufactured product should be strictly as per OIL's tender specification.

B) COMMERCIAL:

i) To evaluate the inter-se-ranking of the offers, all Taxes / Levies will be considered as per prevailing Govt. guidelines as applicable on the bid opening date for entire tendered quantity. Bidders may check this with the appropriate authority before submitting their offer.

ii) Priced bids of only those bidders will be opened whose offers are found technically acceptable. The technically acceptable bidders will be informed before opening of the "priced bid".

iii) A job executed by a bidder for its own organization / subsidiary cannot be considered as experience for the purpose of meeting BEC.

iv) To ascertain the substantial responsiveness of the bid OIL reserves the right to ask the bidder for clarification in respect of clauses covered under BRC also and such clarifications fulfilling the BRC clauses in toto must be received on or before the deadline given by the company, failing which the offer will be summarily rejected.

NOTE:
Bidders should submit their bids (preferably in tabular form) explicitly mentioning compliance / non compliance to all the NIT terms and conditions of NIT.

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ANNEXURE-IA

TECHNICAL SPECIFICATIONS WITH QUANTITY

Tender No & Date: SDI9755P19 DT: 15.11.2018

MATERIALS DESCRIPTION	Complied / Not Complied. (Remarks if any)
ITEM NO. 10 **INDIRECT WATER BATH HEATER PACKAGE FOR PROCESSING CRUDE OIL: Quantity: 55 Nos** Double Coiled Bath Type Field Indirect Heater of heating capacity 0.88 x 10^6 watts (3.0 MM BTU/HR.) for heating 10,000 BBLS (1800 KLS) per day of crude oil associated with sweet natural gas at 105.46 kg/cm2 pressure, generally as per OIL drawings - OIL /2670/A, OIL/5303, OIL/2672./A, OIL/ 2051/C , OIL/PDNO/P&D/001/01 . 1.0 SERVICE CONDITION 1.1 Fluid to be handled : Crude oil mixed with sweet natural gas & formation water 1.2 Flow Rate : 10,000 BBLS (1800 KLS) per day 1.3 Heating capacity : 0.88 x 10^6 watts (3.0 MM BTU/HR.) 1.4 Coil operating pressure : 105.46 kg/cm2 (1500 psig) 1.5 Bath medium : Water 1.6 Shell Operating Pressure : Water Fill-up 1.7 Water bath temp : 90 Deg. C 2.0 DRAWINGS : The indirect Heater shall be manufactured as per following OIL drawings 2.1 OIL /2670/A : Bath type IH General Arrangement 2.2 OIL/5303 : Details of Shell Sub Assembly 2.3 OIL/2672./A : Details of Fire Tube and Chimney 2.4 OIL/ 2051/C : Detail of Indirect Heater Coil. 2.5 OIL/PDNO/P&D/001/01: Flame Arrester 2.6 OIL/PDNO/P&D/024/A(1): Indirect Heater Pilot Burner 2.7 OIL/PDNO/P&D/024/A(2) : P &ID diagram, Burner control 3.0 APPLICABLE STANDARDS FOR MATERIAL OF CONSTRUCTION & FABRICATION 3.1 Fire Tube :Seamless Carbon Steel Pipe as per ASTM A106 Gr. B Standard 3.2 Coil Pipe & return bend :Seamless Carbon Steel Pipe as per ASTM A106 Gr. B/ API 5L Gr. B, 3.3 Shell Body :As per IS2062 Gr. B Standard 3.4 Coil Flange :As per ASTM 105 3.5 Fastners :As per IS 1364 / ASTM A 307 Standard (For non pressure parts) 3.6 Studs & Nuts :As per ASTM A193 Gr. B7 & ASTM A194 Gr. 2H Standard 3.7 Fuel Gas piping system : As per ASME B31.3 Standard	

3.8 Welding :As per ASME Section IX.
3.9 Design, fabrication & Shop testing : As per API Spec 12K
3.10 Shell nameplate : As Per API 12K

4.0 SHELL

Shell will conform to all the requirements and dimensions of OIL Drawing no: OIL/5303 and must have adequate nozzles for inlet, outlet of coils, fire tube and mounting, various equipment & instruments for burner, drain valves etc.

The Indirect Heater shell will have suitable lifting lugs attached for lifting and placing the same at site.

The Indirect Heater shell will have Two (2) nos plates to be welded with. 3/4" studs with nuts (1 each at one of the legs and the vessel) for electrical earthing.

Reference Drawing no: OIL/5303(Details of Shell Sub Assembly)

5.0 Coils (Seamless):

5.1 No. of Coil : 2 (two) sets
5.2 No. of Pass: 8 (Eight) passes for each coil.
5.3: Coil size: 4"(101.6mm) NB x 0.237" (6.02mm) wall thickness (Schedule 40/STD) for straight pipes and 0.337" (8.55mm) wall thickness (Schedule 80/XS) for return bends.
5.4 Coil Material : Seamless pipe as per API-5L Gr. B, ASTM A106 Gr. B .
5.5 Coil Operating Pressure: Max: 105.46 kg/cm2 (1500 psig)
5.6 Coil Hydraulic Test Pressure: 1.5 times the maximum working pressure
5.7 Radiography of weld joints of Coil bundle: 100 %

Reference: General Drawing: OIL/ 2051/C : Detail of Indirect Heater Coil.

6.0 Coil End Connection:

6.1 Coil End : Flanged, 4"(101.6 mm NB) x 900 class RTJ, conforming to ANSI B16.5.
6.2 Companion Flange : The Indirect Heater shall be complete with bevel ended companion flanges conforming to ANSI B16.5, ring joint gasket and required Nos. of high tensile studs-nuts as per ASTM A193 Gr. B-7,ASTM A194 Gr. 2H respectively.

Reference Drawing no: OIL/2051/C

7.0 Fire Tube & Chimney:

Fire tube & Chimney shall conform all the requirements and dimensions of OIL Drawing no: OIL/2672/A & designed natural draft.
(a) There will be only 01 no of fire tube, 01 no of chimney and 01 no of flame arrestor box for burners. Flame arrester Box will have to accommodate 2(two) nos of main burner & 1(one no of Pilot Burner).

8.0 Fuel Scrubber:

8.1 Scrubber with high efficiency wire mesh type mist extractor of adequate size to cater Fuel &

Servo Gas Flow requirement shall be used for supplying liquid free fuel to the burner and servo gas to the pneumatic instruments.

8.2 The scrubber shall be equipped with
i) Pressure gauge with isolating valve.
ii) Drain connection with isolation valve.
iii) Sight glass/level gauges with gauge cocks
iv) Safety Relief valve- 1 Nos. (set range 5 to 33 kg/cm2)
8.3 Operating pressure of fuel scrubber: 30 kg/sq cm
8.4 Hydraulic Test Pressure of fuel scrubber: 1.5 times the maximum working pressure i.e. 45 kg/cm2 (640 psig)

9.0 Flame Arrested Burner & Accessories:
Standard flame arrestor, Aluminium box type suitable for offered Bath Type Indirect Heater of following specification:
a) Make: FLAMECO OR WENKO OR ACL
Reference Drawing no: OIL/PDNO/P&D/001/01 attached with the tender.
b)Fire tube shall be designed for following operating conditions
i) Furnace capacity: 3,000,000 BTU/Hr. (Net)
ii)Temperature of bath: 26 Deg.C to 90 Deg.C
iii)Natural gas Calorific value: 1000 BTU
iv)Burner Gas Pressure: 0.7-1.05 Kg/sq. cm (10-15 Psi)
(c) Within the single flame arrestor box, there will be 02 nos of main burner (i.e. 02 nos of mixture assemblies, 02 nos of burner nozzles, 02 nos of burner orifices & 02 nos of burner pipe nipples) and 1(one no of Pilot Burner) comprising of 1 nos of mixture, 1 no of orifice,1 no of pilot burner pipe and pilot nozzle as mentioned in clause 10.3.2 .
Kindly refer to item no 3 in drawing no OIL/PDNO/P&D/001/01 attached with the tender, for layout arrangement of 02 nos of burner assemblies within the single flame arrestor box for burners to be provided with the indirect heater.

Reference Drawing no: OIL/2672./A (Details of Fire Tube and Chimney)

d) Main Burner Assembly : Each flame arrestor should be complete with main burner assembly as below:

i) 101.6 mm (4")) , The burner mixture shall be of Make Eclipse model NS 160 (016 as per new catalogue number) or equivalent, low pressure compound type atmospheric injector - 02 Nos.
ii) 101.6 mm (4") Eclipes sticktite Model ST 216 - 84 or Equivalent burner nozzle: 02 Nos.
iii) 6.75 mm (17/64") Size burner orifice: 02 Nos.
iv) 101.6 mm (4") Burner Pipe nipple 36" Long: 02 Nos.
v) Couplings of different sizes as shown in drg. No. OIL/PDNO/P&D/001/01.
vi) Lifting Lug: 04 nos.
vii) Sight Glass: 01 No.
viii) Flame arrestor mounting frame shall be such as to match the bolting pattern of the fire tube of the offered heater and Drawing. No. OIL/PDNO/P&D/001/01

Reference Drawing no: . OIL/PDNO/P&D/001/01 (Details of flame Arrestor for Indirect Heater)

e) Pilot Burner Assembly: Each flame arrestor should be complete with pilot burner assembly

as detailed in 10.3.2 (Pilot Burner Assembly)

Reference Drawing no: . OIL/PDNO/P&D/024/01 (Details of pilot burner for Indirect Heater)

10.0 INSTRUMENTATION & CONTROL SYSTEM:

The following instrumentation & control system components shall be provided along with the Indirect Heater. However, the bidder has to include, but not limited to all the items as per the instruments specified below, such that the offered system is functionally and operationally complete in all respect.

The quantity mentioned in bracket is specified for each indirect bath water heater.

10.1 Instruments to be mounted on Shell

a) Temperature Gauge with Thermowell: Required for bath temperature (Qty. 01 No.)
i) Temperature Range: 0 to 150 Deg C
ii) Thermo well Connection: 1 Inch NPT
Iii) Insertion Length : 300 mm (12 Inch)
iv) Type: Bimetallic/ Mercury Filled
v) Sensing Element Connection: 1/2" NPT
vi) Material of Construction: All Stainless Steel
vii) Accuracy: ± 0.5 Deg C
viii) Make: Wika/ Odin / Waree / Ashcroft/ Icon /Forbes Marshall

b) Level Gauge: The Level gauge shall be of the following specification: (Qty: 1 No.)
i) Type: Reflex Type
ii) Connection Size: ½"
iii) Isolation Valves: Required (Needle Valve)
iv) Max.Working Pressure: 2 Kg/Sq.cm.
v) Test Pressure: 10 Kg/Sq.cm
vi) Max.Working Temperature: 100 Deg C.
vii) Make: Pratolina/Levcon/Daniel/Chemtrol/Norriseal

c) Water Filling Float Valve, 25 mm (1") NB: (Qty: 1 No.)
Inlet nozzle at water inlet line on top of the bath heater must be provided with a float operated industrial valve to avoid water over flow. The float shall be made of SS.

d) Liquid Level Switch: (Qty: 1 No.)
Water bath should be equipped with low water level shut down device with the following specification:
i) Type: Pneumatic
ii) Action: ON/OFF
iii) Output: 15-20 psig
iv) Supply: 20 psig
v) Type: Float less pneumatic switch with differential pilot (0-500 mm WC).
Make: Kimray / Fisher / Norriseal

e) Additonal Therowells : (Qty: 3 Nos.)

Three (03) nos additional thermo wells of 1" NPT of 300 mm length shall be fixed on the shell

for provision of insertion other instruments.

10.2 Instruments to be provided for mounting on Coil Inlet & Outlet:

a) Temperature Gauge with Thermowell: (Qty.: 4 Nos.)

i) Temperature Range : 0 to 100 Deg C
ii) Thermowell connection: ½" NPT
iii) Insertion Length: 3 Inch
iv) Type: Bimetallic/ Mercury Filled
v) Sensing Element Connection: 1/2"NPT
vi) Material of construction: All Stainless Steel
vii) Accuracy : ± 0.5 Deg C
Make : Wika / Odin / Waree / Ashcroft/ Icon/ Forbes Marshall

b) Pressure Gauges: Inlet pressure gauges in each of the preheat coils: (Qty.: 4 Nos.)
i) Dial Size: 150 mm (6") Minimum
ii) Range: 0 to 210 Kg/Sq. cm
iii) Pressure Element: SS Bourdon tube
iv) Material of construction: All SS
v) Accuracy: ± 1% of reading
vi) End Connection: 1/2" NPT
vii) Isolation Valves: Required (Needle Valve) as per gauge rating±
Make: Wika / Odin / Waree / Ashcroft/ Icon/Noshok/Mdanial/ Forbes Marshall

10.3 PNEUMATIC BURNER CONTROL SYSTEM:

10.3.1 Control Philosophy:
The Indirect Heaters shall be equipped with the pneumatic control system to carry out the following functions:
a) A Portable Hand-held High Energy battery operated remote Igniter shall be used to ignite the pilot burner remotely. All the systems for the remote igniter shall be in Flame-proof enclosure.
b) The main burner Manual Shut-off valve shall be opened only after establishment of the pilot burner flame, to prevent backfire.
c) Main flame shall be shut down in case of
• Pilot flame failure, through pneumatic No Flame Shut off Switch and No Flame Shut off Valve
• Low liquid level, through pneumatic Liquid Level Switch (LS) and Temperature Control Valve (TCV)
• High water temperature, through Temperature Switch (TS), Temperature Indicating Controller (TIC) and Temperature Control Valve (TCV).
d) Pilot Flame sensing shall be through thermocouple / Mercury filled sensor and signal shall be sent to pneumatic No Flame Shut Off Switch mounted on Pilot Burner gas supply line. In case of pilot flame failure, No Flame Shut Off Switch will stop gasl supply to pilot burner and will also send signal to close No Flame Shut Off Valve mounted on Main burner gas supply line, so that unnecessary raw gas shall not enter into the firetube.
e) Temperature Control of the water bath shall be through Temperature Indicating Controller (TIC) and Temperature Control valve (TCV)

10.3.2 Specification for Pilot Burner and Burner Control System

[A] Pilot Burner Assembly: (Qty: 1 set) a) Mixer i) Function: To maintain air-fuel ratio to the pilot burner ii) Outlet Connection: 1/2 inch LP Female Threaded Make & Model : INVALCO Model 100 mixer 45008576 or equivalent b) Orifice i) Function: To maintain air-fuel ratio for the pilot burner. ii) Feature : Suitable for Gas Mixer as above iii) Size : Suitable for Gas Mixer as above iv) Material of construction: Brass or SS v) Inlet Connection : ¼ Inch LP Female Threaded Make & Model : INVALC, Orifice #72,45002892 or equivalent c) Pilot Burner Pipe i) Function: To carry air-fuel mixture from Mixer to Pilot Burner Nozzle . ii) Size : 1/2" LP Threaded line pipe of suitable length . d) Pilot Burner Nozzle with Thermowell i) Function: To provide pilot flame in the Natural Gas fired indirect heater vessel ii) Material of construction: SS 310 or equivalent, suitable for high temperature applications iii) Inlet Connection : ½ Inch LP Female Threaded iv) Thermowell : Thermowell shall be welded on side of the nozzle for placing thermocouple/mercury bulb sensor for no flame shut off system Make & Model : INVALCO, RHSB Pilot burner, 48729563 or equivalent [B] Ignition Electrode Assembly : (Qty: 1 set) e) Ignition Electrode i) Function: To provide ignition for pilot flame in conjunction with portable Igniter ii) Features : The ignition electrode is to be mounted on the body of the pilot burner & fixed gap is to be kept between the electrode tip and the pilot burner nozzle for proper ignition Make & Model : INVALCO 49001179 or equivalent f) Insulator i) Function : To provide isolation between the ignition electrode and the body of the pilot burner i) Insulation: It should have necessary CERAMIC insulation. Make & Model INVALCO 46001175 or equivalent g) Insulator holder: i) Function : To hold the Insulator & Ignition Rod. ii) Feature : To be mounted on Holding Strap. Provision is to be kept for clamping & length adjustment of the electrode. iii) Make & Model : INVALCO 46002045 or equivalent. h) Holding Strap i) Function : To hold the insulation holder ii) Feature : To be mounted on ½ inch pilot burner pipe Make & Model : INVALCO 46001176 or equivalent i) High Voltage Connector and Pushing Connector (RAJAH FERRULE) i) Function : To provide connection between the high voltage ignition cable and ignition electrode ii) Feature : To be mounted on the ignition electrode Make & Model INVALCO ; Rajesh Ferrule SSN, 79113088 or equivalent j) High Voltage Connector Assembly (Female) with Pushing Connector (RAJAH FERRULE) i) Function : To provide connection between ignition cable and portable remote igniter ii) Feature : To be mounted on side of the Flame Arrestor body	

Make & Model : INVALCO 49011511 or equivalent
k) High Voltage Ignition Cable
i) Function : To provide connection between portable remote igniter and ignition electrode
ii) Features : High voltage handling & heat resistant
iii) Conductor: Fireproof, multistrand copper conductor
iv) Insulation Voltage: 11 KV (min)
v) Insulation: PTFE insulated with mica tapping & fibre glass top
vi) Heat resistant: upto 400 Deg C
vii) Length of cable : 5 meters
Make & Model : INVALCO, BELDEN 734805,32307010 or equivalent

[C] Portable Remote Igniter: (Qty: 1 No.)

a) Function : To ignite pilot flame of natural gas fired burners
b) Features: Portable hand-held, High energy, Flameproof and Battery operated
b) Battery: 12V DC, Rechargeable type
c) Enclosure: The Igniter should be housed in a flameproof box IP 65 (minimum)
d) Connector: High Voltage Connector (Male) to be mounted on the body of the igniter, matching with High Voltage Connector (Female) mounted on the Flame Arrestor Body, to provide connection between the Portable Remote Igniter and the Ignition Electrode
e) Earthing Clamp & Cable : Suitable Earthling Clamp & cable to connect Portable Remote Igniter with Flame Arrestor Body
f) Make & Model : ACL/ Combustex /GIE s.r.l/FMC INVALVO 81001654 or equivalent

[D] No Flame Shut Off Switch: (Qty: 1 No.)
i) Function: To provide positive Shut-off of gas supply to both Pilot Burner and Main Burner in the event of Pilot Flame out in gas fired Indirect heater.
ii) Feature : To be mounted on Pilot Burner gas supply line, no external power source required for operation, ensures that main burner remains closed during pilot ignition, latchable reset for pilot ignition.
iii) Pilot Flame Sensing element: Thermocouple/ Mercury Bulb
iv) Temperature limit of flame sensing element : 815 Deg C (1500 Deg F)
v) Length of Thermocouple Cable/ Mercury bulb Capillary Tube: 5 meters minimum
vi) Inlet Pressure: 10 to 20 psig.
vii) Output signal pressure : 3 to 15 psig
viii) Make: FMC Invalco CM7/ ACL/ Combustex /GIE s.r.l/Kimray

The items [A], [B], [C] & [D] mentioned above shall be preferably from the same vendor .

[E] No Flame Fuel Shut-off Valve: (Qty: 1 No.)
i) Function : To shut off gas supply to main burner in case of pilot flame failure
ii) Type : ON/OFF
iii) Actuator Type : Pneumatic Diaphragm Operated
iv) Actuator Spring : Adjustable
v) Diaphragm Material : Nylon reinforced Buna N/ Neoprene rubber
vi) Stem Material : 303 SS
vii) Packing Material : Standard O Rig, Buna N
viii) Plug Type : Soft plug for tight shut off
ix) Case Material : Cast Aluminium
x) Body Material : Ductile iron A 395

xi) Body Cover / Lower Diaphragm Case : Ductile iron A 395 xii) Gas Flow Rate: 40-130 SCM/Hr xiii) Input Operating Signal Pressure: 3 to 15 psig xiv) Inlet Pressure: 1 to 4 Kg/Sq.cm xv) Design Pressure: 10 Kg/Sq.cm xvi) Test Pressure: 15 Kg/Sq.cm xvii) End Connection : 1" NPT(F)/ Flanged Make : Invalco/ Fisher/ Samson/ Forbes Marshall/Combustex/Kimray/MIL/Brightech/Emerson/Murphy/Norreseal. [F] Indicating Type Tempearture Controller: (Qty: 1 No.) i) Type: Pneumatic Indicating PID Controller ii) Range : 0 to 150 Deg C iii) Sensor : Mercury Filled iv) Sensor Connection : 1/2" NPT v) Thermowell : Required vi) Thermowell Connection : 1" NPT vi) Insertion Length : 300 mm (12") vii) Input pressure: 10 to 30 psig viii) Output Signal pressure: 3 to 15 psig Make & Model: Fisher /Samson/ ABB/ OMC s.r.l- Italy/Norreseal [G] Temperature Control Valve: (Qty: 1 No.) i) End Connection : 1" NPT / Flanged ii) Type : Proportional iii) Actuator : Pneumatic Diaphragm Operated iv) Gas Flow Rate: 40-130 SCM/Hr v) Operating signal : 3 to 15 psig. vi) Inlet Pressure: 1 to 4 Kg/Sq.cm vii) Design Pressure: 10 Kg/Sq.cm viii) Test Pressure: 15 Kg/Sq.cm Make : Invalco/ Fisher /Samson/Forbes Marshall/Combustex / Kimray/MIL/Brightech/Emerson/Norreseal / OMC s.r.l- Italy [H] Main Supply Gas Regulator: (Qty: 1 No.) i) Type: Spring Loaded ii) Input pressure : 30 Kg/Sq.cm iii) Output pressure: 0 to 4 Kg/Sq. cm adjustable iv) Connection : 1" LP Female v) Gas Flow Rate: 40 to 130 SCM/Hr. Make : Fisher Model 67 CFR / Norgren / Maxitrol /Norriseal / OMC s.r.l. [I] Controller Supply Gas Regulator: (Qty: 1 No.) i) Type: Spring loaded ii) Input Pressure : 0 to 4 Kg/cm2 iii) Output Pressure: 0 to 20 psig adjustable iv) Connection : 1/4" LP Female Make : Fisher Model 67 CFR / Norgren / Maxitrol /Norriseal / OMC s.r.l. [J] Pilot Supply Gas Regulator no 1: (Qty: 1 No.) i) Type: Spring loaded	

ii) Input Pressure : 0 to 4 Kg/cm2
iii) Output Pressure: 0 to 20 psig adjustable
iv) Connection : 1/4" LP Female
Make : Fisher Model 67 CFR / Norgren / Maxitrol /Norriseal / OMC s.r.l.

[K] Pilot Supply Gas Regulator no 2: (Qty: 1 No.)
i) Type: Spring loaded
ii) Input Supply : 0 to 20 psig
iii) Output : 0 to 5 psig adjustable
iv) Connection : 1/4" LP Female
Make : Fisher Model 67 CFR / Norgren / Maxitrol /Norriseal / OMC s.r.l.

[L] Pressure gauge in main supply gas line before and after Regulator: (Qty: 2 Nos.)
i) Range : 0 to 40 Kg/Sq.cm (before Regulator), 0 to 7 Kg/Sq.cm (after Regulator)
ii) Dial Size : 4" Fluid filled type
iii) Connection Size: 1/4"
iv) Material of Construction: All Stainless Steel
Make : Wika/ Odin / Waree / Ashcroft/Noshok/ Mdanial/ Forbes Marshall

[M] Pressure gauge in controller gas supply line after the regualtor: (Qty:1 No.)
i) Range : 0 to 20 PSI
ii Dial Size : 50 mm (2")
iii) Connection Size: 1/4"
iv) Material of Construction: All Stainless Steel
Make : Wika/ Odin / Waree/ Ashcroft/Noshok/ Mdanial / Forbes Marshall

[N] Pressure gauge in pilot burner gas supply line after the regulator no 1: (Qty:1 No.)
i) Range : 0 to 20 PSI
ii Dial Size : 50 mm (2")
iii) Connection Size: 1/4"
iv) Material of Construction: All Stainless Steel
Make : Wika/ Odin / Waree/ Ashcroft/Noshok/ Mdanial / Forbes Marshall

[O] Strainer:
i) Sp. Gravity of Natural Gas: 0.6
ii) Flow rate of gas: 130 SCM/Hr.
iii) Mesh: 80 Mesh SS 304
iv) End Connection: 1" NPT
v) Working Pressure: 15 Kg/Sq.cm
vi) Test Pressure: 25 Kg/Sq.cm
Make: Zoloto/Leader/Sant or equivalent

[P] Mechanical Shut off Valves :

Manual Shut off valve of Globe valve type with LP Female Threaded End connection shall be provided as below

i) Main Supply Gas Manual Shut off Valve, 1" x 30 Ksc WP - 01 no
ii) Main Burner Manual Shut off Valve , 1" x 10 Ksc WP - 01 no
iii) Pilot Burner Manual Shut Off Valve, 1/4" x 10 Ksc WP - 01 no
Make: Swagelok/Parker/Hylok/Samson.

[Q] Isolation & Bypass Valve for Temperature Control Valve & No Flame Shut off Valve : Isolation & Bypass Valve of Globe valve type with LP Female Threaded End connection shall be provided as below i) Isolation Valve for Temperature Control Valve, 1" x 10 Ksc WP – 02 nos ii) By Pass Valve for Temperature Control Valve,1" x 10 Ksc WP– 01 no iii) Isolation Valve for No Flame Shut off Valve ,1" x 10 Ksc WP– 02 nos iv) By Pass Valve for No Flame Shut off Valve, 1" x 10 Ksc WP- 01no Make : Swagelok/Parker/Hylok/Samson [R] Tubes & Fittings: Tubes and Fittings shall be supplied of sufficient quantity to commission all the indirect heaters. Make : Swagelok, Parker, Hylok. [S] Unions: Unions of suitable size & pressure rating shall be provided on both sides' valves of all controllers, control valves, shut off valves and Pilot Guard, for ease of replacement/maintenance without disturbing other components of the system. 10.4 General notes for Instrument & Control System: a) All the pneumatic instruments shall be suitable for operating in natural gas as servo supply. b)Oil will provide necessary natural gas supply as servo upto battery limit ,however the required Servo Gas Pressure Regulators for all pneumatic instruments of make: Fisher Model 67 CFR / Norgren / Maxitrol /Norriseal / OMC s.r.l.- Italy shall be provided by the bidder. c) The Temperature Control Valve and the Fuel Shut-off Valve shall have isolation and bypass Valves . b) Operation and Maintenance manuals of all the instruments shall be provided along with the supply of materials. d) Step by step operating procedure of remote ignition and no flame shutdown system shall be separately inscribed in a non-erasable placard in the area where its operation would be carried out. e) Earthing Provision: The Indirect Heater shell will have Two (2) nos plates to be welded with saddle and provision of 3/4" studs with nuts (1 each at one of the legs and the vessel) for electrical earthing.	

SPECIAL TERMS AND CONDITIONS:

i) The bidder shall confirm that the goods, materials to be supplied shall be new, of recent make, of the best quality & workmanship. The bidder shall confirm that the materials shall be guaranteed for a period of 18 months from the date of despatch or 12 months from the date of receipt/assembling at Fields, whichever is earlier, against defects arising from faulty materials, workmanship or design. Defective goods / materials or parts notified by OIL to the Seller shall be replaced immediately by the Seller on FOR destination basis including payment of all taxes and duties at Seller's expense. This guarantee shall survive and hold good not-withstanding inspection, payment for and acceptance of the goods.

ii) Suppliers are to note that the drawing supplied by OIL is purely to guide the suppliers to make the final working drawings by them. The drawings should, in no case be treated as final fabrication drawings. Manufacturer's working drawing should be sent to OIL for approval along with Quality Assurance Plan (QAP)

prior to the commencement of manufacture/fabrication of the heaters. The Bidder shall confirm the same in their technical Bid

iii) The heaters should be shop constructed and tested as per API Std. 12K (latest revision).

iv) All the welding shall be done as per ASME section IX. Suppliers shall confirm that all coils and shell welding will be done by welders who are qualified under ASME boiler and pressure vessel code section- IX regulations.

v) Stress relieving of the pressure coils and fire tubes shall be required. Stress relieving operations are to be conducted in automatic temperature controlled furnace. The Bidder shall confirm the same in their technical Bid.

vi) Pressure coils and fire tubes should be hydraulically tested to the pressure specified in the drawings & technical specification. The Bidder shall confirm the same in their technical Bid.

vii) The coils should be tested 100% radiographically. The Bidder shall confirm the same in their technical Bid.

viii) X- Ray plate & report, radiographic test report should be produced to OIL's inspectors while inspecting and subsequently to be provided with supply of the materials.

ix) The following documents shall be forwarded with the technical bid:
a) Typical Process and Instrumentation (P&ID) diagrams
b) Typical General Arrangement Diagram (GAD) of the unit.
c) Sectional drawing showing the internals of the indirect heater.
d) Sectional drawing showing the internals of the Fuel Scrubber.
e) Drawings showing details of Remote Ignition System of Pilot Burner and Flame Failure shutdown system.
f) Circuit Diagram of Remote Ignition System with details of electronic components and battery.
h) Instrument data sheets along with name of manufacturer.
i) Make and technical specification of all the bought-out items along with technical literature, GAD etc.

x) Test Certificates: Manufacturer to provide following certificates along with the supply as per standard of manufacture & QAP. The Bidder shall confirm the same with the technical bid

a) Raw materials: Chemical & mechanical test certificate as per standard specified in technical specification.
b) Hydraulic test certificate, radiographic test certificate, certificate of Quality & Standard of welding.
c) Certificate of visual inspection & measurement of dimensions.
d) Process and Instrumentation diagrams.

xi) Third Party Inspection: The materials shall be offered for third party inspection for the following scope-

a) Inspection of raw materials.
b) Inspection of radiography of welded joints.
c) Inspection of Hydraulic testing of Process/Pressure coils.
d) Inspection of Hydraulic testing of Fire Tube.
e) Inspection of Water fill test of the shell.
f) Inspection of bought-out items.
g) Inspection of certificates in respect of raw materials, bought-out items, radiography etc.
h) Inspection of Hydraulic testing of Fuel Scrubber.

xii) The Third Party Inspector must be OIL's authorized / recognized inspecting agencies i.e. M/s Lloyds or M/s Bureau Veritas or RITES or M/s IRS or M/s DNV or Tuboscope Vetco.

xiii) Pre-dispatch Inspection by OIL

OIL's representative shall inspect the materials prior to dispatch at vendor's works at OIL's cost. OIL's representative shall review TPI reports, witness hydraulic testing of coils and remote ignition system with Hand-held High Energy Igniter. Three weeks prior notice to be given to OIL for pre–dispatch inspection.

xiv) Painting and Insulation:

a) External surface shall be cleaned, by sand blasting to Sa2 -1/2 grade followed by 2 coats of heat resistant primer followed by high temperature aluminium paint.

b) Inner surface will be cleaned by wire brushing and will be provided with 2 coats of heat resistant primer. Each coat will have min DFT of 35 micron.

c) The heater body shall be thermally insulated by rock wool (Density 120) and aluminum sheet (20 gauges) covered with tight sealing, to prevent heat loss and external insertion of water and foreign elements.

xv) Marking: OIL's logo, Purchase order No. and manufacturers name shall be die stamped/weld written in the shell of the heater.

xvi) Joint Inspection on arrival of Materials:

I. Commissioning of the equipments will be carried out by OIL at fields. However after Receipt of Equipments, the supplier will send their representative/ Service Engineer for the assembling of the components, mountings & Instrumentation items on each unit before deployment for field operation. On receipt of the equipments by OIL, the supplier will be intimated to depute their representative/Service engineer. The supplier shall depute their representative/ service Engineer within 20 days after receipt of official intimation. The Bidder shall confirm the same in their technical Bid.

II. The representative/Service Engineer shall have to provide practical demonstration to operating personnel of OIL regarding safe operating procedure & maintenance of equipments & Instrumentation items.

xvii) The Bidder shall filled up and submit Technical specification on the check list(annexure-I), Tender notes check list (annexure-II) , BRC/BEC check list (Annexure-III), Instrumentation data sheet Check List(Annexure-III) along with technical bid as per attached format. All format shall be filled up with detailed information/specification. The use of words in check lists like complied or yes or considered is not suffice the requirement of check list. The bidder shall categorically provide the information as per requirements of check lists.

Note:

Bidders should submit their bids (preferably in tabular form) explicitly mentioning compliance / non compliance to all the NIT terms and conditions of NIT.

ANNEXURE- DDD

INTEGRITY PACT

Between

Oil India Limited (OIL) hereinafter referred to as "The Principal"

And

(Name of the bidder).....hereinafter referred to as "The Bidder/Contractor"

Preamble:

The Principal intends to award, under laid down organizational procedures, contract/s for **SDI9755P19** The Principal values full compliance with all relevant laws and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder/s and Contractor/s.

In order to achieve these goals, the Principal cooperates with the renowned international Non-Governmental Organization "Transparency International" (TI). Following TI's national and international experience, the Principal will appoint an external independent Monitor who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section: 1 -Commitments of the Principal

(1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:

1. No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for him/herself or third person, any material or immaterial benefit which he/she is not legally entitled to.

2. The Principal will, during the tender process treat all Bidders with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidders the same information and will not provide to any Bidder confidential/additional information through which the Bidder could obtain an advantage in relation to the tender process or the contract execution.

3. The Principal will exclude from the process all known prejudiced persons.

(2) If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the relevant Anti-Corruption Laws of India, or if there be a Page 2 of 6 substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions.

Section: 2 -Commitments of the Bidder/Contractor

(1) The Bidder/Contractor commits itself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.

1. The Bidder/Contractor will not, directly or through any other person or firm, offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or immaterial benefit which h e/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

2. The Bidder/Contractor will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. 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.

3. The Bidder/Contractor will not commit any offence under the relevant Anticorruption Laws of India; further the Bidder/Contractor will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

4. The Bidder/Contractor will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

(2) The Bidder/Contractor will not instigate third persons to commit offences outlined above or be an accessory to such offences.

(3) The Bidder/Contractor signing Integrity Pact shall not approach the Courts while representing the matters to IEMs and he/she will await their decision in the matter.

Section 3 -Disqualification from tender process and exclusion from future Contracts

If the Bidder, before contract award has committed a transgression through a violation of Section 2 or in any other form such as to put his reliability or risibility as Bidder into question, the Principal is entitled to disqualify the Bidder from the tender process or to terminate the contract, if already signed, for such reason.

1. If the Bidder/Contractor has committed a transgression through a violation of Section 2 such as to put his reliability or credibility into question, the Principal is entitled also to exclude the Bidder/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the circumstances of the case, in particular the number of transgressions, the position of the transgressions within the company hierarchy of the Bidder and the amount of the damage. The exclusion will be imposed for a minimum of 6 months and maximum of 3 years.

2. The Bidder accepts and undertakes to respect and uphold the Principal's Absolute right to resort to and impose such exclusion and further accepts and undertakes not to challenge or question such exclusion on any ground, including the lack of any hearing before the decision to resort to such exclusion is taken. This undertaking is given freely and after obtaining independent legal advice.

3. If the Bidder/Contractor can prove that he has restored/recouped the Damage caused by him and has installed a suitable corruption prevention system, the Principal may revoke the exclusion prematurely.

4. A transgression is considered to have occurred if in light of available evidence no reasonable doubt is possible.

5. Integrity Pact, in respect of a particular contract, shall be operative from the date Integrity Pact is signed by both the parties till the final completion of the contract **or as mentioned in Section 9- Pact Duration whichever is later**. Any violation of the same would entail disqualification of the bidders and exclusion from future business dealings

ANNEXURE- DDD

Section 4 -Compensation for Damages

1. If the Principal has disqualified the Bidder from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover from the Bidder liquidated damages equivalent to Earnest Money Deposit / Bid Security.

(2) If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to Section 3, the principal shall be entitled to demand and recover from the Contractor liquidated damages equivalent to Security Deposit / Performance Bank Guarantee.

3. The bidder agrees and undertakes to pay the said amounts without protest or demur subject only to condition that if the Bidder/Contractor can prove and establish that the exclusion of the Bidder from the tender process or the termination of the contract after the contract award has caused no damage or less damage than the amount or the liquidated damages, the Bidder/Contractor shall compensate the Principal only to the extent of the damage in the amount proved.

Section 5 -Previous transgression

1. The Bidder declares that no previous transgression occurred in the last 3 years with any other Company in any country conforming to the TI approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.

2. If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

Section: 6 -Equal treatment of all Bidders/Contractor/Subcontractors

1. The Principal will enter into Pacts on identical terms with all bidders and contractors.

2. The Bidder / Contractor undertake(s) to procure from all subcontractors a commitment in conformity with this Integrity Pact. The Bidder/Contractor shall be responsible for any violation(s) of the provisions laid down in this agreement/Pact by any of its sub-contractors/sub-vendors.

3. The Principal will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

ANNEXURE- DDD

Section: 7 -Criminal charges against violating Bidders/Contractors/ Subcontractors

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor, which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the Vigilance Office.

Section: 8 -External Independent Monitor/Monitors

1. The Principal appoints competent and credible external independent Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

2. The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the Chairperson of the Board of the Principal.

3. The Contractor accepts that the Monitor has the right to access without restriction to all Project documentation of the Principal including that provided by the Contractor. The Contractor will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor is under contractual obligation to treat the information and documents of the Bidder/Contractor/Subcontractor with confidentiality.

4. The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.

5. As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or heal the violation, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action. However, the Independent External Monitor shall give an opportunity to the bidder / contractor to present its case before making its recommendations to the Principal.

6. The Monitor will submit a written report to the Chairperson of the Board of the Principal within 8 to 10 weeks from the date of reference or intimation to

him by the 'Principal' and, should the occasion arise, submit proposals for correcting problematic situations.

7. If the Monitor has reported to the Chairperson of the Board a Substantiated suspicion of an offence under relevant Anti-Corruption Laws of India, and the Chairperson has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.

8. The word 'Monitor' would include both singular and plural.

Section:9 -Pact Duration

This Pact begins when both parties have legally signed it. It expires for the Contractor 12 months after the last payment under the respective contract, and for all other Bidders 6 months after the contract has been awarded.
If any claim is made/ lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/determined by Chairperson of the Principal.

Section:10 -Other provisions

1. This agreement is subject to Indian Law. Place of performance and jurisdiction is the Registered Office of the Principal, i.e. New Delhi. The Arbitration clause provided in the main tender document / contract shall not be applicable for any issue / dispute arising under Integrity Pact.

2. Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.

3. If the Contractor is a partnership or a consortium, this agreement must be, signed by all partners or consortium members.

4. Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intensions.

RANJAN BARMAN
CHIEF MANAGER MATERIALS (IP)

……	**……**
For the Principal	**For the Bidder/Contractor**
	Witness 1: ……
	Witness 2: ……

Place. DULIAJAN
Date. 16.11.2018

TENDER NO. **SDI9755P19 DT: 15.11.2018**

Annexure -I

Technical specification check list for evaluation

NIT clause no	Technical specification as per NIT	Technical Offer by the Bidder. . Note: * Bidder shall categorically state the specification, information & design parameter of the offered Equipments against corresponding NIT clause	Comments(if any)	
			Bidder Information regarding reference file no & page no in the technical bid	Scrutinizer Remarks
General	**SUPPLY OF INDIRECT WATER BATH HEATER PACKAGE FOR PROCESSING CRUDE OIL:** **Double Coiled Bath Type Field Indirect Heater of heating capacity 0.88 x** 10^6 **watts (3.0 MM BTU/HR.) for heating 10,000 BBLS (1800 KLS) per day of crude oil associated with sweet natural gas at 105.46 kg/cm2 pressure, generally as per OIL drawings - OIL /2670/A, OIL/5303, OIL/2672./A, OIL/ 2051/C , OIL/PDNO/P&D/001/01 .**			
1.0	**1.0 SERVICE CONDITION** 1. **Fluid to be handled : Crude oil mixed with sweet natural gas & formation water** 2. **Flow Rate : 10,000 BBLS (1800 KLS) per day** 3. **Heating capacity : 0.88 x 10^6 watts (3.0 MM BTU/HR.)** 4. **Coil operating pressure : 105.46 kg/cm2 (1500 psig)** 5. **Bath medium : Water** 6. **Shell Operating Pressure : Water Fill-up** 7. **Water bath temp : 90 Deg. C**			

NIT clause no	Technical specification as per NIT	Technical Offer by the Bidder. . Note: * Bidder shall categorically state the specification, information & design parameter of the offered Equipments against corresponding NIT clause	Comments(if any)	
			Bidder Information regarding reference file no & page no in the technical bid	Scrutinizer Remarks
2.0	**2.0 DRAWINGS : The indirect Heater shall be manufactured as per following OIL drawings** **1. OIL /2670/A : Bath type IH General Arrangement** **2. OIL/5303 : Details of Shell Sub Assembly** **3. OIL/2672./A : Details of Fire Tube and Chimney** **4. OIL/ 2051/C : Detail of Indirect Heater Coil.** **5. OIL/PDNO/P&D/001/01: Flame Arrester** **6. OIL/PDNO/P&D/024/A(1): Indirect Heater Pilot Burner** **7. OIL/PDNO/P&D/024/A(2) : P &ID diagram, Burner control**			
3.0	**3.0 APPLICABLE STANDARDS FOR MATERIAL OF CONSTRUCTION & FABRICATION** **1. Fire Tube :Seamless Carbon Steel Pipe as per ASTM A106 Gr. B Standard** **2. Coil Pipe & return bend :Seamless Carbon Steel Pipe as per ASTM A106 Gr. B/ API 5L Gr. B,** **3. Shell Body :As per IS2062 Gr. B Standard** **4. Coil Flange :As per ASTM 105** **5. Fastners :As per IS 1364 / ASTM A 307 Standard (For non pressure parts)** **6. Studs & Nuts :As per ASTM A193 Gr. B7 & ASTM A194 Gr. 2H Standard** **7. Fuel Gas piping system : As per ASME B31.3 Standard** **8. Welding :As per ASME Section IX.** **9. Design, fabrication & Shop testing : As per API Spec 12K** **10. Shell nameplate : As Per API 12K**			

NIT clause no	Technical specification as per NIT	Technical Offer by the Bidder. . Note: * Bidder shall categorically state the specification, information & design parameter of the offered Equipments against corresponding NIT clause	Comments(if any)	
			Bidder Information regarding reference file no & page no in the technical bid	Scrutinizer Remarks
4.0	**4.0 SHELL** **Shell will conform to all the requirements and dimensions of OIL Drawing no: *OIL/5303* and must have adequate nozzles for inlet, outlet of coils, fire tube and mounting, various equipment & instruments for burner, drain valves etc.** **The Indirect Heater shell will have suitable lifting lugs attached for lifting and placing the same at site.** **The Indirect Heater shell will have Two (2) nos plates to be welded with. 3/4" studs with nuts (1 each at one of the legs and the vessel) for electrical earthing.** ***Reference Drawing no: OIL/5303(Details of Shell Sub Assembly)***			
5.0	**5.0 Coils (Seamless):** **5.1 No. of Coil : 2 (two) sets** **5.2 No. of Pass: 8 (Eight) passes for each coil.** **5.3: Coil size: 4"(101.6mm) NB x 0.237" (6.02mm) wall thickness (Schedule 40/STD) for straight pipes and 0.337" (8.55mm) wall thickness (Schedule 80/XS) for return bends.** **5.4 Coil Material : Seamless pipe as per API-5L Gr. B, / ASTM A106 Gr. B .** **5.5 Coil Operating Pressure: Max: 105.46 kg/cm2 (1500 psig)** **5.6 Coil Hydraulic Test Pressure: 1.5 times the maximum working pressure** **5.7 Radiography of weld joints of Coil bundle: 100 %** ***Reference: General Drawing: OIL/ 2051/C : Detail of Indirect Heater Coil.***			

NIT clause no	Technical specification as per NIT	Technical Offer by the Bidder. . Note: * Bidder shall categorically state the specification, information & design parameter of the offered Equipments against corresponding NIT clause	Comments(if any)	
			Bidder Information regarding reference file no & page no in the technical bid	Scrutinizer Remarks
6.0	**6.0 Coil End Connection:** **6.1 Coil End : Flanged, 4"(101.6 mm) NB x 900 class RTJ, conforming to ANSI B16.5.** **6.2 Companion Flange : The Indirect Heater shall be complete with bevel ended companion flanges conforming to ANSI B16.5, ring joint gasket and required Nos. of high tensile studs-nuts as per ASTM A193 Gr. B-7,ASTM A194 Gr. 2H respectively.** ***Reference Drawing no: OIL/2051/C***			
7.0	**7.0 Fire Tube & Chimney:** **Fire tube & Chimney shall conform all the requirements and dimensions of OIL Drawing no: OIL/2672/A & designed natural draft.** **(a) There will be only 01 no of fire tube, 01 no of chimney and 01 no of flame arrestor box for burners. Flame arrester Box will have to accommodate 2(two) nos of main burner & 1(one no of Pilot Burner**			
8.0	**8.0 Fuel Scrubber:** **8.1 Scrubber with high efficiency wire mesh type mist extractor of adequate size to cater Fuel & Servo Gas Flow requirement shall be used for supplying liquid free fuel to the burner and servo gas to the pneumatic instruments.** **8.2 The scrubber shall be equipped with** **i) Pressure gauge with isolating valve.** **ii) Drain connection with isolation valve.** **iii) Sight glass/level gauges with gauge cocks** **iv) Safety Relief valve- 1 Nos. (set range 5 to 33 kg/cm2)** **8.3 Operating pressure of fuel scrubber: 30 kg/sq cm** **8.4 Hydraulic Test Pressure of fuel scrubber: 1.5 times the maximum working pressure i.e. 45 kg/cm2 (640 psig)**			

NIT clause no	Technical specification as per NIT	Technical Offer by the Bidder. . Note: * Bidder shall categorically state the specification, information & design parameter of the offered Equipments against corresponding NIT clause	Comments(if any)	
			Bidder Information regarding reference file no & page no in the technical bid	Scrutinizer Remarks
9.0(a)	**9.0 Flame Arrested Burner & Accessories:** **Standard flame arrestor, Aluminium box type suitable for offered Bath Type Indirect Heater of following specification:** **a) Make: FLAMECO OR WENKO OR ACL** **Reference Drawing no: OIL/PDNO/P&D/001/01 attached with the tender.** **b)Fire tube : "U" type, OD, ID & other dimensions of fire tube as detailed below** **i) Furnace capacity: 3,000,000 BTU/Hr. (Net)** **ii)Temperature of bath: 26 Deg.C to 90 Deg.C** **iii)Natural gas Calorific value: 1000 BTU** **iv)Burner Gas Pressure: 0.7-1.05 Kg/sq. cm (10-15 Psi)** **© Within the single flame arrestor box, there will be 02 nos of main burner (i.e. 02 nos of mixture assemblies, 02 nos of burner nozzles, 02 nos of burner orifices & 02 nos of burner pipe nipples) and 1(one no of Pilot Burner) comprising of 1 nos of mixture, 1 no of orifice,1 no of pilot burner pipe and pilot nozzle as mentioned in clause 10.3.2 .** **Kindly refer to item no 3 in drawing no OIL/PDNO/P&D/001/01 attached with the tender, for layout arrangement of 02 nos of burner assemblies within the single flame arrestor box for burners to be provided with the indirect heater**. ***Reference Drawing no: OIL/2672./A*** ***(Details of Fire Tube and Chimney***			
9.0(b)	**b)Fire tube : "U" type, OD, ID & other dimensions of fire tube as detailed below** **i) Furnace capacity: 3,000,000 BTU/Hr. (Net)** **ii)Temperature of bath: 26 Deg.C to 90 Deg.C** **iii)Natural gas Calorific value: 1000 BTU** **iv)Burner Gas Pressure: 0.7-1.05 Kg/sq. cm (10-15 Psi)**			

NIT clause no	Technical specification as per NIT	Technical Offer by the Bidder. . Note: * Bidder shall categorically state the specification, information & design parameter of the offered Equipments against corresponding NIT clause	Comments(if any)	
			Bidder Information regarding reference file no & page no in the technical bid	Scrutinizer Remarks
9.0(c)	**(c) Within the single flame arrestor box, there will be 02 nos of mixture assemblies, 02 nos of burner nozzles, 02 nos of burner orifices & 02 nos of burner pipe nipples. Kindly refer to item no 3 in drawing no OIL/PDNO/P&D/001/01 attached with the tender, for layout arrangement of 02 nos of burner assemblies within the single flame arrestor box for burners to be provided with the indirect heater**.			
9.0(d)	**d) Main Burner Assembly : Each flame arrestor should be complete with main burner assembly as below:** **i) 101.6 mm (4")) , The burner mixture shall be of Make Eclipse model NS 160 (016 as per new catalogue number) or equivalent, low pressure compound type atmospheric injector - 02 Nos.** **ii) 101.6 mm (4") Eclipes sticktite Model ST 216 - 84 or Equivalent burner nozzle: 02 Nos.** **iii) 6.75 mm (17/64") Size burner orifice: 02 Nos.** **iv) 101.6 mm (4") Burner Pipe nipple 36" Long: 02 Nos.** **v) Couplings of different sizes as shown in drg. No. OIL/PDNO/P&D/001/01.** **vi) Lifting Lug: 04 nos.** **vii) Sight Glass: 01 No.** **viii) Flame arrestor mounting frame shall be such as to match the bolting pattern of the fire tube of the offered heater and Drawing. No. OIL/PDNO/P&D/001/01** ***Reference Drawing no: . OIL/PDNO/P&D/001/01 (Details of flame Arrestor for Indirect Heater)***			

NIT clause no	Technical specification as per NIT	Technical Offer by the Bidder. . Note: * Bidder shall categorically state the specification, information & design parameter of the offered Equipments against corresponding NIT clause	Comments(if any)	
			Bidder Information regarding reference file no & page no in the technical bid	Scrutinizer Remarks
9.0(e)	**e) Pilot Burner Assembly: Each flame arrestor should be complete with pilot burner assembly as detailed in 10.3.2 (Pilot Burner Assembly)** ***Reference Drawing no: . OIL/PDNO/P&D/024/01 (Details of pilot burner for Indirect Heater)***			
10.1(a)	**10.1 Instruments to be mounted on Shell** **a) Temperature Gauge with Thermowell: Required for bath temperature (Qty. 01 No.)** **i) Temperature Range: 0 to 150 Deg C** **ii) Thermo well Connection: 1 Inch NPT** **Iii) Insertion Length : 300 mm (12 Inch)** **iv) Type: Bimetallic/ Mercury Filled** **v) Sensing Element Connection: 1/2" NPT** **vi) Material of Construction: All Stainless Steel** **vii) Accuracy: ± 0.5 Deg C** **viii) Make: Wika/ Odin / Waree / Ashcroft/ Icon /Forbes Marshall**			
10.1(b)	**b) Level Gauge: The Level gauge shall be of the following specification: (Qty: 1 No.)** **i) Type: Reflex Type** **ii) Connection Size: ½"** **iii) Isolation Valves: Required (Needle Valve)** **iv) Max.Working Pressure: 2 Kg/Sq.cm.** **v) Test Pressure: 10 Kg/Sq.cm** **vi) Max.Working Temperature: 100 Deg** **vii) Make: Pratolina/Levcon/ Daniel/ Chemtrol/ Norriseal**			
10.1(c)	**c) Water Filling Float Valve, 25 mm (1") NB: (Qty: 1 No.)** **Inlet nozzle at water inlet line on top of the bath heater must be provided with a float operated industrial valve to avoid water over flow. The float shall be made of SS**			

NIT clause no	Technical specification as per NIT	Technical Offer by the Bidder. . Note: * Bidder shall categorically state the specification, information & design parameter of the offered Equipments against corresponding NIT clause	Comments(if any)	
			Bidder Information regarding reference file no & page no in the technical bid	Scrutinizer Remarks
10.1(d)	**d) Liquid Level Switch: (Qty: 1 No.)** **Water bath should be equipped with low water level shut down device with the following specification:** **i) Type: Pneumatic** **ii) Action: ON/OFF** **iii) Output: 15-20 psig** **iv) Supply: 20 psig** **v) Type: Float less pneumatic switch with differential pilot (0-500 mm WC).** **Make: Kimray / Fisher / Norriseal**			
10.1(e)	**e) Additonal Therowells : (Qty: 3 Nos.)** **Three (03) nos additional thermo wells of 1" NPT of 300 mm length shall be fixed on the shell for provision of insertion other instruments.**			
10.2(a)	**a) Temperature Gauge with Thermowell: (Qty.: 4 Nos.)** **i) Temperature Range : 0 to 100 Deg C** **ii) Thermowell connection: ½" NPT** **iii) Insertion Length: 3 Inch** **iv) Type: Bimetallic/ Mercury Filled** **v) Sensing Element Connection: 1/2"NPT** **vi) Material of construction: All Stainless Steel** **vii) Accuracy : ± 0.5 Deg C** **Make : Wika / Odin / Waree / Ashcroft/ Icon/ Forbes Marshall**			
10.2(b)	**a) Pressure Gauges: Inlet pressure gauges in each of the preheat coils: (Qty.: 4 Nos.)** **i) Dial Size: 150 mm (6") Minimum** **ii) Range: 0 to 210 Kg/Sq. cm** **iii) Pressure Element: SS Bourdon tube** **iv) Material of construction: All SS** **v) Accuracy: ± 1% of reading** **vi) End Connection: 1/2" NPT** **vii) Isolation Valves: Required (Needle Valve) as per gauge rating±** **Make: Wika / Odin / Waree / Ashcroft/**			

NIT clause no	Technical specification as per NIT	Technical Offer by the Bidder. . Note: * Bidder shall categorically state the specification, information & design parameter of the offered Equipments against corresponding NIT clause	Comments(if any)	
			Bidder Information regarding reference file no & page no in the technical bid	Scrutinizer Remarks
	Icon/Noshok/Mdanial/ Forbes Marshal			
10.3	**10.3 PNEUMATIC BURNER CONTROL SYSTEM:** **10.3.1 Control Philosophy:** **The Indirect Heaters shall be equipped with the pneumatic control system to carry out the following functions:** **a) A Portable Hand-held High Energy battery operated remote Igniter shall be used to ignite the pilot burner remotely. All the systems for the remote igniter shall be in Flame-proof enclosure.** **b) The main burner Manual Shut-off valve shall be opened only after establishment of the pilot burner flame, to prevent backfire.** **c) Main flame shall be shut down in case of** • **Pilot flame failure, through pneumatic No Flame Shut off Switch and No Flame Shut off Valve** • **Low liquid level, through pneumatic Liquid Level Switch (LS) and Temperature Control Valve (TCV)** • **High water temperature, through Temperature Switch (TS), Temperature Indicating Controller (TIC) and Temperature Control Valve (TCV).** **d) Pilot Flame sensing shall be through thermocouple / Mercury filled sensor and signal shall be sent to pneumatic No Flame Shut Off Switch mounted on Pilot Burner gas supply line. In case of pilot flame failure, No Flame Shut Off Switch will stop gasl supply to pilot burner and will also send signal to close No Flame Shut Off Valve mounted on Main burner gas supply line, so that unnecessary raw gas shall not enter into the firetube.** **Temperature Control of the water bath shall be**			

NIT clause no	Technical specification as per NIT	Technical Offer by the Bidder. . Note: * Bidder shall categorically state the specification, information & design parameter of the offered Equipments against corresponding NIT clause	Comments(if any)	
			Bidder Information regarding reference file no & page no in the technical bid	Scrutinizer Remarks
	through Temperature Indicating Controller (TIC) and Temperature Control valve (TCV)			
10.3.2 [A](a)	**[A] Pilot Burner Assembly: (Qty: 1 set)** **a) Mixer** i) **Function: To maintain air-fuel ratio to the pilot burner** ii) **Outlet Connection: 1/2 inch LP Female Threaded Make & Model : INVALCO Model 100 mixer 45008576 or equivalent**			
10.3.2 [A](b)	**b) Orifice** i) **Function: To maintain air-fuel ratio for the pilot burner.** ii) **Feature : Suitable for Gas Mixer as above** iii) **Size : Suitable for Gas Mixer as above** iv) **Material of construction: Brass or SS** v) **Inlet Connection : ¼ Inch LP Female Threaded Make & Model : INVALC, Orifice #72,45002892 or equivalent**			
10.3.2 [A](c)	**c) Pilot Burner Pipe** i) **Function: To carry air-fuel mixture from Mixer to Pilot Burner Nozzle .** ii) **Size : 1/2" LP Threaded line pipe of suitable length .**			
10.3.2 [A](d)	**d) Pilot Burner Nozzle with Thermowell** i) **Function: To provide pilot flame in the Natural Gas fired indirect heater vessel** ii) **Material of construction: SS 310 or equivalent, suitable for high temperature applications** iii) **Inlet Connection : ½ Inch LP Female Threaded** iv) **Thermowell : Thermowell shall be welded on side of the nozzle for placing thermocouple/mercury bulb sensor for no flame shut off system Make & Model : INVALCO, RHSB Pilot burner, 48729563 or equivalent**			

NIT clause no	Technical specification as per NIT	Technical Offer by the Bidder. . Note: * Bidder shall categorically state the specification, information & design parameter of the offered Equipments against corresponding NIT clause	Comments(if any)	
			Bidder Information regarding reference file no & page no in the technical bid	Scrutinizer Remarks
10.3.2 [B](e)	**e) Ignition Electrode** **i) Function: To provide ignition for pilot flame in conjunction with portable Igniter** **ii) Features : The ignition electrode is to be mounted on the body of the pilot burner & fixed gap is to be kept between the electrode tip and the pilot burner nozzle for proper ignition** **Make & Model : INVALCO 49001179 or equivalent**			
10.3.2 [B](f)	**f) Insulator** **i) Function : To provide isolation between the ignition electrode and the body of the pilot burner** **i) Insulation: It should have necessary CERAMIC insulation.** **Make & Model INVALCO 46001175 or equivalent**			
10.3.2 [B](g)	**g) Insulator holder:** **i) Function : To hold the Insulator & Ignition Rod.** **ii) Feature : To be mounted on Holding Strap. Provision is to be kept for clamping & length adjustment of the electrode.** **iii) Make & Model : INVALCO 46002045 or equivalent.**			
10.3.2 [B](h)	**h) Holding Strap** **i) Function : To hold the insulation holder** **ii) Feature : To be mounted on ½ inch pilot burner pipe** **Make & Model : INVALCO 46001176 or equivalent**			
10.3.2 [B](i)	**i) High Voltage Connector and Pushing Connector (RAJAH FERRULE)** **i) Function : To provide connection between the high voltage ignition cable and ignition electrode** **ii) Feature : To be mounted on the ignition electrode**			

NIT clause no	Technical specification as per NIT	Technical Offer by the Bidder. . Note: * Bidder shall categorically state the specification, information & design parameter of the offered Equipments against corresponding NIT clause	Comments(if any)	
			Bidder Information regarding reference file no & page no in the technical bid	Scrutinizer Remarks
	Make & Model INVALCO ; Rajesh Ferrule SSN, 79113088 or equivalent			
10.3.2 [B](j)	**j) High Voltage Connector Assembly (Female) with Pushing Connector (RAJAH FERRULE)** i) **Function : To provide connection between ignition cable and portable remote igniter** ii) **Feature : To be mounted on side of the Flame Arrestor body** **Make & Model : INVALCO 49011511 or equivalent**			
10.3.2 [B](k)	**k) High Voltage Ignition Cable** i) **Function : To provide connection between portable remote igniter and ignition electrode** ii) **Features : High voltage handling & heat resistant** iii) **Conductor: Fireproof, multistrand copper conductor** iv) **Insulation Voltage: 11 KV (min)** v) **Insulation: PTFE insulated with mica tapping & fibre glass top** vi) **Heat resistant: upto 400 Deg C** vii) **Length of cable : 5 meters** **Make & Model : INVALCO, BELDEN 734805,32307010 or equivalent**			
10.3.2 [C]	**[C] Portable Remote Igniter: (Qty: 1 No.)** **a) Function : To ignite pilot flame of natural gas fired burners** **b) Features: Portable hand-held, High energy, Flameproof and Battery operated** **b) Battery: 12V DC, Rechargeable type** **c) Enclosure: The Igniter should be housed in a flameproof box IP 65 (minimum)** **d) Connector: High Voltage Connector (Male) to be mounted on the body of the**			

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			Bidder Information regarding reference file no & page no in the technical bid	Scrutinizer Remarks
	igniter, matching with High Voltage Connector (Female) mounted on the Flame Arrestor Body, to provide connection between the Portable Remote Igniter and the Ignition Electrode e) Earthing Clamp & Cable : Suitable Earthling Clamp & cable to connect Portable Remote Igniter with Flame Arrestor Body f) Make & Model : ACL/ Combustex /GIE s.r.l/FMC INVALVO 81001654 or equivalent			
10.3.2 [D]	[D] No Flame Shut Off Switch: (Qty: 1 No.) i) Function: To provide positive Shut-off of gas supply to both Pilot Burner and Main Burner in the event of Pilot Flame out in gas fired Indirect heater. ii) Feature : To be mounted on Pilot Burner gas supply line, no external power source required for operation, ensures that main burner remains closed during pilot ignition, latchable reset for pilot ignition. iii) Pilot Flame Sensing element: Thermocouple/ Mercury Bulb iv) Temperature limit of flame sensing element : 815 Deg C (1500 Deg F) v) Length of Thermocouple Cable/ Mercury bulb Capillary Tube: 5 meters minimum vi) Inlet Pressure: 10 to 20 psig. vii) Output signal pressure : 3 to 15 psig viii) Make: FMC Invalco CM7/ ACL/ Combustex /GIE s.r.l/Kimray			
Note	The items [A], [B], [C] & [D] mentioned above shall be preferably from the same vendor.			
10.3.2[E]	[E] No Flame Fuel Shut-off Valve: (Qty: 1 No.) i. Function : To shut off gas supply to main burner in case of pilot flame failure ii. Type : ON/OFF iii. Actuator Type : Pneumatic Diaphragm Operated iv. Actuator Spring : Adjustable			

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			Bidder Information regarding reference file no & page no in the technical bid	Scrutinizer Remarks
	v. Diaphragm Material : Nylon reinforced Buna N/ Neoprene rubber **vi. Stem Material : 303 SS** **vii. Packing Material : Standard O Rig, Buna N** **viii. Plug Type : Soft plug for tight shut off** **ix. Case Material : Cast Aluminium** **x. Body Material : Ductile iron A 395** **xi. Body Cover / Lower Diaphragm Case : Ductile iron A 395** **xii. Gas Flow Rate: 40-130 SCM/Hr** **xiii. Input Operating Signal Pressure: 3 to 15 psig** **xiv. Inlet Pressure: 1 to 4 Kg/Sq.cm** **xv. Design Pressure: 10 Kg/Sq.cm** **xvi. Test Pressure: 15 Kg/Sq.cm** **xvii. End Connection : 1" NPT(F)/ Flanged** xviii. **Make : Invalco/ Fisher/ Samson/ Forbes Marshall /Combustex/ Kimray/MIL/Brightech/Emerson/Murphy/Norreseal**.			
10.3.2(F)	**[F] Indicating Type Tempearture Controller: (Qty: 1 No.)** **i) Type: Pneumatic Indicating PID Controller** **ii) Range : 0 to 150 Deg C** **iii) Sensor : Mercury Filled** **iv) Sensor Connection : 1/2" NPT** **v) Thermowell : Required** **vi) Thermowell Connection : 1" NPT** **vi) Insertion Length : 300 mm (12")** **vii) Input pressure: 10 to 30 psig** **viii) Output Signal pressure: 3 to 15 psig** **Make & Model: Fisher /Samson/ ABB/ OMC s.r.l-Italy/Norreseal**			

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			Bidder Information regarding reference file no & page no in the technical bid	Scrutinizer Remarks
10.3.2(G)	**[G] Temperature Control Valve: (Qty: 1 No.)** **i) End Connection : 1" NPT / Flanged** **ii) Type : Proportional** **iii) Actuator : Pneumatic Diaphragm Operated** **iv) Gas Flow Rate: 40-130 SCM/Hr** **v) Operating signal : 3 to 15 psig.** **vi) Inlet Pressure: 1 to 4 Kg/Sq.cm** **vii) Design Pressure: 10 Kg/Sq.cm** **viii) Test Pressure: 15 Kg/Sq.cm** **Make : Invalco/ Fisher /Samson/Forbes Marshall/Combustex / Kimray/ MIL/ Brightech/Emerson/Norreseal / OMC s.r.l- Italy**			
10.3.2(H)	**[H] Main Supply Gas Regulator: (Qty: 1 No.)** **i) Type: Spring Loaded** **ii) Input pressure : 30 Kg/Sq.cm** **iii) Output pressure: 0 to 4 Kg/Sq. cm adjustable** **iv) Connection : 1" LP Female** **v) Gas Flow Rate: 40 to 130 SCM/Hr.** **Make : Invalco / Samson/ Fisher/ Kimray/Norgen/Norreseal/ OMC s.r.l- Italy**			
10.3.2(I)	**[I] Controller Supply Gas Regulator: (Qty: 1 No.)** **i) Type: Spring loaded** **ii) Input Pressure : 0 to 4 Kg/cm2** **iii) Output Pressure: 0 to 20 psig adjustable** **iv) Connection : 1/4" LP Female** **Make : Invalco /Samson/ Fisher/ Kimray/Norgen/Norreseal / OMC s.r.l- Italy**			
10.3.2(J)	**[J] Pilot Supply Gas Regulator no 1: (Qty: 1 No.)** **i) Type: Spring loaded** **ii) Input Pressure : 0 to 4 Kg/cm2** **iii) Output Pressure: 0 to 20 psig adjustable** **iv) Connection : 1/4" LP Female** **Make : Invalco /Samson/ Fisher/ Kimray/Norgen/Norreseal/ OMC s.r.l- Italy**			
10.3.2(K)	**[K] Pilot Supply Gas Regulator no 2: (Qty: 1 No.)**			

NIT clause no	Technical specification as per NIT	Technical Offer by the Bidder. . Note: * Bidder shall categorically state the specification, information & design parameter of the offered Equipments against corresponding NIT clause	Comments(if any)	
			Bidder Information regarding reference file no & page no in the technical bid	Scrutinizer Remarks
	i) Type: Spring loaded ii) Input Supply : 0 to 20 psig iii) Output : 0 to 5 psig adjustable iv) Connection : 1/4" LP Female Make : Invalco /Samson/ Fisher/ Kimray/Norgen/Norreseal/ OMC s.r.l- Italy			
10.3.2(L)	[L] Pressure gauge in main supply gas line before and after Regulator: (Qty: 2 Nos.) i) Range : 0 to 40 Kg/Sq.cm (before Regulator), 0 to 7 Kg/Sq.cm (after Regulator) ii) Dial Size : 4" Fluid filled type iii) Connection Size: 1/4" iv) Material of Construction: All Stainless Steel Make : Wika/ Odin / Waree / Ashcroft/Noshok/ Mdanial/ Forbes Marshall			
10.3.2(M)	[M] Pressure gauge in controller gas supply line after the regualtor: (Qty:1 No.) i) Range : 0 to 20 PSI ii Dial Size : 50 mm (2") iii) Connection Size: 1/4" iv) Material of Construction: All Stainless Steel Make : Wika/ Odin / Waree/ Ashcroft/Noshok/ Mdanial / Forbes Marshall			
10.3.2(N)	[N] Pressure gauge in pilot burner gas supply line after the regulator no 1: (Qty:1 No.) i) Range : 0 to 20 PSI ii Dial Size : 50 mm (2") iii) Connection Size: 1/4" iv) Material of Construction: All Stainless Steel Make : Wika/ Odin / Waree/ Ashcroft/Noshok/ Mdanial / Forbes Marshall			
10.3.2(O)	[O] Strainer: i) Sp. Gravity of Natural Gas: 0.6 ii) Flow rate of gas: 130 SCM/Hr. iii) Mesh: 80 Mesh SS 304 iv) End Connection: 1" NPT			

NIT clause no	Technical specification as per NIT	Technical Offer by the Bidder. . Note: * Bidder shall categorically state the specification, information & design parameter of the offered Equipments against corresponding NIT clause	Comments(if any)	
			Bidder Information regarding reference file no & page no in the technical bid	Scrutinizer Remarks
	v) Working Pressure: 15 Kg/Sq.cm vi) Test Pressure: 25 Kg/Sq.cm Make: Zoloto/Leader/Sant or equivalent			
10.3.2(P)	[P] Mechanical Shut off Valves : Manual Shut off valve of Globe valve type with LP Female Threaded End connection shall be provided as below i) Main Supply Gas Manual Shut off Valve, 1" x 30 Ksc WP - 01 no ii) Main Burner Manual Shut off Valve , 1" x 10 Ksc WP - 01 no iii) Pilot Burner Manual Shut Off Valve, 1/4" x 10 Ksc WP - 01 no Make: Swagelok/Parker/Hylok/Samson.			
10.3.2(Q)	[Q] Isolation & Bypass Valve for Temperature Control Valve & No Flame Shut off Valve : Isolation & Bypass Valve of Globe valve type with LP Female Threaded End connection shall be provided as below i) Isolation Valve for Temperature Control Valve, 1" x 10 Ksc WP – 02 nos ii) By Pass Valve for Temperature Control Valve,1" x 10 Ksc WP– 01 no iii) Isolation Valve for No Flame Shut off Valve ,1" x 10 Ksc WP– 02 nos iv) By Pass Valve for No Flame Shut off Valve, 1" x 10 Ksc WP- 01no Make : Swagelok/Parker/Hylok/Samson			
10.3.2(R)	[R] Tubes & Fittings: Tubes and Fittings shall be supplied of sufficient quantity to commission all the indirect heaters. Make : Swagelok, Parker, Hylok.			
10.3.2(S)	[S] Unions: Unions of suitable size & pressure rating shall be provided on both sides' valves of all controllers, control valves, shut off valves and Pilot Guard, for ease of replacement/maintenance without disturbing other components of the system.			

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			Bidder Information regarding reference file no & page no in the technical bid	Scrutinizer Remarks
10.4	**10.4 General notes for Instrument & Control System:** **a) All the pneumatic instruments shall be suitable for operating in natural gas as servo supply.** **b)Oil will provide necessary natural gas supply as servo upto battery limit ,however the required Servo Gas Pressure Regulators for all pneumatic instruments of make: Fisher Model 67 CFR / Norgren / Maxitrol /Norriseal / OMC s.r.l.- Italy shall be provided by the bidder.** **c) The Temperature Control Valve and the Fuel Shut-off Valve shall have isolation and bypass Valves .** **b) Operation and Maintenance manuals of all the instruments shall be provided along with the supply of materials.** **d) Step by step operating procedure of remote ignition and no flame shutdown system shall be separately inscribed in a non-erasable placard in the area where its operation would be carried out.** **e) Earthing Provision: The Indirect Heater shell will have Two (2) nos plates to be welded with saddle and provision of 3/4" studs with nuts (1 each at one of the legs and the vessel) for electrical earthing.**			

TENDER NO.SDI9755P19 DT: 15.11.2018

Annexure II

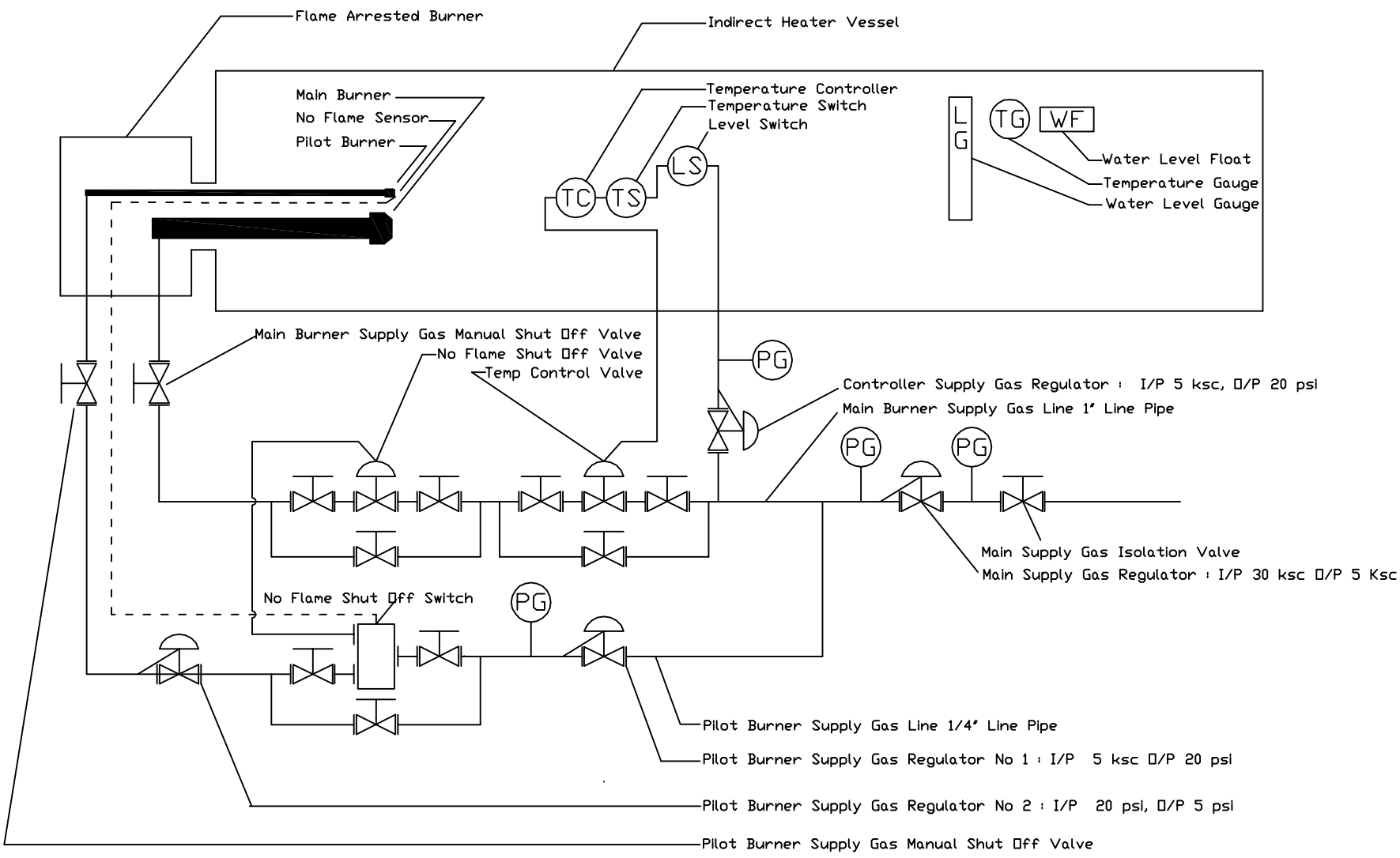
Tender special notes:

NIT clause no	Special Tender notes as per NIT	Technical Offer by the Bidder. . Note: * Bidder shall categorically state the specification, information & design parameter of the offered Equipments against corresponding NIT clause	Comments(if any)	
			Information by bidder regarding reference file no & page no in the technical bid.	Scrutinizer Remarks
i)	i) The bidder shall confirm that the goods, materials to be supplied shall be new, of recent make, of the best quality & workmanship. The bidder shall confirm that the materials shall be guaranteed for a period of 18 months from the date of despatch or 12 months from the date of receipt/assembling at Fields, whichever is earlier, against defects arising from faulty materials, workmanship or design. Defective goods / materials or parts notified by OIL to the Seller shall be replaced immediately by the Seller on FOR destination basis including payment of all taxes and duties at Seller's expense. This guarantee shall survive and hold good not-withstanding inspection, payment for and acceptance of the goods.			
ii)	ii) Suppliers are to note that the drawing supplied by OIL is purely to guide the suppliers to make the final working drawings by them. The drawings should, in no case be treated as final fabrication drawings. Manufacturer's working drawing should be sent to OIL for approval along with Quality Assurance Plan (QAP) prior to the commencement of manufacture/fabrication of the heaters. The Bidder shall confirm the same in their technical Bid			
iii)	iii) The heaters should be shop constructed and tested as per API Std. 12K (latest revision).			
iv)	iv) All the welding shall be done as per ASME section IX. Suppliers shall confirm that all coils and shell welding will be done by welders who are qualified under ASME boiler and pressure vessel code section- IX regulations.			
v)	v) Stress relieving of the pressure coils and fire tubes shall be required. Stress relieving operations are to be conducted in automatic temperature controlled furnace. The Bidder shall confirm the			
vi)	vi) Pressure coils and fire tubes should be hydraulically tested to the pressure specified in the drawings & technical specification. The Bidder shall confirm the same in their technical Bid.			
vii)	vii) The coils should be tested 100% radiographically. The Bidder shall confirm the same in their technical Bid.			

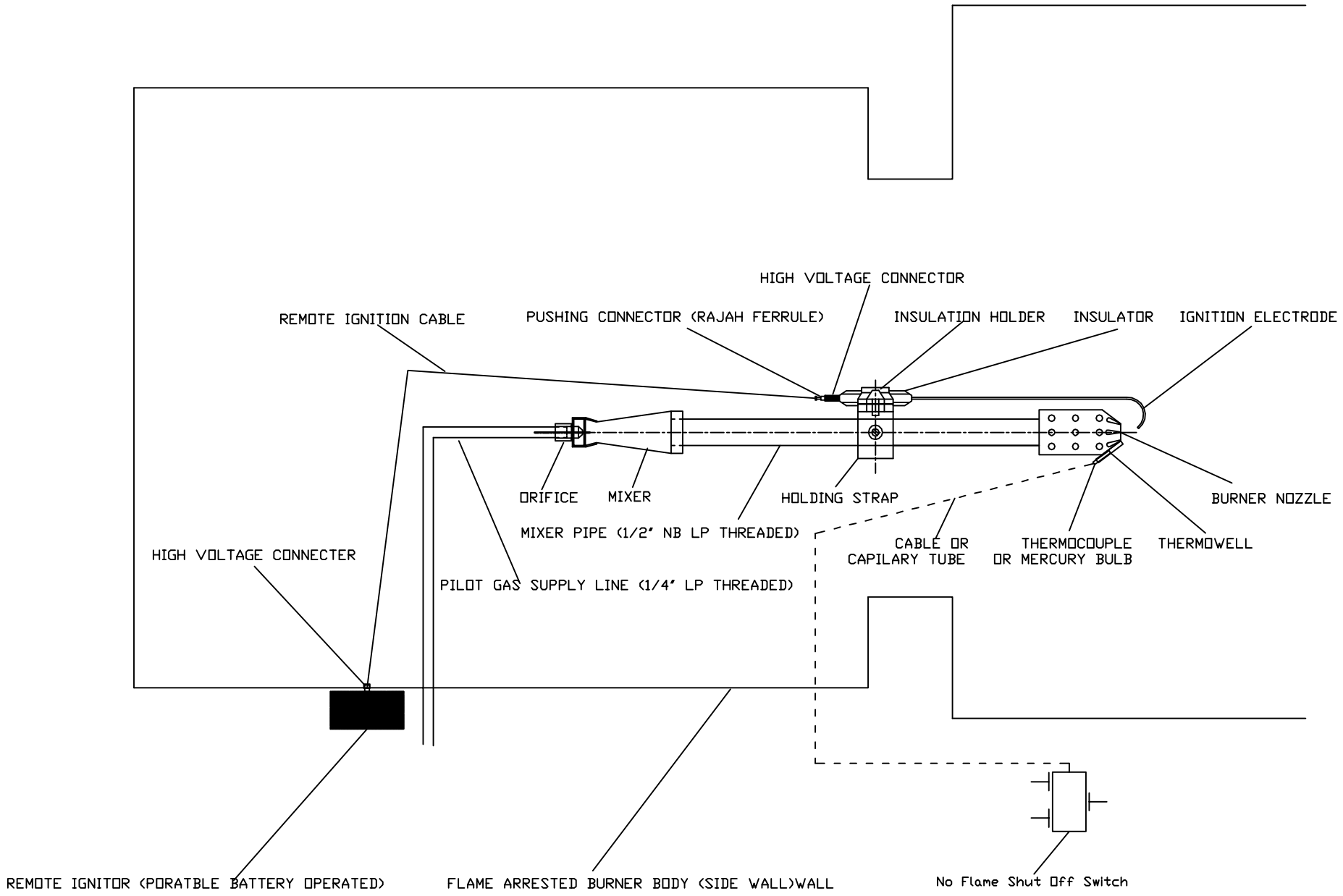
NIT clause no	Special Tender notes as per NIT	Technical Offer by the Bidder. . Note: * Bidder shall categorically state the specification, information & design parameter of the offered Equipments against corresponding NIT clause	Comments(if any)	
			Information by bidder regarding reference file no & page no in the technical bid.	Scrutinizer Remarks
viii)	viii) X- Ray plate & report, radiographic test report should be produced to OIL's inspectors while inspecting and subsequently to be provided with supply of the materials.			
ix)	ix) The following documents shall be forwarded with the technical bid: a) Typical Process and Instrumentation (P&ID) diagrams b) Typical General Arrangement Diagram (GAD) of the unit. c) Sectional drawing showing the internals of the indirect heater. d) Sectional drawing showing the internals of the Fuel Scrubber. e) Drawings showing details of Remote Ignition System of Pilot Burner and Flame Failure shutdown system. f) Circuit Diagram of Remote Ignition System with details of electronic components and battery. h) Instrument data sheets along with name of manufacturer. i) Make and technical specification of all the bought-out items along with technical literature, GAD etc.			
X)	x) Test Certificates: Manufacturer to provide following certificates along with the supply as per standard of manufacture & QAP. The Bidder shall confirm the same with the technical bid a) Raw materials: Chemical & mechanical test certificate as per standard specified in technical specification. b) Hydraulic test certificate, radiographic test certificate, certificate of Quality & Standard of welding. c) Certificate of visual inspection & measurement of dimensions. d) Process and Instrumentation diagrams.			

NIT clause no	Special Tender notes as per NIT	Technical Offer by the Bidder. . Note: * Bidder shall categorically state the specification, information & design parameter of the offered Equipments against corresponding NIT clause	Comments(if any)	
			Information by bidder regarding reference file no & page no in the technical bid.	Scrutinizer Remarks
Xi)	**xi) Third Party Inspection**: The materials shall be offered for third party inspection for the following scope- a) Inspection of raw materials. b) Inspection of radiography of welded joints. c) Inspection of Hydraulic testing of Process/Pressure coils. d) Inspection of Hydraulic testing of Fire Tube. e) inspection of Water fill test of the shell. f) Inspection of bought-out items. g) Inspection of certificates in respect of raw materials, bought-out items, radiography etc. h) Inspection of Hydraulic testing of Fuel Scrubber.			
Xii)	xii) The Third Party Inspector must be OIL's authorized / recognized inspecting agencies i.e. M/s Lloyds or M/s Bureau Veritas or RITES or M/s IRS or M/s DNV or Tuboscope Vetco.			
Xiii)	**xiii) Pre-dispatch Inspection by OIL** OIL's representative shall inspect the materials prior to dispatch at vendor's works at OIL's cost. OIL's representative shall review TPI reports, witness hydraulic testing of coils and remote ignition system with Hand-held High Energy Igniter. Three weeks prior notice to be given to OIL for pre–dispatch inspection.			
xiv)	**xiv) Painting and Insulation:** a) External surface shall be cleaned, by sand blasting to Sa2 -1/2 grade followed by 2 coats of heat resistant primer followed by high temperature aluminium paint. b) Inner surface will be cleaned by wire brushing and will be provided with 2 coats of heat resistant primer. Each coat will have min DFT of 35 micron. c) The heater body shall be thermally insulated by rock wool (Density 120) and aluminum sheet (20 gauges) covered with tight sealing, to prevent heat loss and external insertion of water and foreign elements.			
xv)	**xv) Marking**: OIL's logo, Purchase order No. and manufacturers name shall be die stamped/weld written in the shell of the heater.			

NIT clause no	Special Tender notes as per NIT	Technical Offer by the Bidder. . Note: * Bidder shall categorically state the specification, information & design parameter of the offered Equipments against corresponding NIT clause	Comments(if any)	
			Information by bidder regarding reference file no & page no in the technical bid.	Scrutinizer Remarks
xvi)	**xvi) Joint Inspection on arrival of Materials:** I. Commissioning of the equipments will be carried out by OIL at fields. However after Receipt of Equipments, the supplier will send their representative/ Service Engineer for the assembling of the components, mountings & Instrumentation items on each unit before deployment for field operation. On receipt of the equipments by OIL, the supplier will be intimated to depute their representative/Service engineer. The supplier shall depute their representative/ service Engineer within 20 days after receipt of official intimation. The Bidder shall confirm the same in their technical Bid. II. The representative/Service Engineer shall have to provide practical demonstration to operating personnel of OIL regarding safe operating procedure & maintenance of equipments & Instrumentation items.			
Xvii)	xvii) The Bidder shall filled up and submit Technical specification on the check list(annexure-I), Tender notes check list (annexure-II) , BRC/BEC check list (Annexure-III), Instrumentation data sheet Check List(Annexure-III) along with technical bid as per attached format. All format shall be filled up with detailed information/specification. The use of words in check lists like **complied or yes or considered is not suffice the requirement of check list. The bidder shall categorically provide the information as per requirements of check lists.**			



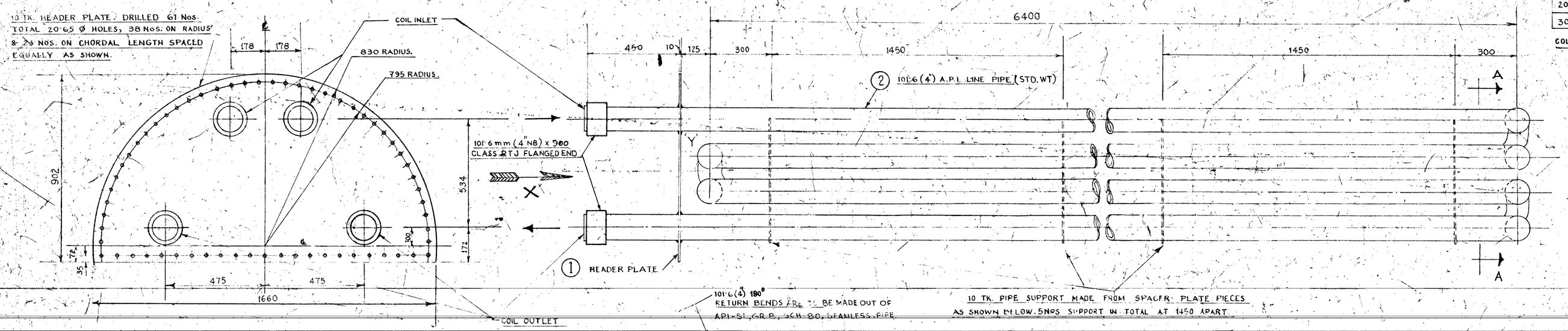
NOTES : 1) NOT TO SCALE 2) REFER SPECIFICATION FOR ITEM DESCRIPTION	**OIL INDIA LIMITED** PROD (OIL) DEPTT. DULIAJAN 786602	**INDIRECT HEATER : P&ID DIAGRAM**	**DR NO**	**OIL/PDNO/P&D/025/A-Pg 2 of 2**

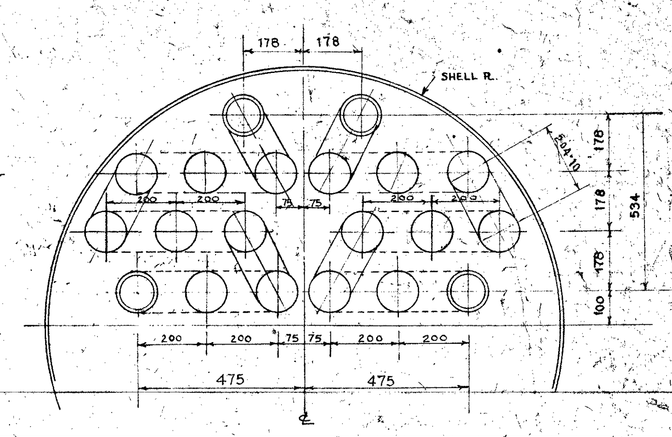


NOTES : 1) NOT TO SCALE 2) REFER SPCIFICATION FOR ITEM DESCRIPTION	**OIL INDIA LIMITED** PROD (OIL) DEPTT. DULIAJAN 786602	**INDIRECT HEATER : PILOT BURNER WITH REMOTE IGNITION**	**DR NO**	**OIL/PDNO/P&D/025/A-Pg 1 of 2**

COL 'A'	ITEM NO.	MATERIAL LIST DESCRIPTIONS	DRG. REF.	CAT No./ MAT. SUPPLIERS REF.	REMARKS
1	1	HEADER PLATE - 10 TK. M.S. PLATE		I.S. 2062	
1	2	COIL PIPE - 101.6Ø(4") N.B. SEAMLESS LENGTH AS SHOWN.		A.P.I. 5L GR.B	
5	3	COIL SUPPORT - 178 x 10 TK. X 1030 LG. M.S. PLATE		I.S. 2062	LT. Nos. 3 TO 6 TO BE TACK WELDED ON CONTACT POINT OF LT. No. 2
5	4	" - 178 X 10 TK. X 1236 LG. " "		"	
5	5	" - " " " " " "		"	
5	6	" - 83 X 10 TK. X 1236 LG. " "		"	
10	7	M.S. ROLLER 45.0D x 26 I.D. x 50 LG.		"	
10	8	M.S. PIN 25 Ø X 140 LG.		"	
20	9	STD. WASHER 25·40		"	
20	10	40 X 6 TK. X 150 LG. F.S.		"	
30	11	12·70(½") Ø M.S. BOLT X 40 LG. WITH NUT (B.S.W)		M.S. (B.S. 916)	

COL. 'A' ASSEMBLED TOGETHER MAKES A COMPLETE SUB-ASSY OF GROUP UNIT HEATER COIL.





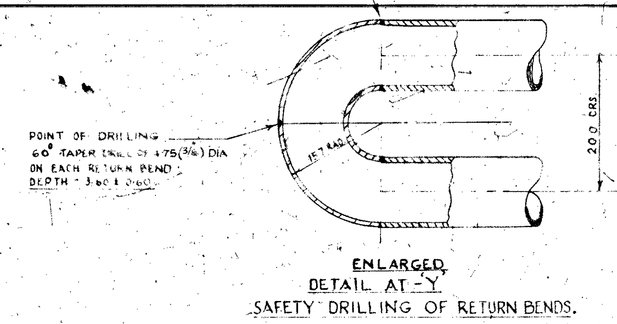
END VIEW LOOKING FROM -X

SECTION A-A

DETAIL OF COIL ARRANGEMENT

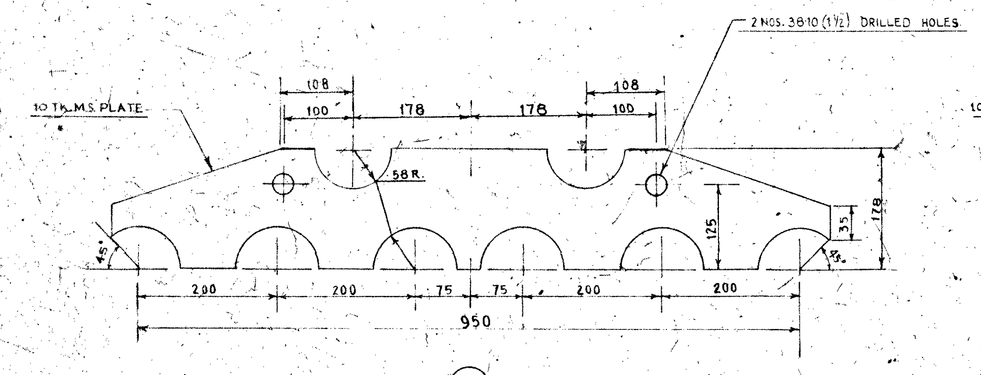
4" STD. WT. SEAMLESS PIPE BENT AT 180°

COIL WORKING PRESSURE — 1500 PSI.



ENLARGED DETAIL AT -Y

SAFETY DRILLING OF RETURN BENDS.



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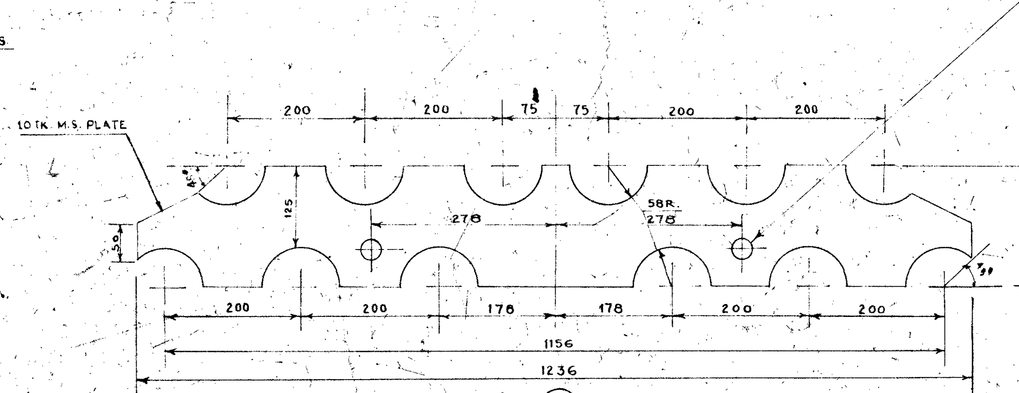

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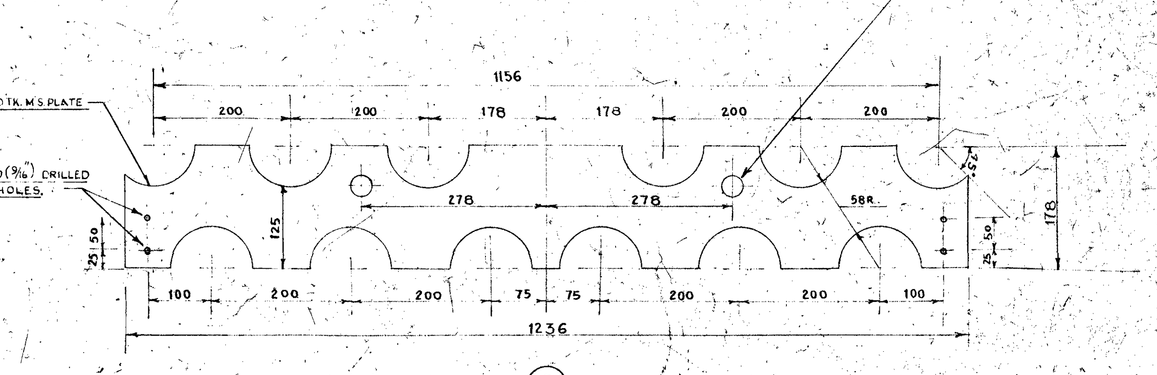
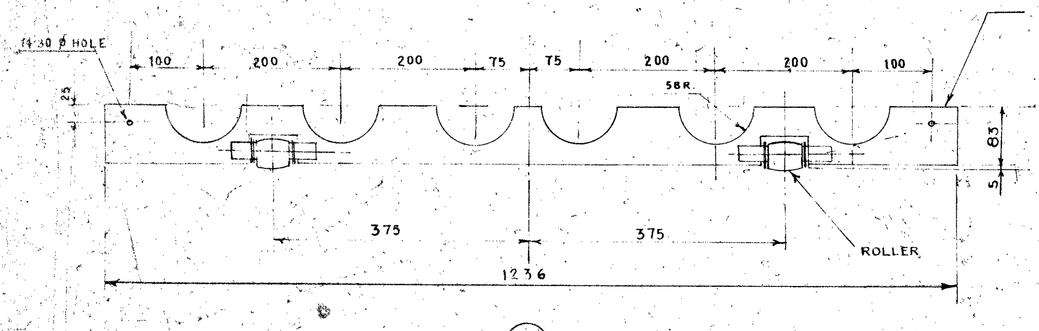


(5)

DETAIL OF PIPE SUPPORT



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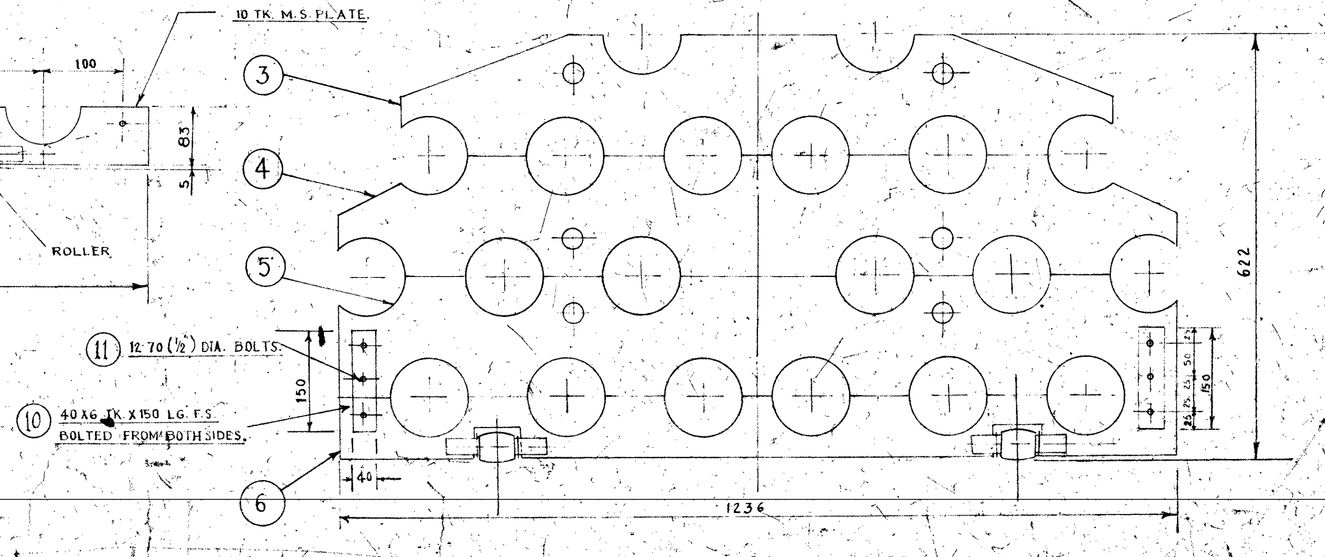
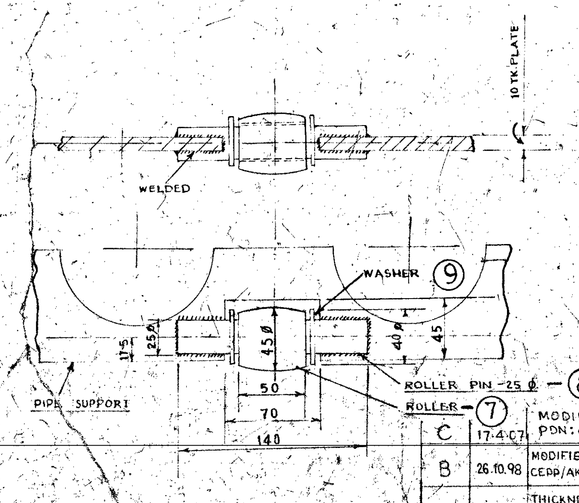




DETAIL OF ROLLER

FOR GEN. ARRGT. REFER DRG. No. OIL/2670.

RETRACED ON 3-7-84.

REV	DATE	DESCRIPTION	SIGN
C	17.4.67	MODIFIED AS PER LETTER NO. PDN: O: 2/12/3.01-11 DT. 11.4.67	
B	26.10.98	MODIFIED AS PER LETTER NO. CEDP/AKN/26/2/98 DT. 13/10/98	
A	9.6.75	THICKNESS OF HEADER PLATE WAS 12 LENGTH OF PLATE NOS. 2, 3 & 4 WAS 12.72, HEIGHT OF PLATE No. 4 WAS 195 & ROLLER DIMN. WERE 26 & 67.125 LG.	

OIL INDIA LIMITED

DULIAJAN

DRG. NO OIL/2051/C DATE 29.8.72

SUBJECT - DETAIL OF GROUP UNIT INDIRECT HEATER COIL

SCALE 1:2.5, 1:5 & 1:10.

DRAWN BY P.D.

TRACED BY Plasma CHECKED BY

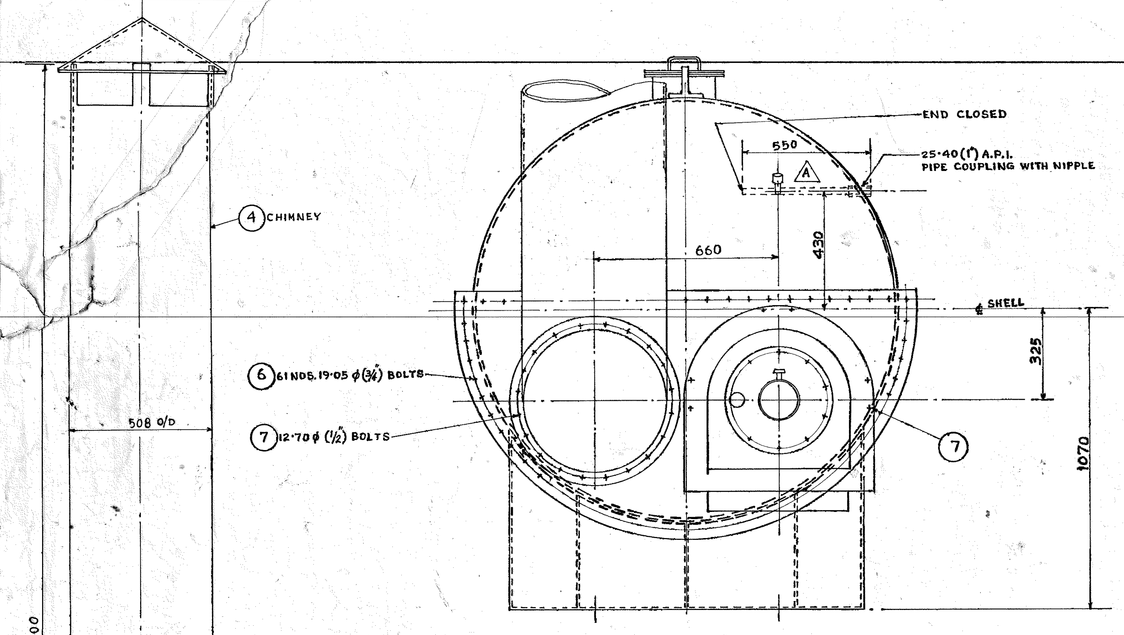
TRAC. CHECKED BY APPROVED BY

ALL DIMENSIONS ARE IN MILLIMETRE.

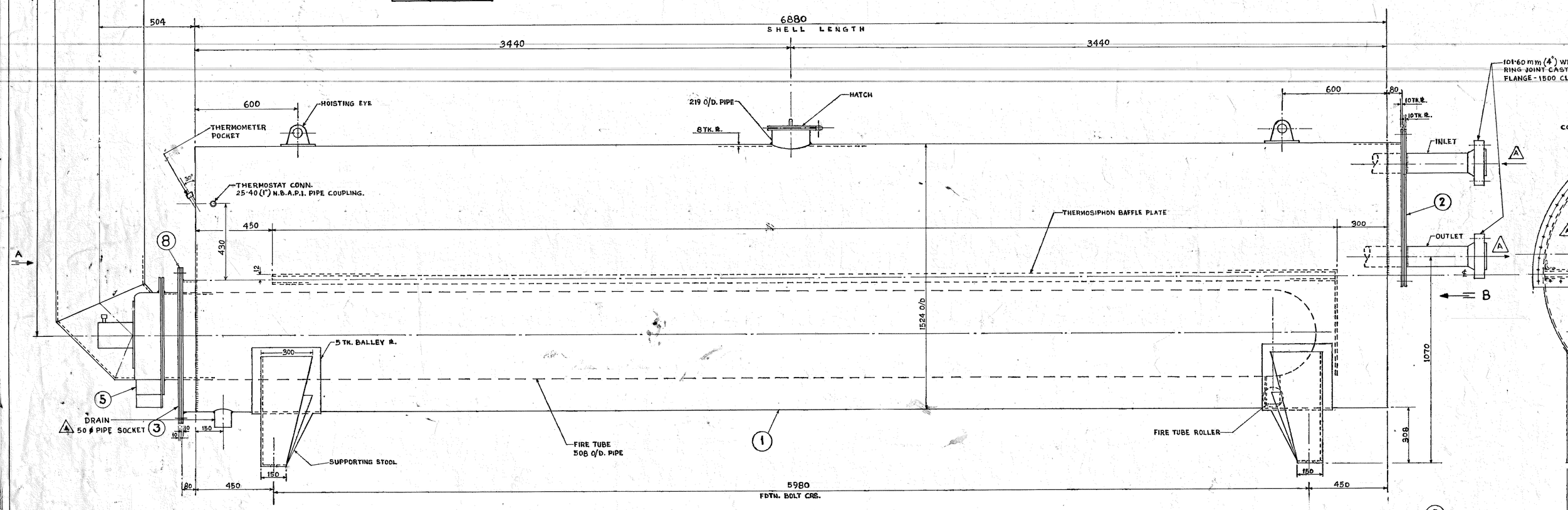
ASSEMBLY OF PIPE SUPPORT

MATERIAL LIST				DRG. NO. OIL/	
COL. A	ITEM NO.	DESCRIPTION	DRG. REF.	CAT. NO/MAT. SUPPLIERS REF.	REMARKS
1	1	SHELL SUB ASSY	DRG. NO. OIL/2671		
1	2	HEADER PLATE WITH COIL BOUNDLE	DRG. NO. OIL/2051/A		
1	3	HEADER PLATE WITH FIRE TUBE	DRG. NO. OIL/2672		
1	4	CHIMNEY			
1	5	FIRE BOX			
122	6	19·05 (3/4") ϕ STEEL BOLTS X 60 LG. WITH NUTS B.S.W.		M.S. (B.S. 916)	
26	7	12·70 (1/2") ϕ STEEL BOLTS X 50 LG. WITH NUTS B.S.W.		"	
2	8	RUBBER GASKET 902 X 1660 X 3 TK.		NEOPRENE	CUT TO SHAPE
1	9	PERMANITE GASKET 685 O/D X 488 I/D X 3·20 TK.		IS: 2712 GY. A/S	
1	10	" " 610 O/D X 488 I/D X 3·20 TK.		"	

COL. 'A' ASSEMBLED TOGETHER MAKES A COMPLETE INDIRECT HEATER

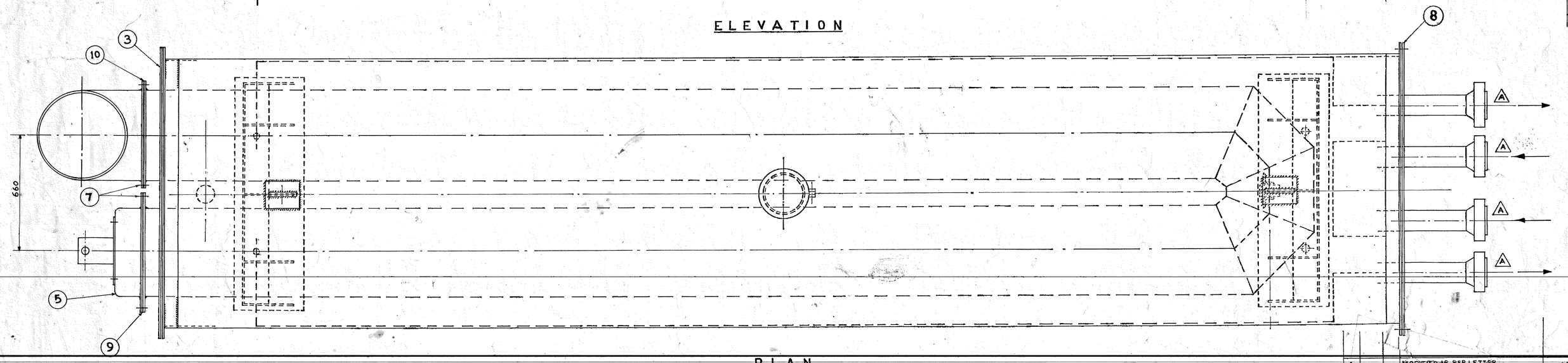


END VIEW FROM 'A'



ELEVATION

END VIEW FROM 'B'



PLAN

ALL DIMENSIONS IN MILLIMETRE

REFERANCE DRAWINGS :

1. SHELL SUB ASSEMBLY - DRG. NO. OIL/2671.
2. FIRE TUBE & CHIMNEY- " " OIL/2672.
3. HEADER R. WITH COIL BOUNDLE - DRG. NO. OIL/2051/A.
4. FOR FOUNDATION DETAIL - SK. NO. OIL/3205

HEATING CAPACITY - 0·88 X 10^6 W.

TRACED ON 28.7.98.

REV.	DATE	ZONE	BRIEF RECORD	APPROVED
A	25.11.94		MODIFIED AS PER LETTER NO. CE.PP/1/AKB/94 DT.- 21/11/94	12.12.94

OIL INDIA LIMITED
DRAWING OFFICE
DULIAJAN

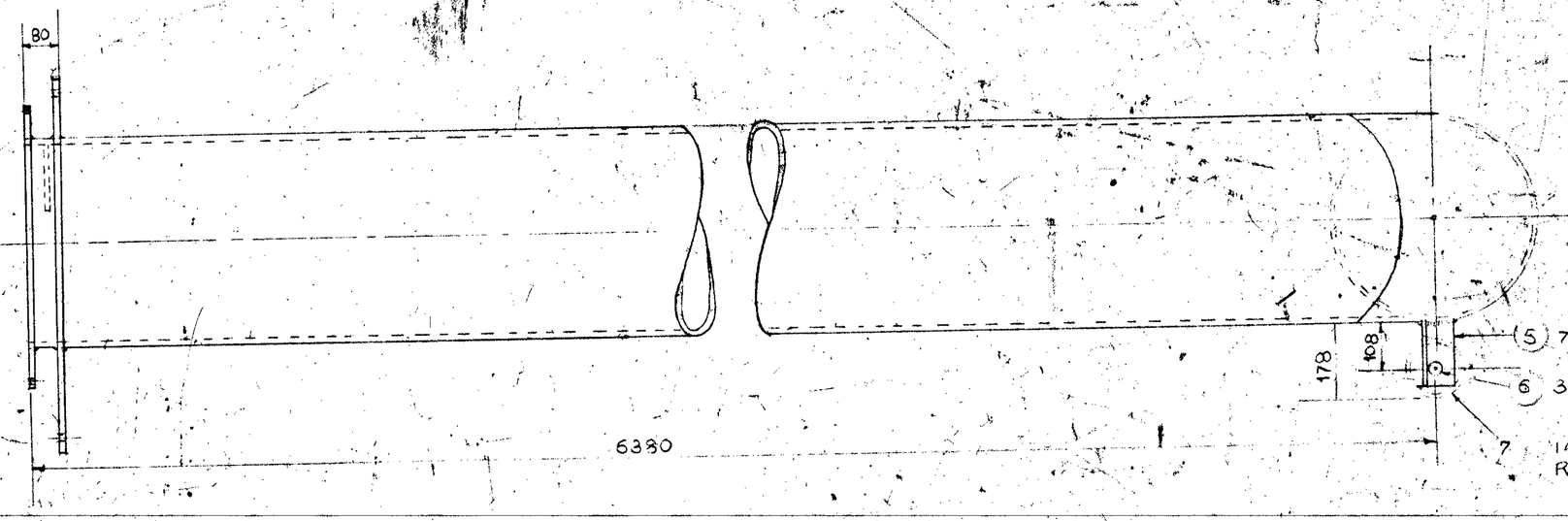
	NAME	DATE
DESIGNED		
DRAWN		22.12.72
TRACED		28.7.98
CHECKED		9/3/99
APPROVED		

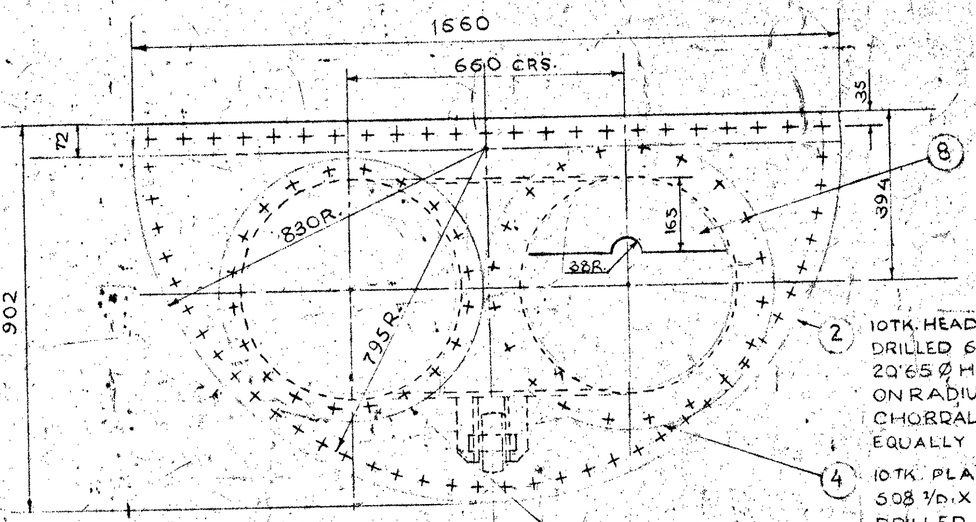
SCALE 1:10

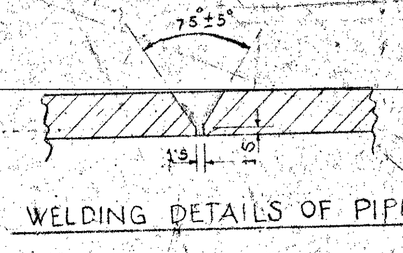
TITLE
BATH TYPE INDIRECT HEATER 1524 O/D X 6880 LG.
GEN. ARRGT.

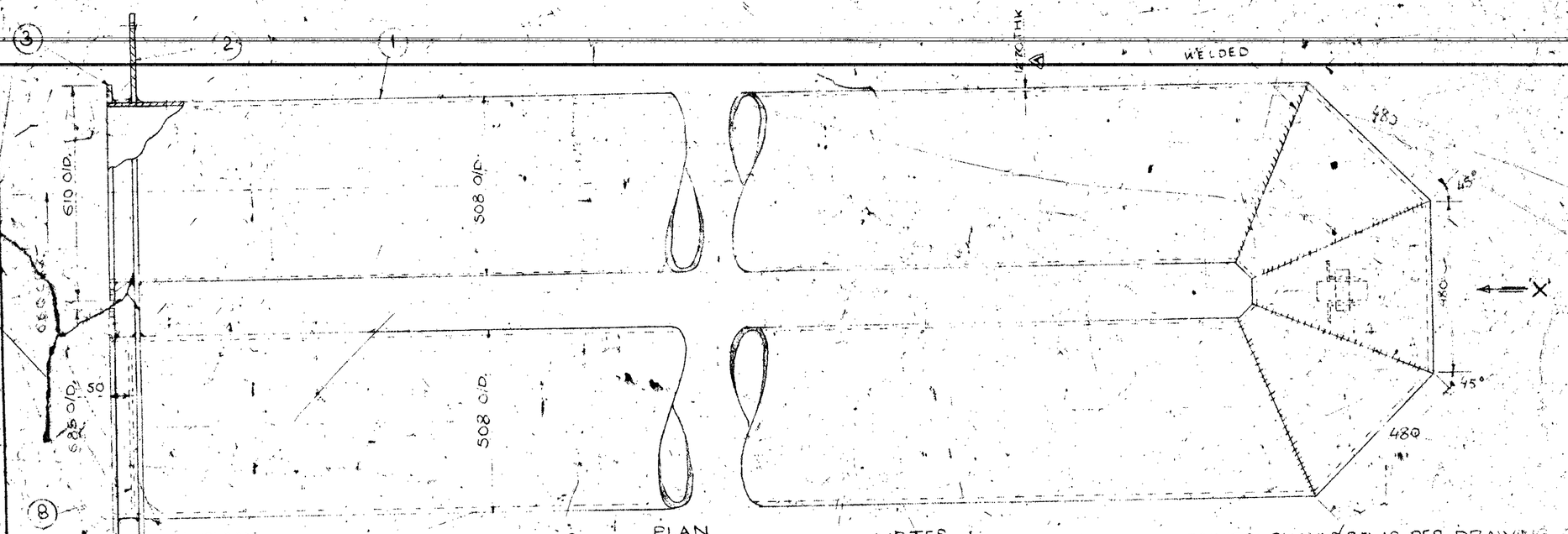
DRG. NO. OIL/2670/A

DRG NO. OIL/



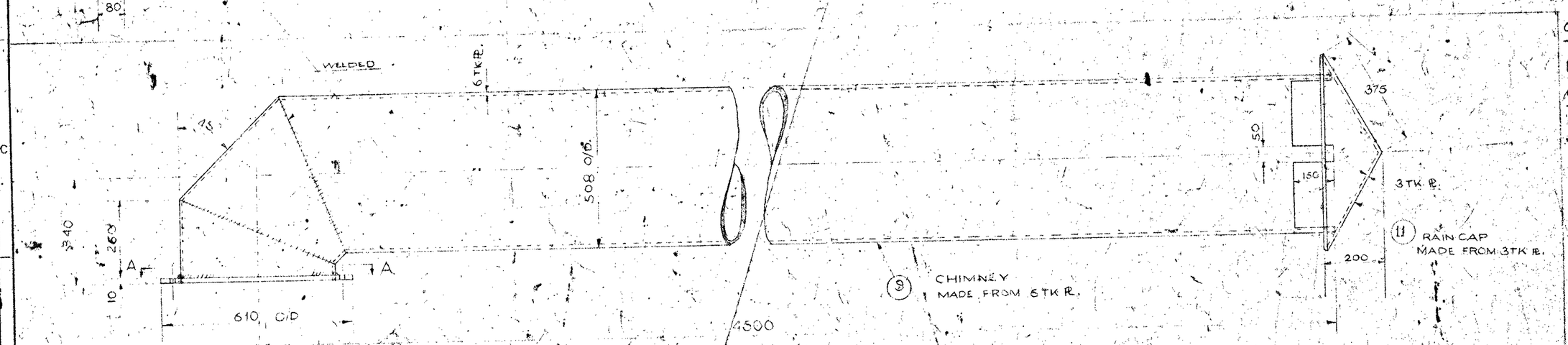






NOTES
1. NO OF WELDING JOINTS SHOULD BE AS PER DRAWING ONLY.
2. 100% RADIOGRAPHIC TESTS FOR ALL WELDS HAVE TO BE DONE.
3. FIRE TUBE TO BE STRESSED RELIVED AFTER COMPLETE WELDING.

322



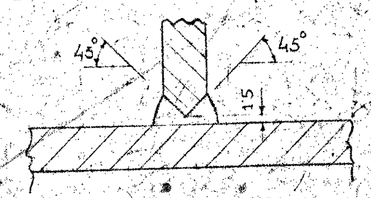
COL:-'A' ASSEMBLED TOGETHER MAKES 'A' COMPLETE FIRE TUBE.

COL:'B' ASSEMBLED TOGETHER MAKES 'A' COMPLETE CHIMNEY.

DRG NO. OIL/2672

COL B	COL A	ITEM NO.	DESCRIPTIONS	DRG. REF.	CAT. NO./MAT. SUPPLIERS REF.	REMARKS
	1	1	SEAMLESS PIPE 508 O/D WALL THICKNESS 12.70 mm.		API 5L GR B	
	1	2	HEADER FLANGE. 10TK R.		IS: 226	
	1	3	FLANGE PLATE - 10TK X 508 I/D X 610 O/D		"	
	1	4	FLANGE PLATE. 10TK X 508 I/D X 685 O/D		"	
	2	5	75 X 50 X 8 L.I. X 150 LG.		"	
	1	6	M.S PIN. - 38Ø X 100 LG.		"	
	1	7	M.S. ROLLER 140Ø X 50 LG.		"	
	1	8	M.S. PLATE 165 X 6TK X 455 LG.		"	CUT TO SHAPE
1		9	PIPE - 508 O/D MADE FROM 6TK R.		"	
1		10	FLANGE PLATE - 10TK X 508 I/D X 610 O/D.		"	
1		11	RAIN CAP - MADE FROM 3TK R.		"	

COL:- 'A' ASSEMBLED TOGETHER MAKES A COMPLETE FIRE TUBE.
COL-B ASSEMBLED TOGETHER MAKES A COMPLETE CHIMNEY



SUPERSEDES SK. NO. OIL/1610

FOR GEN. ARRGT. REFER TO DRG. NO. OIL/2670.

RETRACED ON 24.9.88

REV.	DATE	BRG.	BRIEF RECORD	APPROVED
1	1.6.95		NOTES 1,2,3 ADDED. PIPE SPECIFICATION ALTERED.	

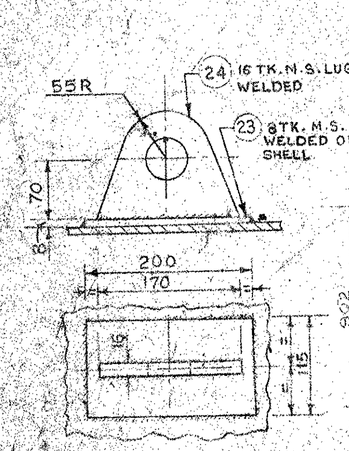
OIL INDIA LIMITED
DRAWING OFFICE
DULIAJAN

	NAME	DATE
DESIGNED		
DRAWN	P.BORTHAKUR	27.2.88
TRACED		
CHECKED		
APPROVED		

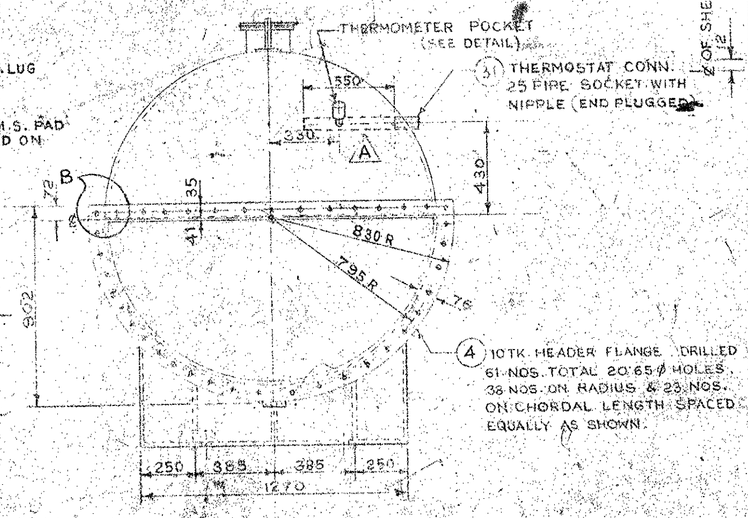
SCALE 1:10

TITLE
BATH TYPE INDIRECT HEATER.
DETAILS OF FIRE TUBE AND CHIMNEY.

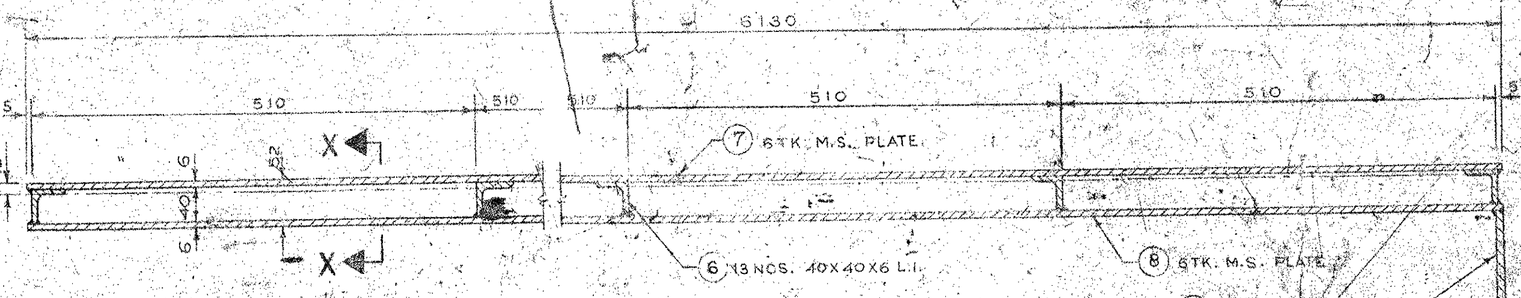
DRG. NO. OIL/2672



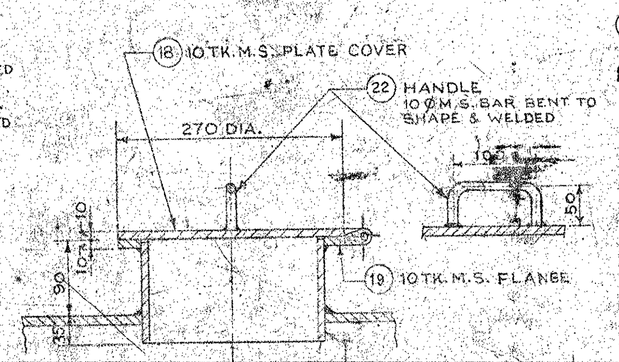
DETAILS OF LIFTING LUG & PAD

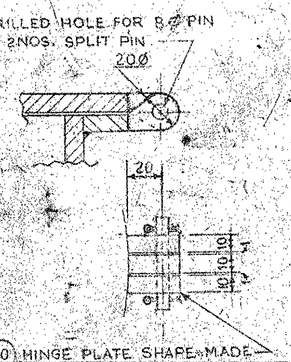


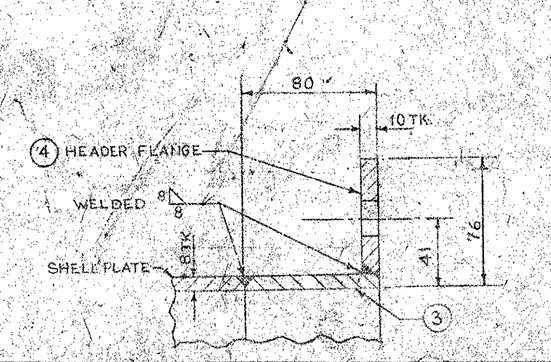
END VIEW FROM-D



DETAIL OF THERMSIPHON BAFFLE







DETAIL OF HINGE

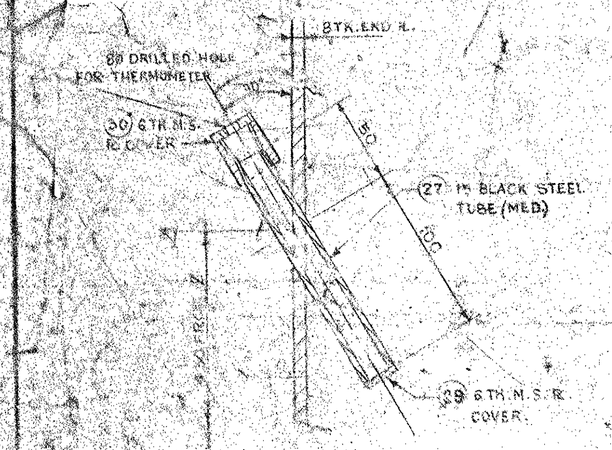
ENLRGD VIEW AT 'A'

MATERIAL LIST

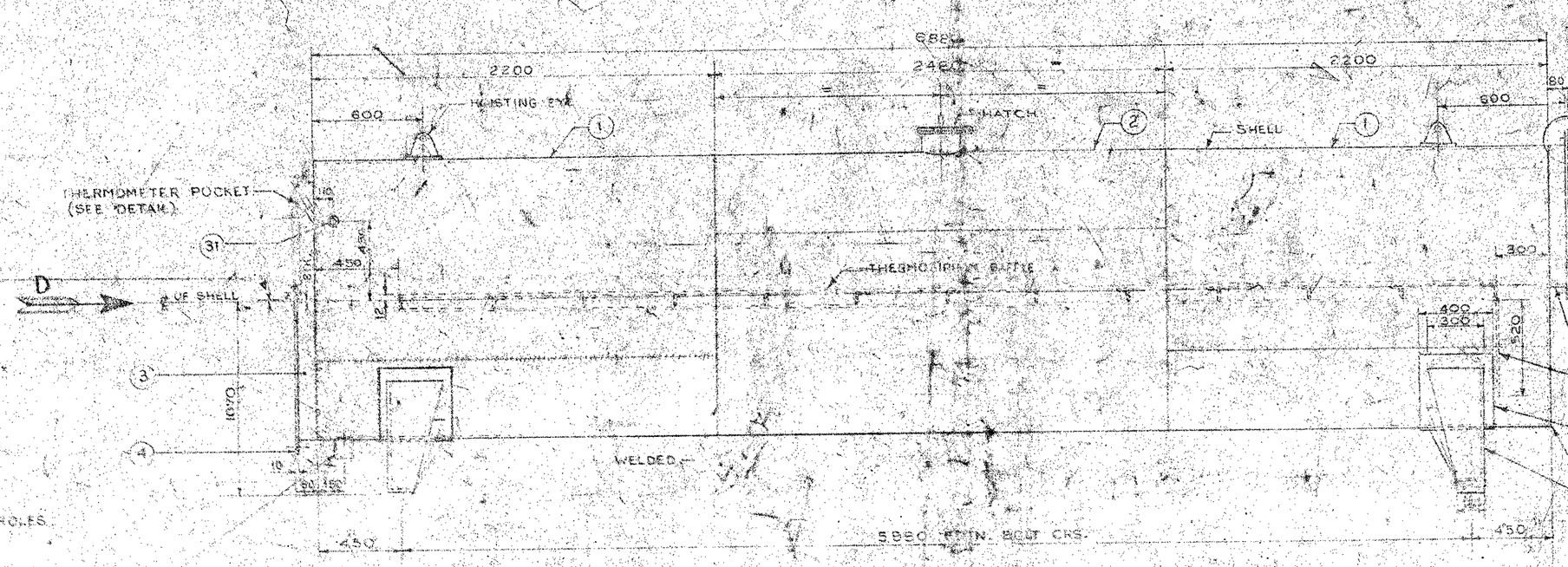
DRG. NO. OIL/ 5303

COL A	ITEM NO	DESCRIPTION	DRG REF	CAT NO./MAT. SUPPLIERS REF.	REMARKS
2	1	SHELL END SECTION 2200 X 8 TK. X 4708 LG. M.S. PLATE		IS: 226	
1	2	SHELL MID SECTION 2480 X 8 TK. X 4785 LG. M.S. PLATE		" "	
2	3	80 X 8 TK. X 3382 LG. M.S. PLATE		" "	BENT TO SHAPE
2	4	HEADER FLANGE 902 X 10 TK. X 1680 LG. R.		" "	CUT TO SHAPE
2	5	50 X 50 X 6 L.I. X 6130 LG.		STD	
13	6	40 X 40 X 6 L.I. X 1494 LG.		STD	
1	7	BAFFLE PLATE 1500 X 6 TK. X 6130 LG.		IS: 226	
1	8	" " 1408 X 8 TK. X 6130 LG.		" "	
1	9	" " 520 X 8 TK. X 1508 LG.		" "	TO SHAPE
2	10	END PLATE 785 X 8 TK. X 1524 LG.		" "	" " "
2	11	BELLY PLATE 400 X 6 TK. X 1600 LG.		" "	BENT TO SHAPE
2	12	BASE PLATE 150 X 10 TK. X 1270 LG.		" "	
4	13	VERT. PLATE 300 X 10 TK. X 625 LG.		STD	CUT TO SHAPE
6	14	" " 300 X 10 TK. X 480 LG.		" "	" " "
2	15	" " 300 X 10 TK. X 292 LG.		" "	" " "
2	16	BACK PLATE 625 X 10 TK. X 1270 LG.		" "	" " "
1	17	200 ø (8") LINE PIPE X 125 LG.		STD	
1	18	COVER 270 DIA. X 10 TK. X M.S. PLATE		IS: 226	
1	19	FLANGE 220 I.D. X 270 O.D. X 10 TK. R.		" "	
3	20	HINGE PLATE 20 X 10 TK. X 300 LG. R.		" "	
1	21	8ø HINGE PIN X 80 LG. WITH 2 NOS. 3ø SPLIT PIN		" "	
1	22	HANDLE 10ø M.S. BAR 300 LG.		" "	BENT TO SHAPE
2	23	115 X 8 TK. X 200 LG. PLATE		" "	CUT TO SHAPE
2	24	125 X 16 TK. X 170 LG. PLATE		" "	
1	25	50ø PIPE SOCKET (A)		15 (PART III) IS: 226	
2	26	GUIDE PLATE 200 X 8 TK. X 300 LG.		IS: 226	
1	27	15 BLACK STEEL TUBE X 1350 LG.		15 (PART III) IS: 226	
1	28	15 PIPE SOCKET		" "	
1	29	COVER 6 TK. M.S. PLATE		IS: 226	
1	30	" "		" "	
1	31	25 PIPE SOCKET		15 (PART III) IS: 226	

COL 'A' ASSEMBLED TOGETHER MAKES A COMPLETE SHELL SUB ASSEMBLY

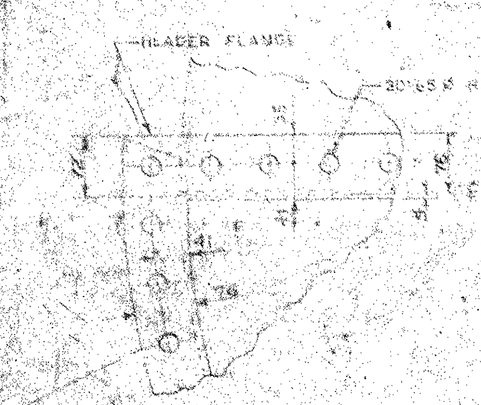


DETAIL OF THERMOMETER POCKET

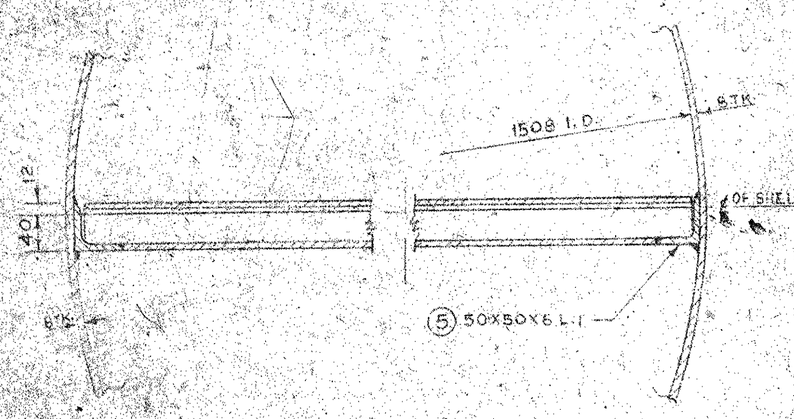


ELEVATION

END VIEW FROM-C



ENLRGD VIEW AT B



SECTION ON - X-X

PLAN

PLAN VIEW OF SUPPORTING STOOLS

ALL WELDED CONSTRUCTIONS
ALL FILLET 8 MIN. CONTINUOUS
FOR GEN. ARRGT. REFER TO DRG. NO. 1 / 2670
SUPERSEDES DRG. NO. OIL/ 2671

REV.	DATE	DESCRIPTION	SIGN.
A	6.11.96	MODIFIED AS PER LETTER NO. CEPP/1/AKN/94 DT. 21/11/94	

OIL INDIA LIMITED
DRAWING OFFICE
DULIAJAN

	NAME	DATE
DESIGNED		
DRAWN	[illegible]	13.3.96
STANDD	[illegible]	[illegible]
ENGINEER		
APPROVED		

SCALE 1:10 1:5 1:20 2 1:25

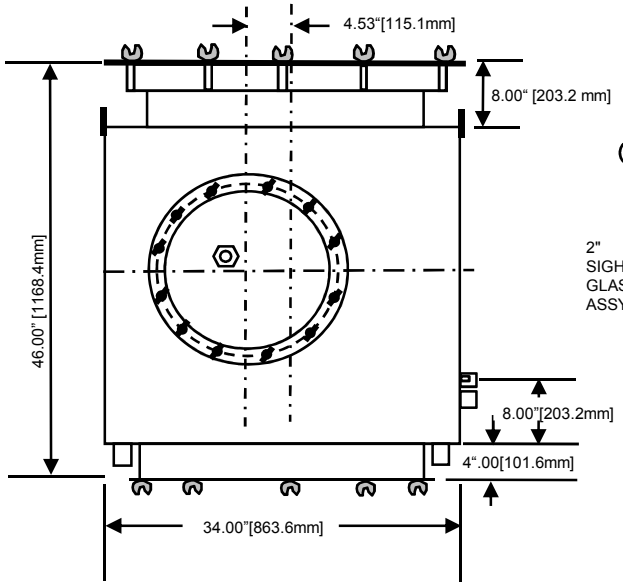
TITLE
BATH TYPE INDIRECT HEATER DETAILS OF SHELL SUB-ASSEMBLY.

DRG. NO. OIL/ 5303

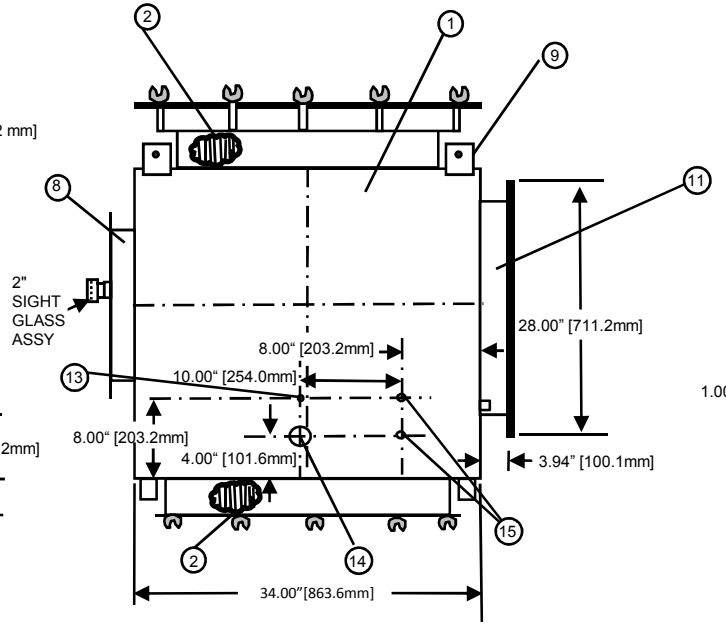
DIMENSIONS IN MILLIMETERS

ITEM NO. 1:
Details of Flame Arrestor for 3.0 MMBTU/Hr. Indirect Heater.
Drg. No. OIL/PDNO/P&D/001/01

ENGINEERING DATA				
ITEM	**QTY.**	**DESCRIPTION**	**SIZE**	**MATERIAL**
1	1	HOUSING	0.16" THICK	ALUM.3003-H14
2	2	FLAME CELL	23" O.D. x 4" THICK	ALUM.3003-H14
3	2	MIXER	4" ECLIPSE NS-160 ASSEMBLY 300128	CAST IRON
4	2	NOZZLE (NOT SHOWN)	4" ECLIPSE STICKTITE ST-216-84	CAST IRON
5	1	PILOT (NOT SHOWN)	1/4" NPT	CARBON STEEL W/ S.S. SHIELD
6	2	BURNER PIPE NIPPLE (NOT SHOWN)	4" NPT X 36" LONG	CARBON STEEL
7	1	PILOTPIPE NIPPLE (NOT SHOWN)	1/2" NPT X 37" LONG	CARBON STEEL
8	1	MANWAY	18" I.D.	ALUM.3003-H14
9	4	LIFTING LUG	4" X 4" X 0.16" THICK	ALUMINUM
10	4	COUPLING	1-1/2" NPT	ALUMINUM
11	1	NECK, EXTENDED W/ OUTSIDE FLANGE	20" ID. X 28" O.D.X 0.25" THICK	ALUM.3003-H14
12	1	RAIN HOOD	0.16" THICK	ALUM.3003-H14
13	2	COUPLING	1/4" NPT	ALUMINUM
14	1	COUPLING	2" NPT	ALUMINUM
15	2	COUPLING W/BUSHING	1" NPT & 1" X 1/4" NPT	ALUMINUM

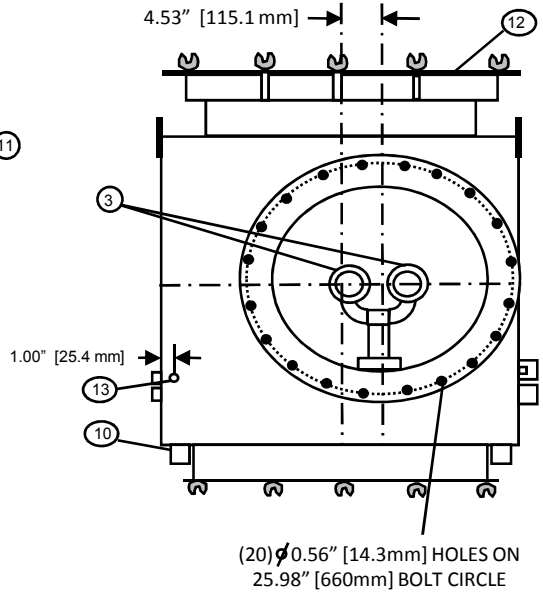


FRONT VIEW



SIDE VIEW

NOT TO SCALE



BACK VIEW