

OIL INDIA LIMITED

(A Government of India Enterprise)

P.O. Duliajan-786602, Assam, India

E-mail: material@oilindia.in

INVITATION FOR BID

Annexure - II

OIL INDIA LIMITED invites Local Competitive Bids (LCB) through its e-procurement portal <https://etender.srm.oilindia.in/irj/portal> for the following items:

E-Tender No. & Closing/Opening Date	Item Description
SSI2880P17/P1 08.12.2016	RATE CONTRACT OF BEARING
SDI2821P17/P2 08.12.2016	MAMMOGRAPHY MACHINE
SDI2884P17/P4 08.12.2016	DOCUMENT MANAGEMENT SYSTEM
SDI2789P17/P3 08.12.2016	INDIRECT HEATER PACKAGE

Tender fee (Non-refundable) amount; Period of sale of documents, Bid Closing/Opening date, the complete bid documents and details for purchasing bid documents, participation in e-tenders etc. are available on OIL's e-procurement portal <https://etender.srm.oilindia.in/irj/portal> as well as OIL's website <http://www.oil-india.com/>

All addenda, Corrigenda, time extension etc. to the tenders will be hosted on above website and e-portal and no separate notification shall be issued in the press. Bidders should regularly visit above website and e-portal to keep themselves updated



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. : SDI2789P17 DT: 24.10.2016

Tender Fee : Rs 1,000.00

Bid Security : Applicable

Bidding Type : SINGLE STAGE TWO BID SYSTEM

Tender Type : Open Tender

Bid Closing / Opening on : As mentioned in the e-portal

Performance Security : Applicable

Integrity Pact : Applicable

OIL invites Bids for **PROCUREMENT OF DOUBLE COILED BATH TYPE FIELD INDIRECT HEATER PACKAGE – QTY = 06 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**.

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 = 0374-2807171 , 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.

- 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 RFX Response**.

Special Note:

1.0 Technical and Financial Criteria:

In addition to the general BRC/BEC, following Technical and Financial criteria shall be considered as on the original Bid Closing Date. **(Documentary evidence to be provided along with the bid in Technical RFx -> External Area - > Tender Documents failing which the offer shall be rejected).**

Criteria	Complied / Not Complied. Documentary evidence submitted / not submitted
a) Annual financial turnover of the firm in any of the preceding 3 financial years should not be less than Rs. 210 lakhs.	
b) Net Worth of the firm should be Positive for preceding financial / accounting year.	

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: 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-II.

OR

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

2.0 Vendors having OIL’s User ID & password may pay Tender Fee on-line through OIL’s electronic Payment Gateway upto one week prior to the Bid closing date (or as amended in e-portal).

Vendors who do not have OIL’s User ID & password, may generate User ID & password online by the Vendor by using the link for supplier enlistment given in OIL’s e-tender portal and then pay Tender Fee on-line through OIL’s electronic Payment Gateway upto one week prior to the Bid closing date (or as amended in e-portal).

Alternatively application showing full address/email address with Tender Fee (Non-refundable) of Rs. 1,000.00 in the form of crossed "Payee Account only "Bank Draft/Bankers’ Cheque drawn by Bank and valid for 90 days from the date of issue of the same or in the form of Indian Postal Orders payable to the OIL is to be sent to DGM-Materials, Oil India Limited, P.O. Duliajan, Assam-786602. Application shall be accepted only upto one week prior to the Bid closing date (or as amended in e-portal). The envelope containing the application for participation should clearly indicate “REQUEST FOR ISSUE OF USER ID AND PASSWORD FOR E TENDER NO ...” for easy identification and timely issue of user ID and password. On receipt of requisite tender fee, USER_ID and initial PASSWORD will be communicated to the bidder (through e-mail) and will be allowed to participate in the tender through OIL’s e- Procurement portal. No physical tender documents will be provided. Details of NIT can be viewed using “Guest Login” provided in the e-Procurement portal. The link to e-Procurement portal has been also provided through OIL’s web site www.oil-india.com.

NOTE:

In case of MSE/PSUs/ Govt. Bodies / eligible institutions etc., they shall apply to DGM-Materials, Oil India Limited, P.O. Duliajan, Assam-786602 for waiver of Tender Fee upto one week prior to the Bid closing date (or as amended in e-portal).

3.0 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.

3.1 Please ensure that Technical Bid / all technical related documents related to the tender are uploaded in the Technical RFx Response-> User - > Technical Bid 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.

3.2 The “PRICE BID” must contain the price schedule and the bidder’s commercial terms and conditions. The prices of the items should be quoted in “Conditions Tab”. Details of prices as per Bid format / Commercial bid can be uploaded as Attachment under the attachment option under “Notes & Attachments”.

3.3 A screen shot in this regard is given below. Offer not complying with above submission procedure will be rejected as per Bid Rejection Criteria mentioned in Annexure-CCC.

Display RFX Response:

Go to this Tab "Technical RFX Response" for Uploading "Techno-commercial Unpriced Bid".

Go to this Tab "Notes and Attachments" for Uploading "Priced Bid" files.

RFX Response Number 60006452 RFX Number TEST2 Status Submitted
RFX Owner WIPRO_TEST1 Total Value 0.00 INR RFX Response Version 1

Basic Data | Questions

Event Parameters

Currency: Indian Rupee

Detailed Price Information: Price with Conditions

Terms of Payment: 9010 90% against despatch+10% after receipt

Partners and Delivery Information

Function	Number	Name	Valid from
The table does not contain any data			

On "EDIT" Mode- The following screen will appear. Bidders are advised to Upload "Techno-Commercial Unpriced Bid" and "Priced Bid" in the places as indicated above:

Edit RFX Response:

Bid on "EDIT" Mode

Submit | Read Only | Print Preview | Check | Technical RFX Response | Close | Save | Verify signature

RFX Response Number 60006452 RFX Number TEST2 Status Withdrawn Submission Deadline 13.04.2013 11:00:00 INDIA
RFX Owner WIPRO_TEST1 Total Value 0.00 INR RFX Response Version Number 2 RFX Version Number 5

RFX Information | Items | Notes and Attachments | Conditions | Summary

Area for uploading Techno-Commercial Unpriced Bid*

Notes

Add | Clear

Assigned To	Category	Text Preview
The table does not contain any data		

Area for uploading Priced Bid**

Attachments

Sign Attachment | Add Attachment | Edit Description | Versioning | Delete | Create Qualification Profile

Assigned To	Category	Description	File Name	Version	Processor	Checked
The table does not contain any data						

Note :

* The "Techno-Commercial Unpriced Bid" shall contain all techno-commercial details **except the prices.**

** The "Price bid" must contain the price schedule and the bidder's commercial terms and conditions. For uploading Price Bid, first click on Sign Attachment, a browser window will open, select the file from the PC and click on Sign to sign the Sign. On Signing a new file with extension .SSIG will be created. Close that window. Next click on Add Attachment, a browser window will open, select the .SSIG signed file from the PC and name the file under Description, Assigned to General Data and clock on OK to save the File.

4.0 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.

5.0 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 through 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.

6.0 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.

7.0 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.

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

9.0 **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.

10.0 **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:

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

11.0 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.

12.0 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.

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

14.0 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.

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)

SR MANAGER MATERIALS (IP)

FOR : DGM-MATERIALS

Tender No & Date: SDI2789P17 DT: 24.10.2016**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.

<u>Criteria</u>	Complied / Not Complied. (Remarks if any)
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: <u>1.0 Bidder's Qualification:</u> 1.1 The bidder shall be an Original Equipment Manufacturer (OEM) of the tender item. 1.2 The bidder shall carry out the fabrication work of the tender item by engaging an API 1104 qualified welder. The list of welder(s), who will be engaged for fabrication of the tender item, along with respective welder qualification test report carried out within last 05 years preceding bid closing date of this tender, shall be submitted along with the technical bid. <u>2.0 Bidder's Experience:</u> 2.1 The bidder shall have the experience of successful execution of at least 1 similar purchase order for supply / service contract for fabricating 03 nos of any of the crude oil process equipment as detailed below, for an Oil & Gas Industry, in the last 5 (five) years preceding the bid closing date of this 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 capacity & working pressure 1.0 kg/cm² or above. In this regard, the bidder shall submit the following documents in support of	

successful execution of past supply /contract -

(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.

3.0 Delivery of the items should be completed within 6 months from the date of placement of order.

B) 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 8,40,000.00** in OIL's prescribed format as Bank Guarantee or a Cashier's cheque or Demand Draft in favour of OIL. The Bid Security may be submitted manually in sealed envelope superscribed with Tender no. and Bid Closing date to Head 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 08.07.2017).** Cashier's cheque or Demand Draft shall be valid for minimum 90 days or as per RBI's guidelines, drawn on "Oil India Limited" and payable at Duliajan, Assam

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

The Performance Security shall be in any one of the following forms :

(a) 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.

(b) A Cashier's cheque or Demand Draft with validity of minimum 90 days or as per RBI's guidelines, drawn on "Oil India Limited" and payable at Duliajan, Assam.

The Performance Security for capital nature items like plant and machinery etc. shall be valid for 12 months from the date of commissioning plus 3(three) months or 18 months from the date of shipment/despatch plus 3(three) months whichever concludes earlier. However, for consumables like chemicals, cement, tubular etc. the Performance Security shall be valid for 12 months from the date of shipment/despatch plus 3(three) months.

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). Integrity Pact :

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.

xi). 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.

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.

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, Assam Entry Tax on purchase value will be loaded as per prevailing Govt. of Assam guidelines as applicable on bid closing date. Bidders may check this with the appropriate authority while 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.

-----XXXX-----

TECHNICAL SPECIFICATIONS WITH QUANTITY

Tender No & Date: SDI2789P17 DT: 24.10.2016

	Complied / Not Complied. (Remarks if any)
<u>ITEM NO. 10</u> <u>PROCUREMENT OF DOUBLE COILED BATH TYPE FIELD INDIRECT HEATER – QTY = 06 NOS</u> Double Coiled Bath Type Field Indirect Heater of heating capacity 0.88×10^6 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 : 0.88×10^6 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/025/A(1): Indirect Heater Pilot Burner 2.7 OIL/PDNO/P&D/025/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 :Seamless Carbon Steel Pipe as per ASTM A106 Gr. B/ API 5L Gr. B, 3.3 Coil Fittings : As per ASTM A 234 Gr. WPB or WPC 3.4 Shell Body :As per IS2062 Gr. B Standard 3.5 Coil Flange :As per ASTM 105 3.6 Fastners :As per IS 1364 / ASTM A 307 Standard (For non pressure parts) 3.7 Studs & Nuts :As per ASTM A193 Gr. B7 & ASTM A194 Gr. 2H Standard 3.8 Fuel Gas piping system : As per ASME B31.3 Standard	

3.9 Welding :As per ASME Section IX.

3.10 Design, fabrication & Shop testing : As per API Spec 12K

3.11 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. of 3/4" studs with nuts (1 each at one of the legs and the vessel) to be welded 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" (101.6 mm)NB x 0.6 Inches (15.24mm) Wall Thickness

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, 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

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

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)

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

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

- i) 101.6 mm (4") Eclipses Model NS - 160 or equivalent mixer assembly - 02 Nos.
- ii) 101.6 mm (4") Eclipses 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)

d) 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/025/A (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 / Warea / Ashcroft/ Icon

b) Level Gauge: The Level gauge shall be of the following specification: (Qty: 1 No.)

- i) Type: Reflex Type
- ii) Connection Size: 1/2"
- 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

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: 20 psig
 - iv) Supply: 20 psig
 - v) Type: Float less pneumatic switch with differential pilot (0-500 mm WC).
- Make: Kimray / Fisher

e) Additional 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: 1/2" 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

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: $\pm 1\%$ of reading
vi) End Connection: 1/2" NPT
vii) Isolation Valves: Required (Needle Valve) as per gauge rating $\pm$
Make: Wika / Odin / Waree / Ashcroft/ Icon/Noshok/Mdanial

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 gas 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
ii) 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 Earthing Clamp & cable to connect Portable Remote Igniter with Flame Arrestor Body
Make & Model : INVALVO 81001654 or equivalent

The items [A], [B], & [C] mentioned above shall be preferably from the same vendor of the following make: Chentronics (sureSPARK, Model: BD-5) / GIE / GBA Flare Systems / Meggitt / Combustex-Canalta Controls / ACL / Sigma Controls Systems/ Smitsvonk/ G.I.E. S.r.l./ FMC Invalco

[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

[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" Line pipe Threaded / Flanged Make : Invalco/ Fisher/ Samson/ Forbes Marshall/Combustex/Kimray/MIL/Brightech/Emerson/Murphy. [F] Indicating Type Temperature 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 4196B or Fisher 4196C or Samson Type 3430 or ABB 440 R Series [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 [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 [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 [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	
---	--

[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 : Invalco /Samson/ Fisher/ Kimray/Norgen

[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

[M] Pressure gauge in controller gas supply line after the regulator: (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

[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

[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 compressed natural gas as servo supply.
- 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 provided for making placard in the area where its operation would be carried out.

TENDER SPECIAL NOTES:

i) Suppliers are to note that the drawing supplied by us 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 us for approval along with Quality Assurance Plan (QAP) prior to the commencement of manufacture/fabrication of the heaters.

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

iii) All the welding shall be done as per ASME section IX . Suppliers shall confirm that all coil and shell welding will be done by welders who are qualified under ASME boiler and pressure vessel code section- IX regulations. Documentary evidence in this regard shall be supplied by the bidder along with the bid.

iv) Stress relieving operations are to be conducted in automatic temperature controlled furnace. The Bidder shall confirm the same in their technical Bid.

v) 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.

vi) X- Ray of all welded joints, stress relieving of the pressure coils and fire tubes will be required. The coils should be tested 100% radiographically. The Bidder shall confirm the same in their technical Bid.

vii) 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.

viii) The following documents shall be forwarded with the technical bid:

- a) Process and Instrumentation (P&ID) diagrams
- b) 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 make and model.
- i) Make/ Models of all the bought-out items along with technical literature, GAD etc.

ix) 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

x) 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.

xi) 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.

xii) 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.

xiii) 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. xiv) Marking : OIL's logo, Purchase order No. and manufacturers name shall be die stamped in the shell of the heater. xv) 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 successful commissioning, 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 notwithstanding inspection, payment for and acceptance of the goods. xvi) The Bidder shall submit Technical specification, Tender notes & BRC/BEC Compliance Check List along with technical bid as per attached Annexure-I (Tech Specs) , II(Tender notes) & Annexure III(BRC/BEC).	
--	--

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 Tender No. **SDI2789P17**. 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 Organisation "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 he/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 cartelisation 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.

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

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 3 % of the value of the offer or the amount equivalent to Earnest Money Deposit/Bid Security, whichever is higher.
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 5% of the contract value or the amount equivalent to Security Deposit/Performance Bank Guarantee, whichever is higher.
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 Bidder/Contractor undertakes to demand from all subcontractors a commitment in conformity with this Integrity Pact, and to submit it to the Principal before contract signing.

2. The Principal will enter into agreements with identical conditions as this one with all Bidders, Contractors and Subcontractors.
3. The Principal will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

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 (three in number depending on the size of the contract) (to be decided by the Chairperson of the Principal)

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.
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.
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 intentions.

R BARMAN
SR MANAGER MATERIALS (IP)

For the Principal

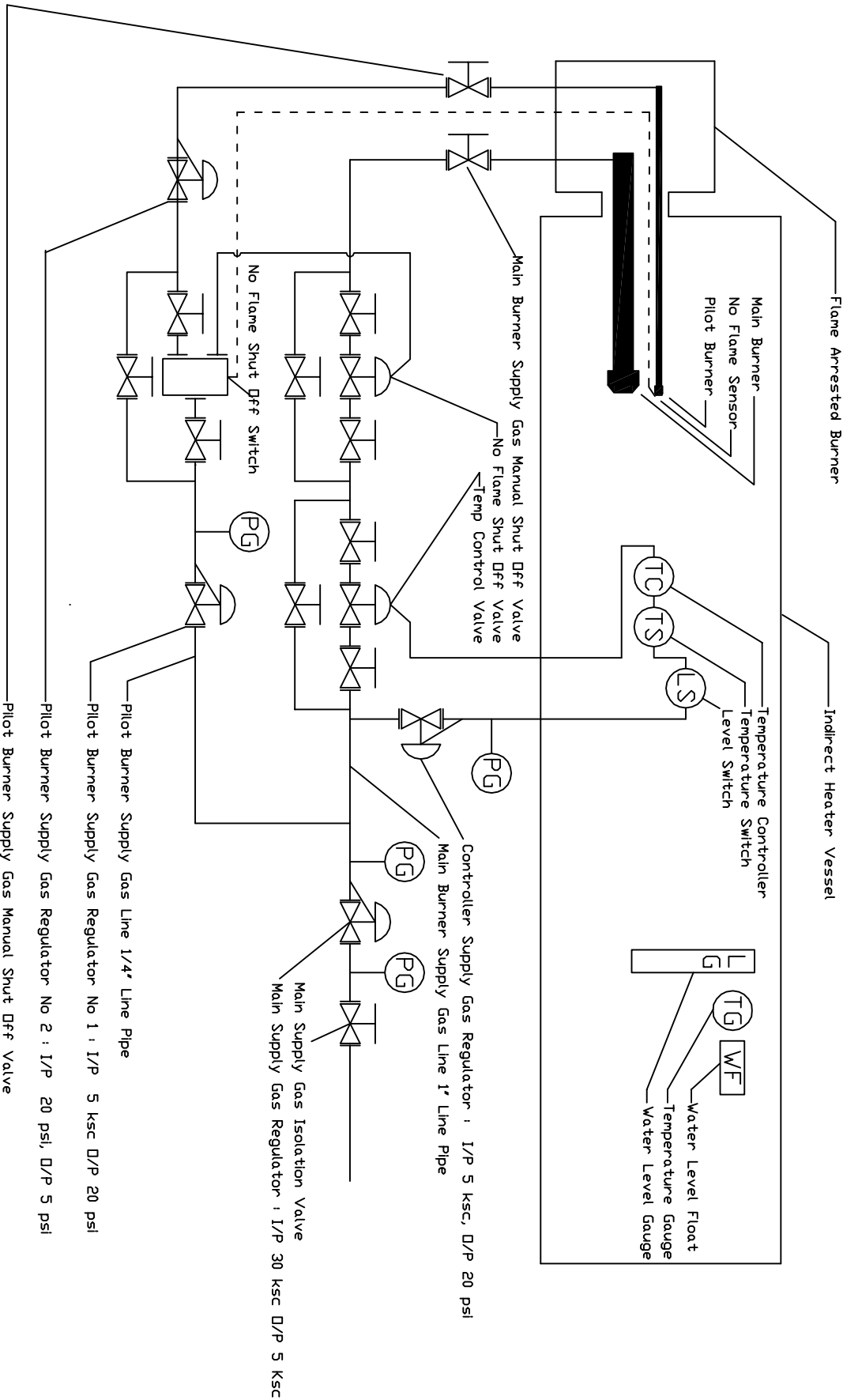
For the Bidder/Contractor

Place. Duliajan.

Witness 1 :

Date 25.10.2016 .

Witness 2 :|



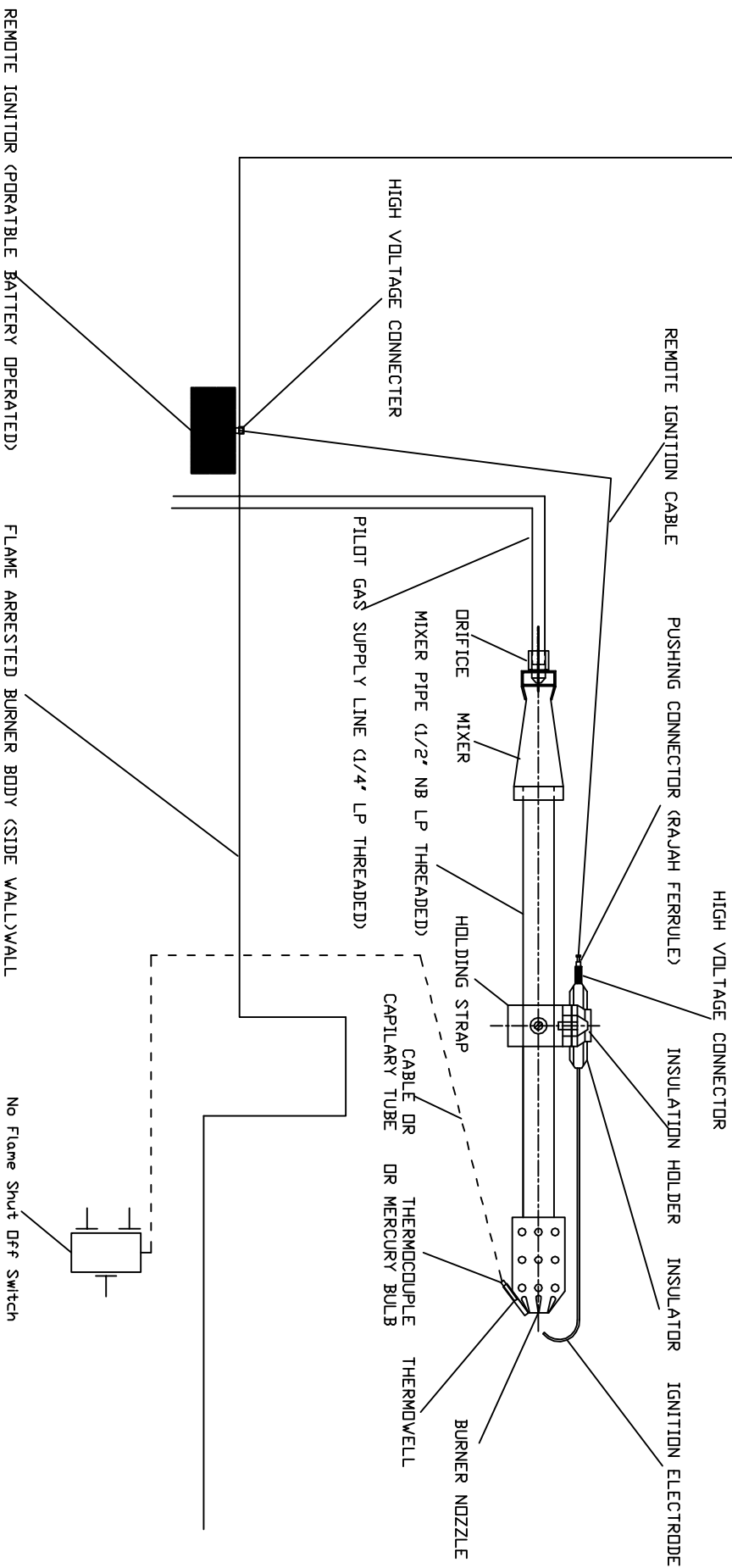
NOTES : 1) NOT TO SCALE
2) REFER SPECIFICATION
FOR ITEM DESCRIPTION

OIL INDIA LIMITED
PROD (OIL) DEPTT.
DULAJAN 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 SPECIFICATION FOR
ITEM DESCRIPTION

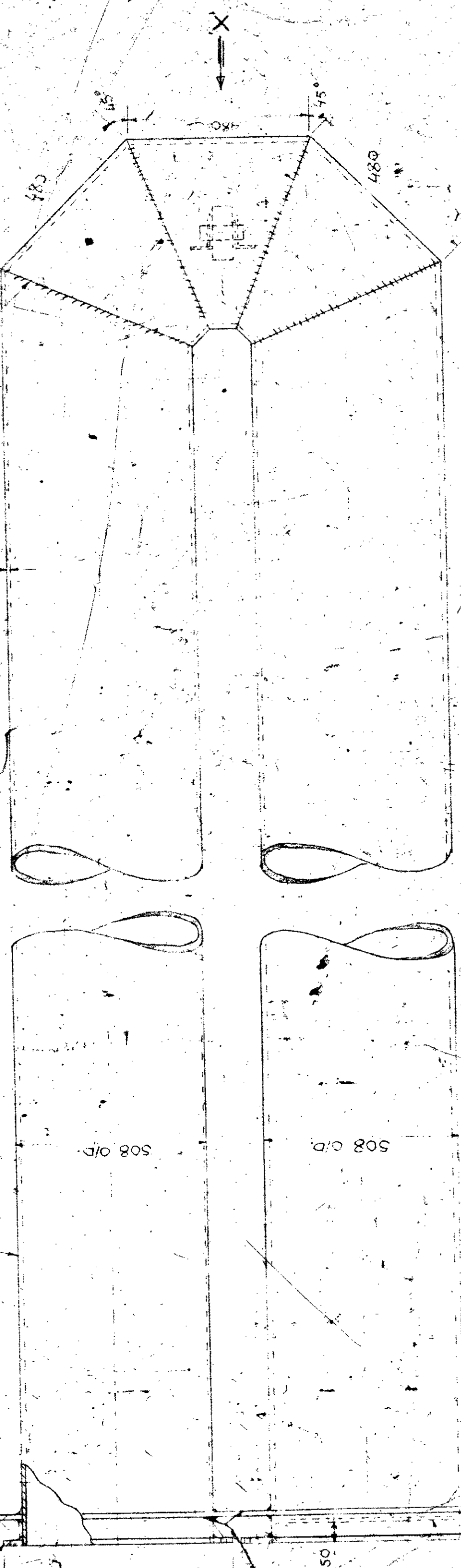
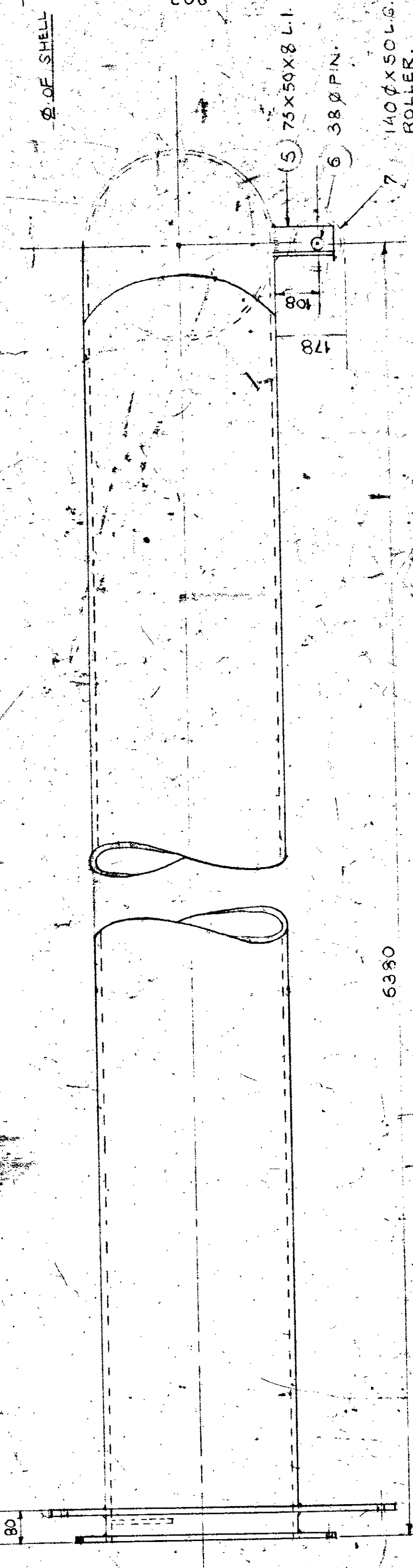
OIL INDIA LIMITED
PROD (OIL) DEPTT.
DULIAJAN 786602

INDIRECT HEATER :
PILOT BURNER WITH
REMOTE IGNITION

DR NO

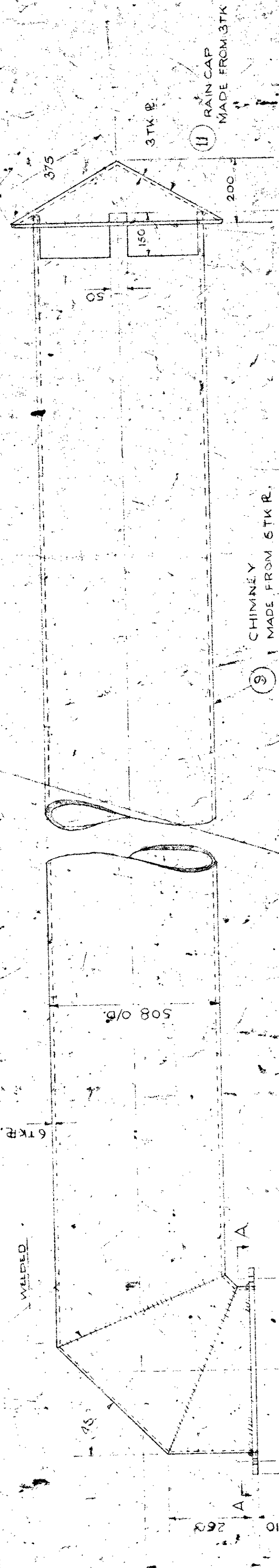
OIL/PDNO/P&D/025/A-Pg 1 of 2

DRG NO. CIV



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 RELIEVED AFTER COMPLETE WELDING.

PLAN
ALL WELDED CONSTRUCTION
DETAIL OF FIRE TUBE



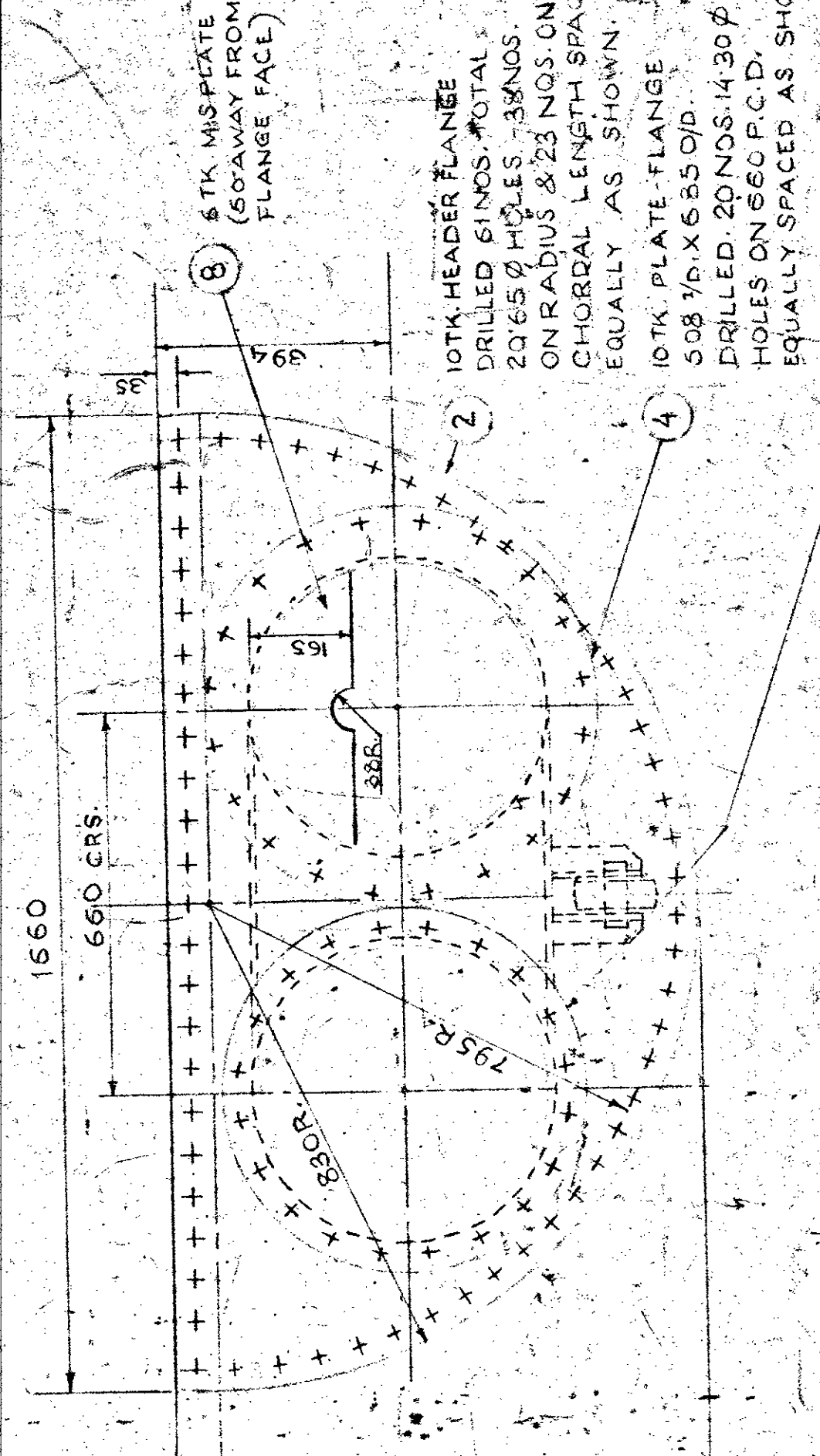
10TK PLATE FLANGE
20 NOS. 14300 HOLES
ON 558 P.C.D. EQUALLY
SPACED AS SHOWN.

DETAIL OF CHIMNEY

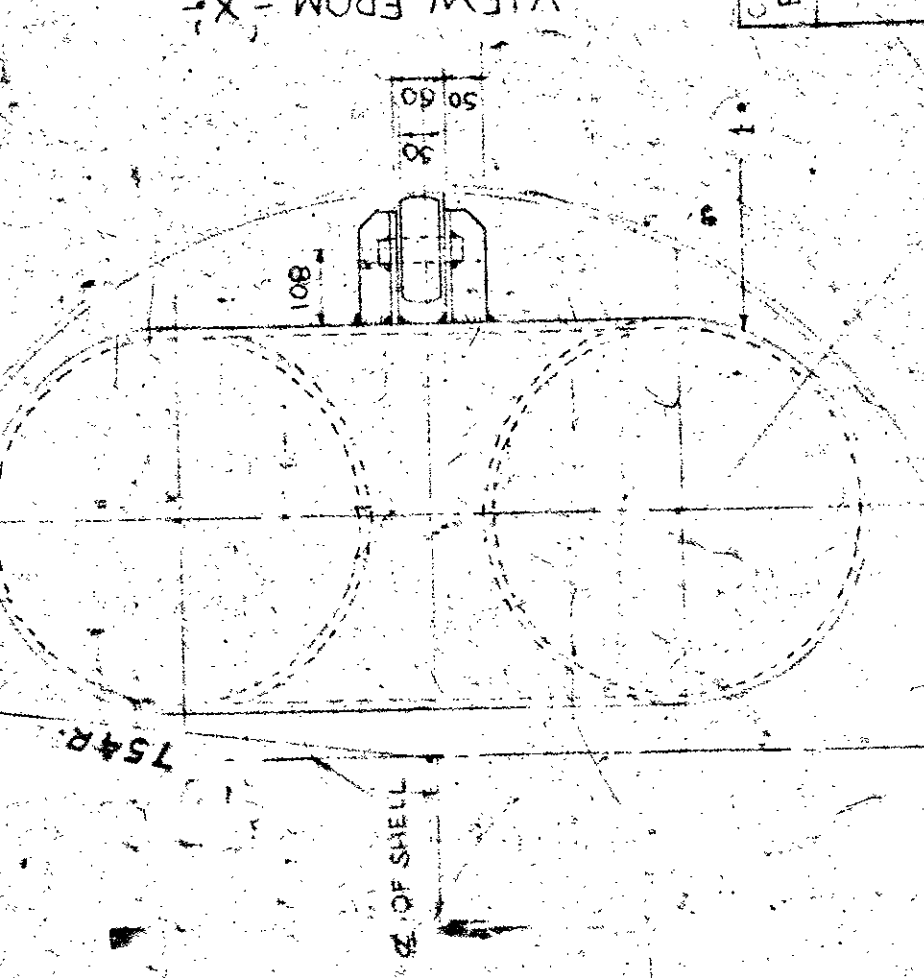
ALL WELDED CONSTRUCTIONS

SUPERSEDES: SK NO. OIL/1610

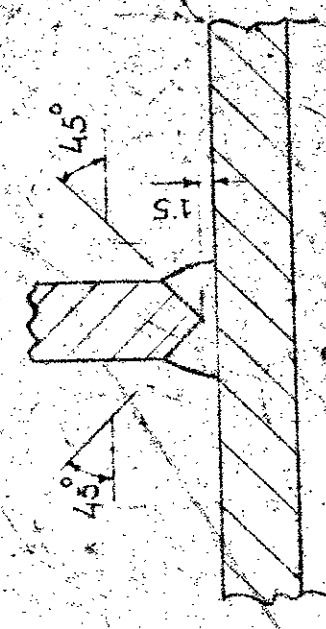
FOR GEN. ARRGT. REFER TO DRG. NO. OIL/2670.



WELDING DETAILS OF PIPE
WELDING DETAILS OF FLANGES



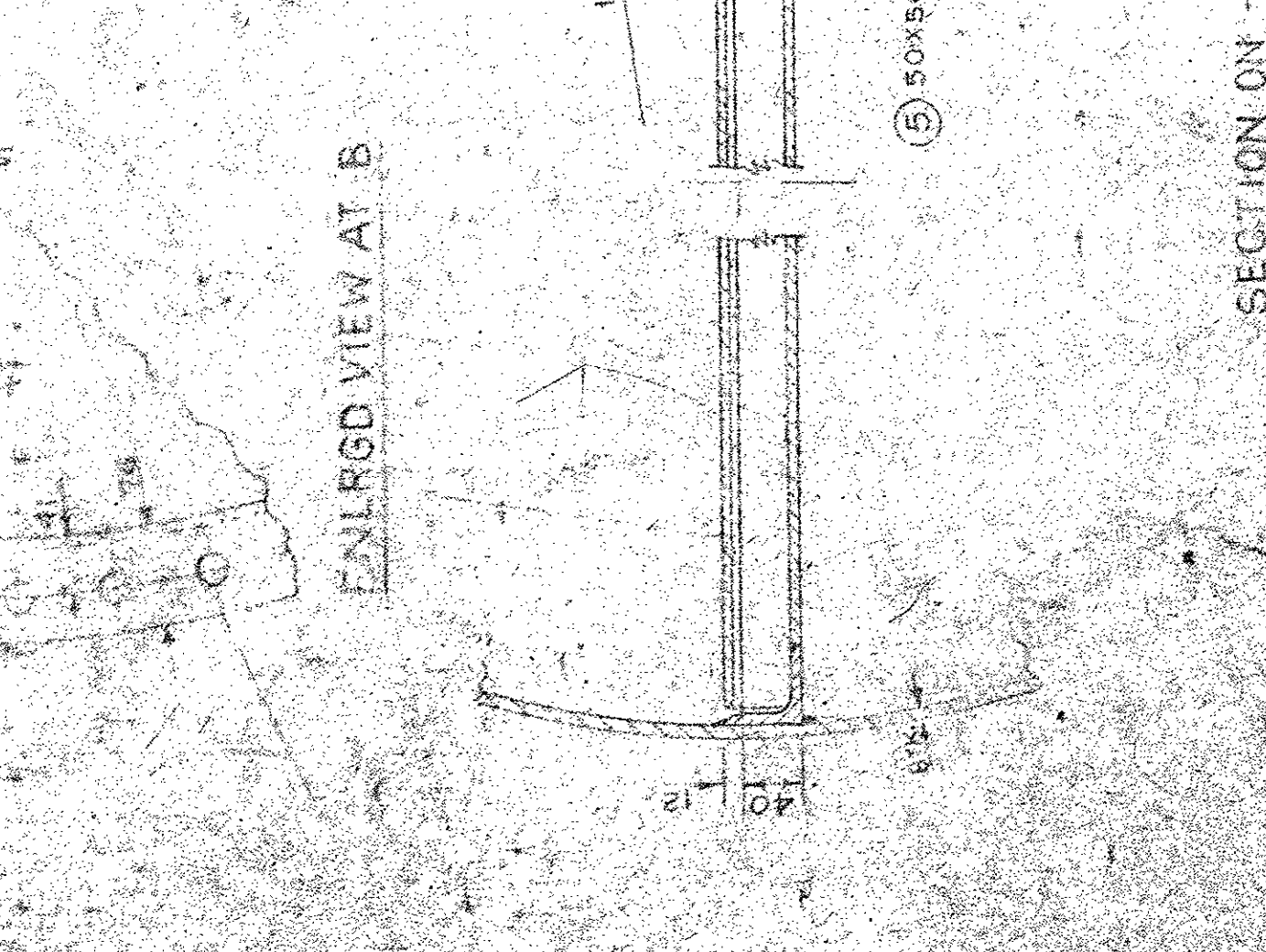
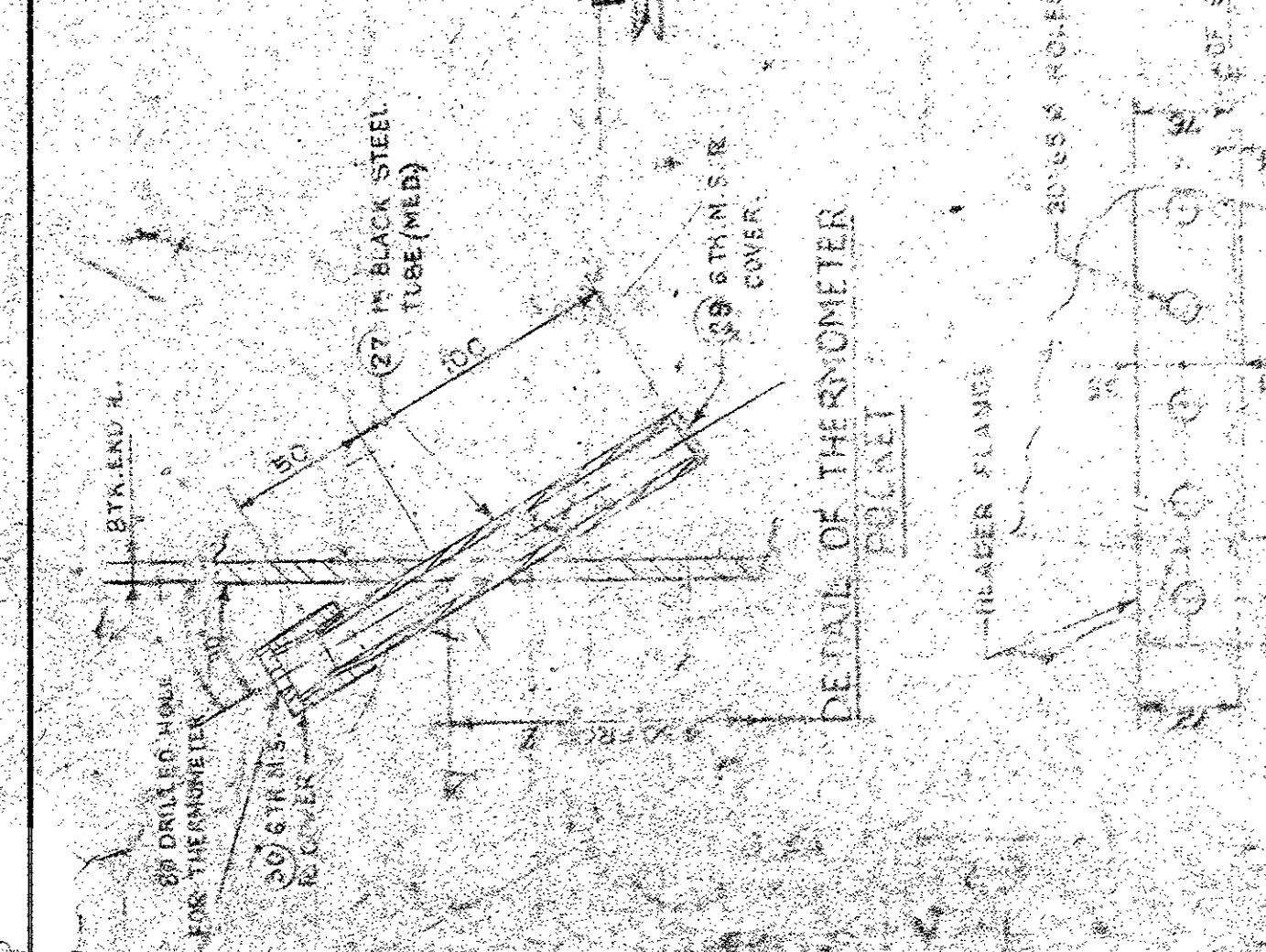
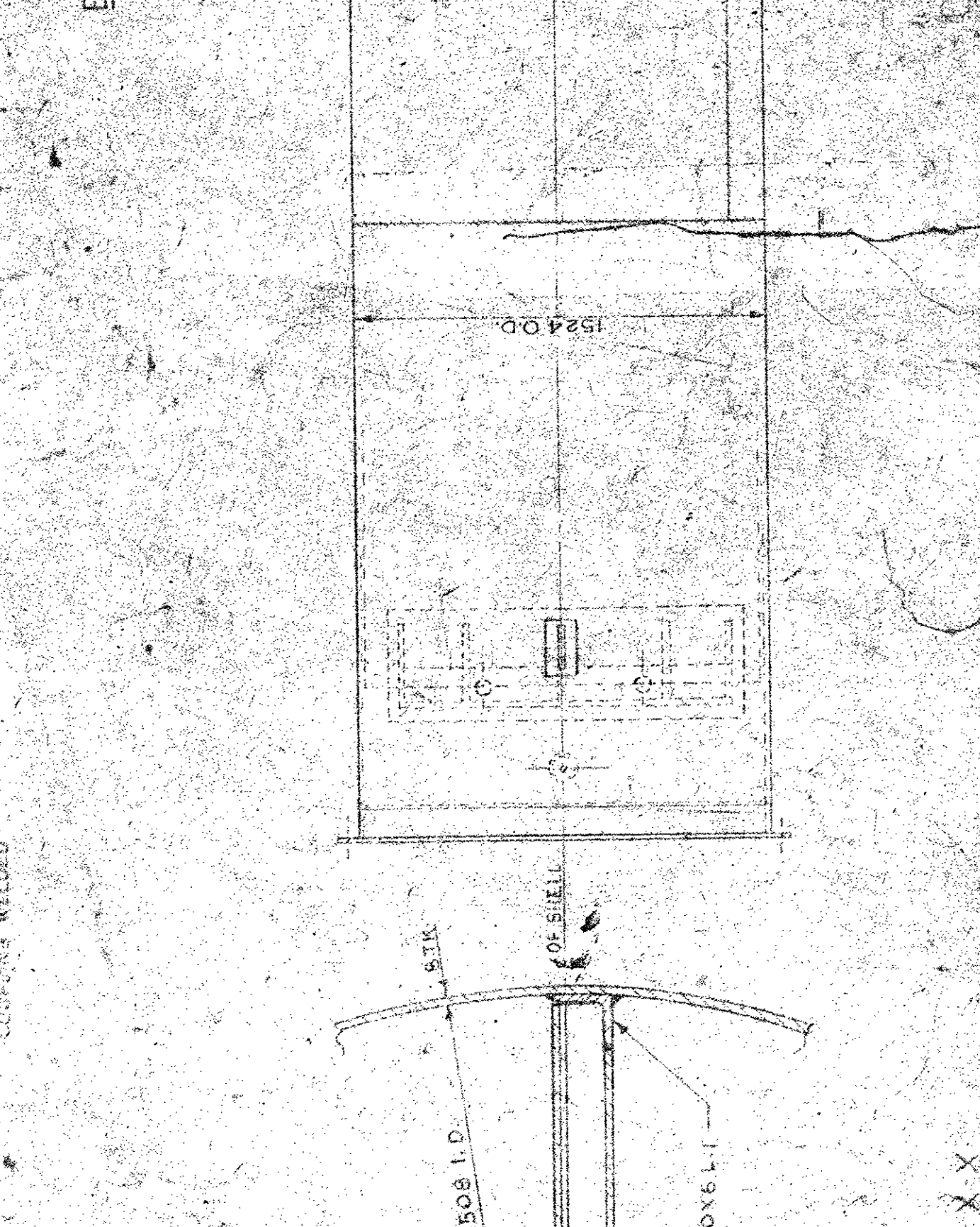
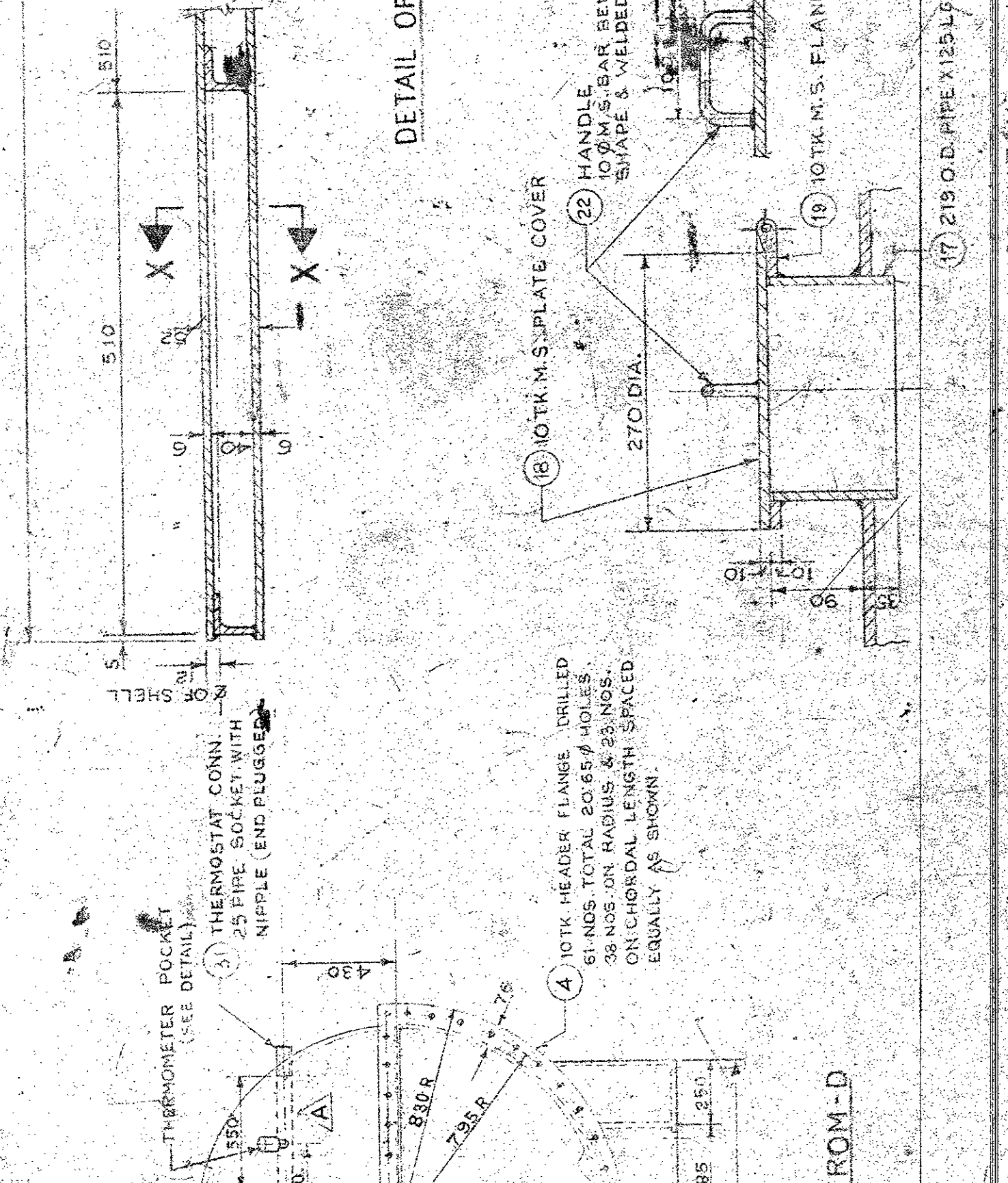
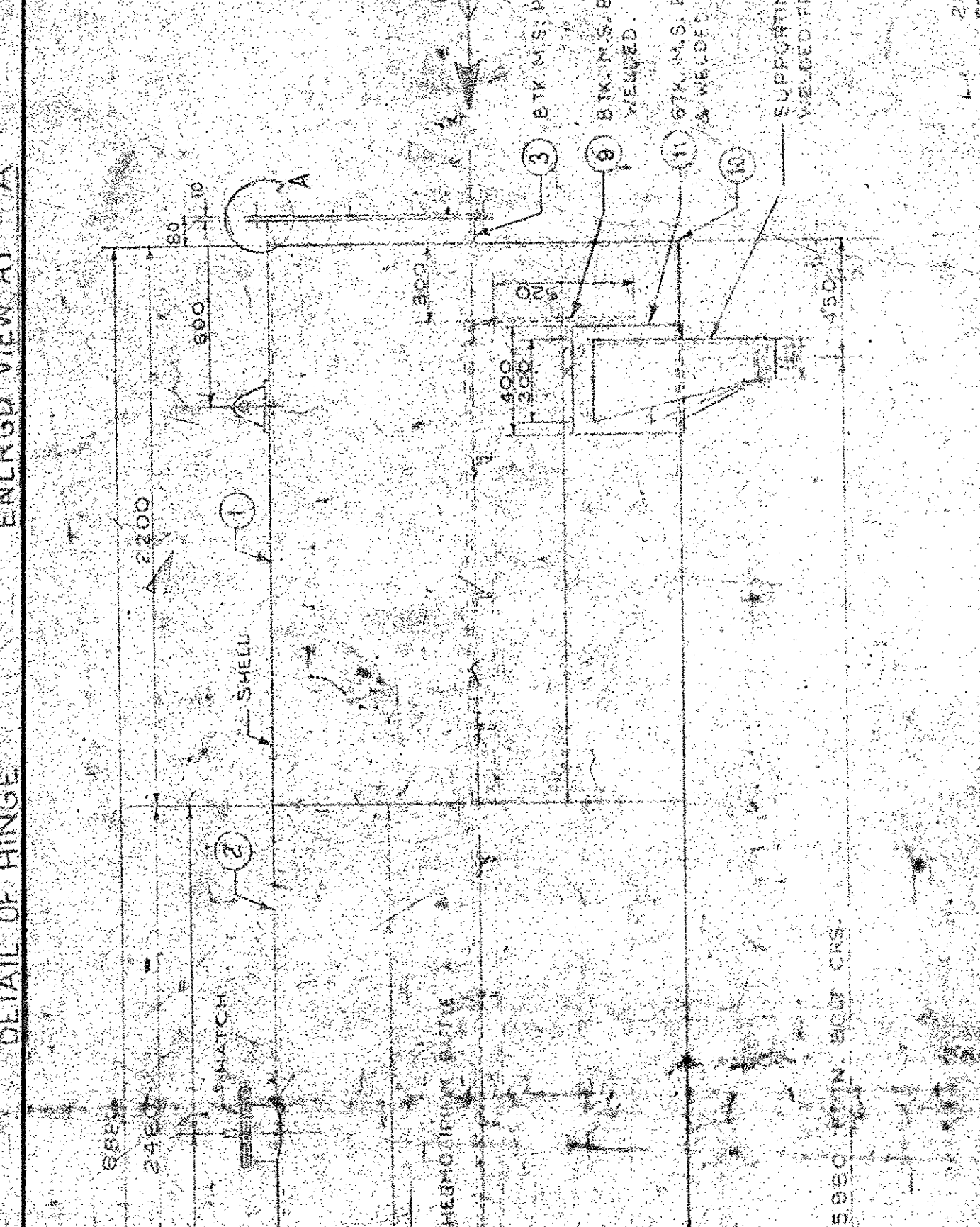
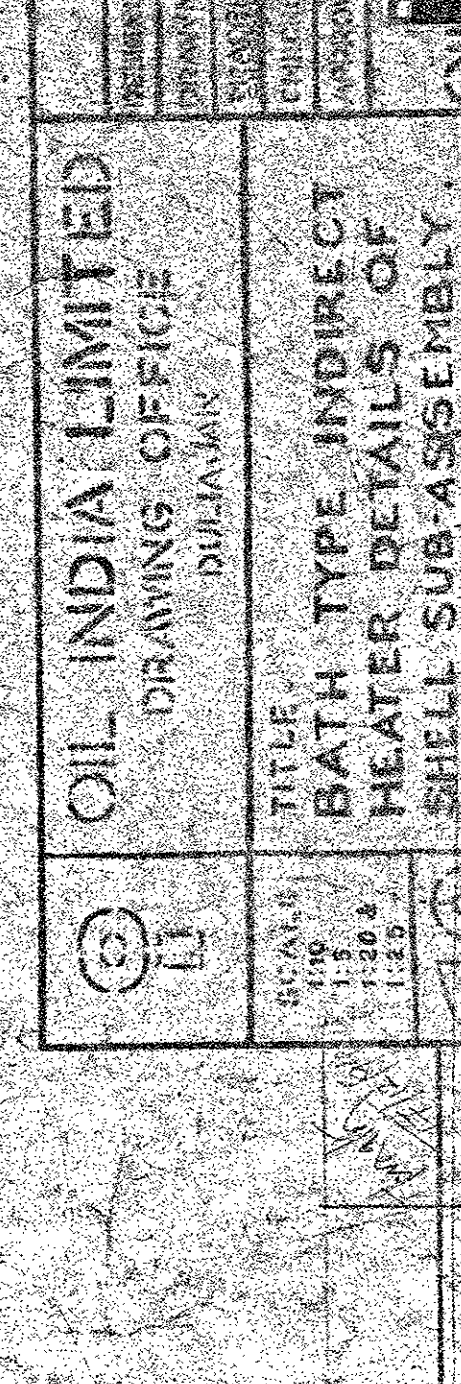
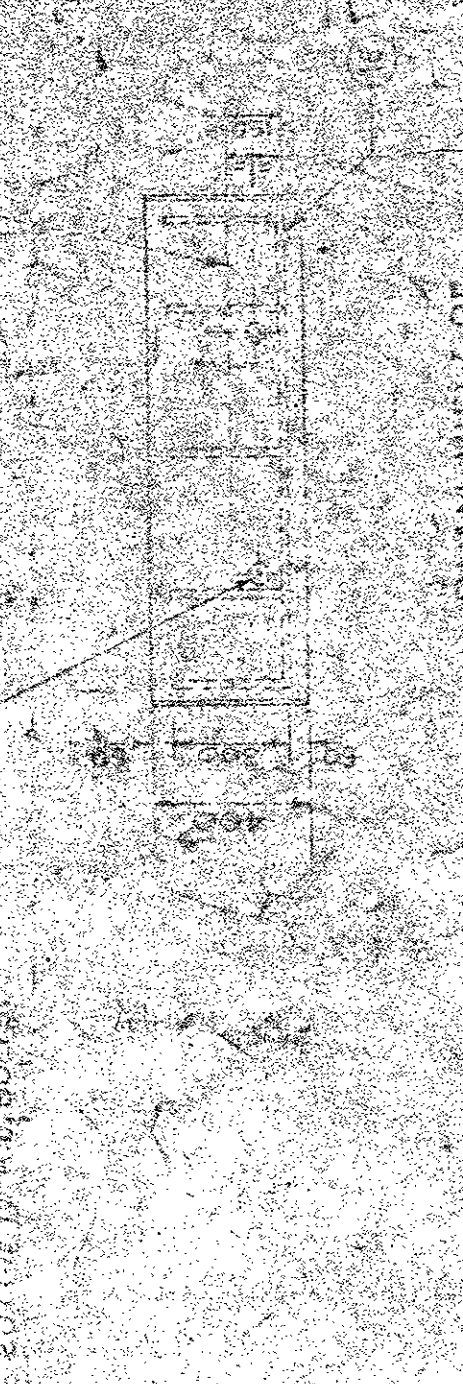
MATERIAL LIST				DRG. NO. OIL/2672
COL. NO.	ITEM NO.	DESCRIPTIONS	DRG. REF.	CAT. NO. / MAJ. SUPPLIERS REF.
A	1	SEAMLESS PIPE 508 Ø/D		API 5L GR 5
	2	WALL THICKNESS 12.70 mm		IS: 226
B	1	HEADER FLANGE 10TK R.		
	2	FLANGE PLATE 10TK X 508 Ø/D X 610 CB		
C	1	FLANGE PLATE 10TK X 508 Ø/D X 585 Ø/D		
	2	75 X 50 X 8 L.L. X 150 LG.		
D	1	M.S. PLATE 165 X 6TK X 465 LG.		
	2	M.S. ROLLER 140 Ø X 50 LG.		
E	1	PIPE 508 Ø/D MADE FROM 16TK R.		
	2	FLANGE PLATE 10TK X 508 Ø/D X 610 Ø/D		
F	1	RAIN CAP - MADE FROM 16TK R.		
	2	COL-A ASSEMBLED TOGETHER MAKES A COMPLETE FIRE TUBE		
G	1	COL-B ASSEMBLED TOGETHER MAKES A COMPLETE FIRE TUBE		
	2	COL-B ASSEMBLED TOGETHER MAKES A COMPLETE CHIMNEY		



WELDING DETAILS OF
HEADER PLATE WITH FIRE TUBE

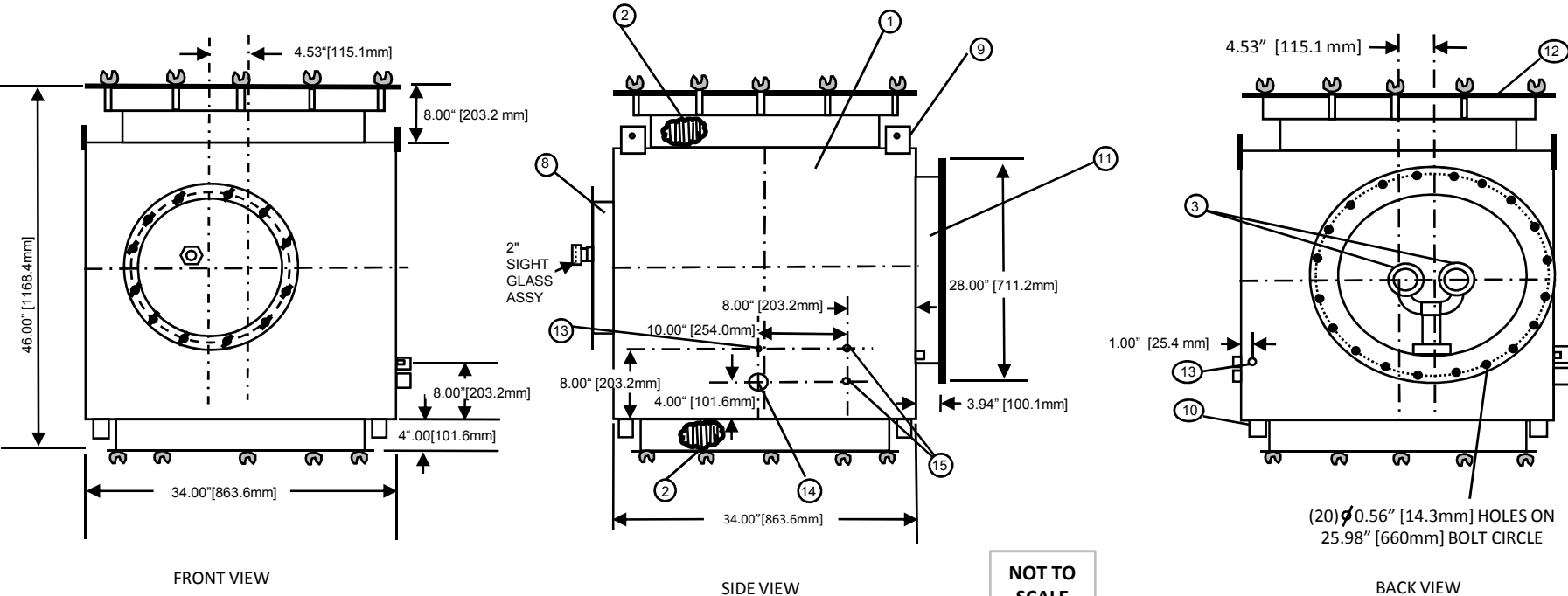
OIL INDIA LIMITED		DRAWING OFFICE		DULAIAN	
SCALE	TITLE	DESIGNED	DRAWN	CHECKED	APPROVED
1:10	BATH TYPE INDIRECT HEATER DETAILS OF FIRE TUBE AND CHIMNEY				
RETRACED ON 24.9.83		DRG. NO. OIL/2672			

COL. W. ASSEMBLED TOGETHER MAKES A COMPLETE SHELL AND PARTIAL



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	PILOTPPIPE 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



Technical specification check list for evaluation

<u>NIT clause no</u>	<u>Technical specification as per NIT</u>	<u>Technical Offer by the Bidder</u>	<u>Compliance by Bidder</u>	
			<u>Indicate Complied or Deviation if any</u>	<u>Indicate Corresponding page ref. of unpriced bid or Comments if any</u>
<u>General</u>	Double Coiled Bath Type Field Indirect Heater of heating capacity 0.88×10^6 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/cm ² pressure, generally as per OIL drawings - <u>OIL /2670/A, OIL/5303, OIL/2672./A, OIL/ 2051/C , OIL/PDNO/P&D/001/01 .</u>			
<u>1.0</u>	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 : 0.88×10^6 watts (3.0 MM BTU/HR.) 4. Coil operating pressure : 105.46 kg/cm ² (1500 psig) 5. Bath medium : Water 6. Shell Operating Pressure : Water Fill-up 7. Water bath temp : 90 Deg. C			
<u>2.0</u>	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/025/A(1): Indirect Heater Pilot Burner 7. OIL/PDNO/P&D/025/A(2) : P &ID diagram, Burner control			

<u>NIT clause no</u>	<u>Technical specification as per NIT</u>	<u>Technical Offer by the Bidder</u>	<u>Compliance by Bidder</u>	
			<u>Indicate Complied or Deviation if any</u>	<u>Indicate Corresponding page ref. of unpriced bid or Comments 1 if any</u>
<u>3.0</u>	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 :Seamless Carbon Steel Pipe as per ASTM A106 Gr. B/ API 5L Gr. B, 3.3 Coil Fittings : As per ASTM A 234 Gr. WPB or WPC 3.4 Shell Body :As per IS2062 Gr. B Standard 3.5 Coil Flange :As per ASTM 105 3.6 Fastners :As per IS 1364 / ASTM A 307 Standard (For non pressure parts) 3.7 Studs & Nuts :As per ASTM A193 Gr. B7 & ASTM A194 Gr. 2H Standard 3.8 Fuel Gas piping system : As per ASME B31.3 Standard 3.9 Welding :As per ASME Section IX. 3.10 Design, fabrication & Shop testing : As per API Spec 12K 3.11 Shell nameplate : As Per API 12K			
<u>4.0</u>	<u>4.0 Shell:</u> Shell will conform to all the requirements and dimensions of OIL Drawing no: <u>OIL/5303</u> 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. of 3/4" studs with nuts (1 each at one of the legs and the vessel) to be welded for electrical earthing.			

<u>NIT clause no</u>	<u>Technical specification as per NIT</u>	<u>Technical Offer by the Bidder</u>	<u>Compliance by Bidder</u>	
			<u>Indicate Complied or Deviation if any</u>	<u>Indicate Corresponding page ref. of unpriced bid or Comments 1 if any</u>
<u>5.0</u>	<u>5.0 Coils (Seamless):</u> 5.1 No. of Coil : 2 (two) sets 5.2 No. of Pass: 8 (Eight) passes for each coil. 5.3 Coil Size : 4" (101.6 mm)NB x 0.6 Inches (15.24mm) Wall Thickness 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 %			
<u>6.0</u>	<u>6.0 Coil End Connection:</u> 6.1 Coil End : Flanged, 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.			
<u>7.0</u>	<u>7.0 Fire Tube & Chimney:</u> Fire tube & Chimney shall conform all the requirements and dimensions of OIL Drawing no: OIL/2672/A & designed natural draft			
<u>8.0</u>	<u>8.0 Fuel Scrubber:</u> 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.			

<u>NIT clause no</u>	<u>Technical specification as per NIT</u>	<u>Technical Offer by the Bidder</u>	<u>Compliance by Bidder</u>	
			<u>Indicate Complied or Deviation if any</u>	<u>Indicate Corresponding page ref. of unpriced bid or Comments 1 if any</u>
<u>8.0</u>	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)			
<u>8.0</u>	8.3 Operating pressure of fuel scrubber: 30 kg/sq cm			
<u>8.0</u>	8.4 Hydraulic Test Pressure of fuel scrubber: 1.5 times the maximum working pressure i.e. 45 kg/cm2 (640 psig)			
<u>9.0</u>	<u>9.0 Flame Arrested Burner & Accessories:</u> Standard flame arrestor, Aluminium box type suitable for offered Bath Type Indirect Heater of following specification: <u>a)Make: Flamco Or Wenko</u> 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) <u>Reference Drawing no: OIL/2672./A (Details of Fire Tube and Chimney)</u>			

<u>NIT clause no</u>	<u>Technical specification as per NIT</u>	<u>Technical Offer by the Bidder</u>	<u>Compliance by Bidder</u>	
			<u>Indicate Complied or Deviation if any</u>	<u>Indicate Corresponding page ref. of unpriced bid or Comments 1 if any</u>
<u>9.0</u>	c) Main Burner Assembly : Each flame arrestor should be complete with main burner assembly as below: i) 101.6 mm (4") Eclipses Model NS - 160 or equivalent mixer assembly - 02 Nos. ii) 101.6 mm (4") Eclipses 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 <u>Reference Drawing no: . OIL/PDNO/P&D/001/01</u> <u>(Details of flame Arrestor for Indirect Heater)</u>			
<u>9.0</u>	d) Pilot Burner Assembly: Each flame arrestor should be complete with pilot burner assembly as detailed in 10.3.2 (Pilot Burner Assembly) <u>Reference Drawing no: . OIL/PDNO/P&D/025/A</u> <u>(Details of pilot burner for Indirect Heater)</u>			

<u>NIT clause no</u>	<u>Technical specification as per NIT</u>	<u>Technical Offer by the Bidder</u>	<u>Compliance by Bidder</u>	
			<u>Indicate Complied or Deviation if any</u>	<u>Indicate Corresponding page ref. of unpriced bid or Comments 1 if any</u>
<u>10.1</u>	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.			
<u>10.1</u>	<u>10.1 Instruments to be mounted on Shell</u> 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			
<u>10.1</u>	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) <u>Make: Pratolina/Levcon/Daniel/Chemtrol</u>			

<u>NIT clause no</u>	<u>Technical specification as per NIT</u>	<u>Technical Offer by the Bidder</u>	<u>Compliance by Bidder</u>	
			<u>Indicate Complied or Deviation if any</u>	<u>Indicate Corresponding page ref. of unpriced bid or Comments if any</u>
<u>10.1</u>	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.			
<u>10.1</u>	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: 20 psig iv) Supply: 20 psig v) Type: Float less pneumatic switch with differential pilot (0-500 mm WC). Make: Kimray / Fisher			
<u>10.1</u>	e) Additional 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.			
<u>10.2</u>	<u>10.2 Instruments to be provided for mounting on Coil Inlet & Outlet:</u> 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 / Warea / Ashcroft/ Icon			

<u>NIT clause no</u>	<u>Technical specification as per NIT</u>	<u>Technical Offer by the Bidder</u>	<u>Compliance by Bidder</u>	
			<u>Indicate Complied or Deviation if any</u>	<u>Indicate Corresponding page ref. of unpriced bid or Comments 1 if any</u>
10.2	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: $\pm 1\%$ of reading vi) End Connection: 1/2" NPT vii) Isolation Valves: Required (Needle Valve) as per gauge rating$\pm$ Make: Wika / Odin / Waree / Ashcroft/ Icon/Noshok/Mdanial			
10.3 .1	<u>PNEUMATIC BURNER CONTROL SYSTEM:</u> <u>10.3.1 Control Philosophy:</u> <u>The Indirect Heaters shall be equipped with the pneumatic control system to carry out the following functions:</u> a) A Portable Hand-held High Energy battery operated remote Igniter shall be used to ignite the pilot burner remotely. All the systems for this remote ignition shall be in Flame-proof enclosure.			
10.3.1	b) The main burner Manual Shut-off valve shall be opened only after establishment of the pilot burner flame, to prevent backfire.			
10.3.1	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).			

<u>NIT clause no</u>	<u>Technical specification as per NIT</u>	<u>Technical Offer by the Bidder</u>	<u>Compliance by Bidder</u>	
			<u>Indicate Complied or Deviation if any</u>	<u>Indicate Corresponding page ref. of unpriced bid or Comments 1 if any</u>
10.3.1	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 gas 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.			
10.3.1	e) Temperature Control of the water bath shall be through Temperature Indicating Controller (TIC) and Temperature Control valve (TCV)			
10.3.2(A)	<u>10.3.2 Bill of Material for Burner Control System</u> [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) 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) 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 .			

<u>NIT clause no</u>	<u>Technical specification as per NIT</u>	<u>Technical Offer by the Bidder</u>	<u>Compliance by Bidder</u>	
			<u>Indicate Complied or Deviation if any</u>	<u>Indicate Corresponding page ref. of unpriced bid or Comments 1 if any</u>
10.3.2(A)	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 : INVALIDCO, RHSB Pilot burner, 48729563 or equivalent			
10.3.2(B)	[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 : INVALIDCO 49001179 or equivalent			
10.3.2(B)	f) Insulator i) Function : To provide isolation between the ignition electrode and the body of the pilot burner ii) Insulation: It should have necessary CERAMIC insulation. Make & Model INVALIDCO 46001175 or equivalent			
10.3.2(B)	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 : INVALIDCO 46002045 or equivalent.			

<u>NIT clause no</u>	<u>Technical specification as per NIT</u>	<u>Technical Offer by the Bidder</u>	<u>Compliance by Bidder</u>	
			<u>Indicate Complied or Deviation if any</u>	<u>Indicate Corresponding page ref. of unpriced bid or Comments 1 if any</u>
10.3.2(B)	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) 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			
10.3.2(B)	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) 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			

<u>NIT clause no</u>	<u>Technical specification as per NIT</u>	<u>Technical Offer by the Bidder</u>	<u>Compliance by Bidder</u>	
			<u>Indicate Complied or Deviation if any</u>	<u>Indicate Corresponding page ref. of unpriced bid or Comments 1 if any</u>
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 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 Earthing Clamp & cable to connect Portable Remote Igniter with Flame Arrestor Body Make & Model : INVALVO 81001654 or equivalent			
General notes for 10.3.2, A,B & C	<i>The items [A], [B], & [C] mentioned above shall be preferably from the same vendor of the following make: Chentronics (sureSPARK, Model: BD-5) / GIE / GBA Flare Systems / Meggitt / Combustex-Canalta Controls / ACL / Sigma Controls Systems/ Smitsvonk/ G.I.E. S.r.l./ FMC Invalco</i>			
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			

<u>NIT clause no</u>	<u>Technical specification as per NIT</u>	<u>Technical Offer by the Bidder</u>	<u>Compliance by Bidder</u>	
			<u>Indicate Complied or Deviation if any</u>	<u>Indicate Corresponding page ref. of unpriced bid or Comments 1 if any</u>
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 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" Line pipe Threaded / Flanged Invalco/ Fisher/ Samson/ Forbes Marshall/Combustex/Kimray/MIL/Brightech/Emerson/ Murphy.			
10.3.2(F)	[F] Indicating Type Temperature 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 4196B or Fisher 4196C or Samson Type 3430 or ABB 440 R Series			

<u>NIT clause no</u>	<u>Technical specification as per NIT</u>	<u>Technical Offer by the Bidder</u>	<u>Compliance by Bidder</u>	
			<u>Indicate Complied or Deviation if any</u>	<u>Indicate Corresponding page ref. of unpriced bid or Comments 1 if any</u>
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			
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			
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			
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			
10.3.2(K)	[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 : Invalco /Samson/ Fisher/ Kimray/Norgen			

<u>NIT clause no</u>	<u>Technical specification as per NIT</u>	<u>Technical Offer by the Bidder</u>	<u>Compliance by Bidder</u>	
			<u>Indicate Complied or Deviation if any</u>	<u>Indicate Corresponding page ref. of unpriced bid or Comments 1 if any</u>
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			
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			
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			
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 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.			

<u>NIT clause no</u>	<u>Technical specification as per NIT</u>	<u>Technical Offer by the Bidder</u>	<u>Compliance by Bidder</u>	
			<u>Indicate Complied or Deviation if any</u>	<u>Indicate Corresponding page ref. of unpriced bid or Comments 1 if any</u>
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.			

Annexure II

Tender special notes:

<u>NIT claus e no</u>	<u>Technical specification as per NIT</u>	<u>Bidder's Response</u>	<u>Compliance by Bidder</u>	
			<u>Indicate Complied or Deviation if any</u>	<u>Indicate Corresponding page ref. of unpriced bid or Comments if any</u>
<u>i</u>	i) Suppliers are to note that the drawing supplied by us 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 us for approval along with Quality Assurance Plan (QAP) prior to the commencement of manufacture/fabrication of the heaters.			
<u>ii</u>	ii) The heaters should be shop constructed and tested as per API Std. 12K (latest revision).			
<u>iii</u>	iii) All the welding shall be done as per ASME section IX . Suppliers shall confirm that all coil and shell welding will be done by welders who are qualified under ASME boiler and pressure vessel code section- IX regulations. Documentary evidence in this regard shall be supplied by the bidder along with the bid.			
<u>iv</u>	iv) Stress relieving operations are to be conducted in automatic temperature controlled furnace. The Bidder shall confirm the same in their technical Bid.			
<u>v</u>	v) 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.			

<u>NIT clause no</u>	<u>Technical specification as per NIT</u>	<u>Bidder's Response</u>	<u>Compliance by Bidder</u>	
			<u>Indicate Complied or Deviation if any</u>	<u>Indicate Corresponding page ref. of unpriced bid or Comments if any</u>
<u>vi</u>	vi) X- Ray of all welded joints, stress relieving of the pressure coils and fire tubes will be required. The coils should be tested 100% radiographically. The Bidder shall confirm the same in their technical Bid.			
<u>vii</u>	vii) 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.			
<u>viii</u>	viii) The following documents shall be forwarded with the technical bid: a) Process and Instrumentation (P&ID) diagrams b) 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 make and model. i) Make/ Models of all the bought-out items along with technical literature, GAD etc.			

<u>NIT clause no</u>	<u>Technical specification as per NIT</u>	<u>Bidder's Response</u>	<u>Compliance by Bidder</u>	
			<u>Indicate Complied or Deviation if any</u>	<u>Indicate Corresponding page ref. of unpriced bid or Comments if any</u>
<u>ix</u>	ix) 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			
<u>x</u>	x) 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.			
<u>xi</u>	xi) 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.			

<u>NIT clause no</u>	<u>Technical specification as per NIT</u>	<u>Bidder's Response</u>	<u>Compliance by Bidder</u>	
			<u>Indicate Complied or Deviation if any</u>	<u>Indicate Corresponding page ref. of unpriced bid or Comments if any</u>
<u>xii</u>	xii) 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.			
<u>xiii</u>	xiii) 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.			
<u>xiv</u>	xiv) Marking : OIL's logo, Purchase order No. and manufacturers name shall be die stamped in the shell of the heater.			
	xv) 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 successful commissioning, 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 notwithstanding inspection, payment for and acceptance of the goods.			

Annexure III

BID REJECTION CRITERIA (BRC)

The bid shall conform generally to the 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.

<u>NIT clause no</u>	<u>Technical specification as per NIT</u>	<u>Bidder's Response</u>	<u>Compliance by Bidder</u>	
			<u>Yes/No</u>	<u>Details of documents submitted by Bidder in support of their Qualification & experience</u>
<u>A) TECHNICAL:</u> <u>1.0Bidder's Qualification:</u>	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 an API 1104 qualified welder. The list of welder(s), who will be engaged for fabrication of the tender item, along with respective welder qualification test report carried out within last 05 years preceding bid closing date of this tender, shall be submitted along with the technical bid.			
<u>2.0Bidder's Experience:</u>	2.1 The bidder shall have the experience of successful execution of at least 1 similar purchase order for supply / service contract for fabricating 03 nos of any of the crude oil process equipment as detailed below, for an Oil & Gas Industry, in the last 5 (five) years preceding the bid closing date of this 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 capacity & working pressure 1.0 kg/cm2 or above.			

<u>NIT clause no</u>	<u>Technical specification as per NIT</u>	<u>Bidder's Response</u>	<u>Compliance by Bidder</u>	
			<u>Yes/No</u>	<u>Details of documents submitted by Bidder in support of their experience</u>
<u>2.0Bidder's Experience:</u>	The bidder shall submit the following documents in support of successful execution of past supply /contract - (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.			

Technical Bid Checklist**Annexure-EEE**

Tender No.			
Bidder's Name :			
		Compliance by Bidder	
SL. NO.	BEC / TENDER REQUIREMENTS	Indicate 'Confirmed' / 'Not Confirmed' / Not applicable	Indicate Corresponding page ref. of unpriced bid or Comments
1	Confirm that validity has been offered as per NIT.		
2	Confirm that Bid Security / Earnest Money has been submitted as per NIT (Wherever Applicable) ?		
3	Confirm that you shall submit Performance security (in the event of placement of order) (Wherever Applicable) ?		
4	Confirm that duly signed Integrity Pact has been submitted as per NIT (Wherever Applicable) ?		
5	Confirm that you have submitted documentary evidence of successfully executing one Purchase order as stipulated in NIT in any of the preceding 5 financial years (*)		
6	Confirm that you have submitted Balance Sheet and Profit and Loss Account of any of the preceding 3 financial years certified by a chartered accountant.		
7	Confirm that the bid has been signed using Class 3 digital certificate with Organisation's Name as per NIT.		
8	Confirm that you have not taken any exception/deviations to the NIT .		

NOTE: Please fill up the greyed cells only.

(*) Purchase Orders along with copies of any of the documents in respect of satisfactory execution of the Purchase Orders should be submitted – (i) Satisfactory Inspection Report (OR) (ii) Satisfactory Supply Completion / Installation Report (OR) (iii) Consignee Receipted Delivery Challans (OR) (iv) Central Excise Gate Pass / Tax , Invoices issued under relevant rules of Central Excise / VAT (OR) (v) any other documentary evidence that can substantiate the satisfactory execution of the purchase order cited above.

Response Sheet**Annexure-FFF**

Tender No.
Bidders Name

Bidders Response Sheet

Sl No.	Description	Remarks
1	Place of Despatch	
2	Whether Freight charges have been included in your quoted prices	
3	Whether Insurance charges have been included in your quoted prices	
4	Make of quoted Product	
5	Offered Validity of Bid as per NIT	
6	Bid Security Submitted (if applicable)	
6	Details of Bid Security Submitted to OIL (if applicable)	
	a) Bid Security Amount (In Rs):	
	b) Bid Security Valid upto:	
7	Whether you shall submit Performance Security in the event of placement of order on you (if applicable)	
8	Integrity Pact Submitted (if applicable)	
9	Whether you have submitted documentary evidence of successfully executing one Purchase order as stipulated in NIT in any of the preceding 5 financial years (*)	
10	Whether you have submitted Balance Sheet and Profit and Loss Account of any of the preceding 3 financial years certified by a chartered accountant.	
11	Delivery Period in weeks from placement of order	
12	Complied to Payment terms of NIT (if applicable) otherwise to Standard Payment Terms of OIL or not.	
13	If bidder is MSE whether you have quoted your own product	
14	If Bid security submitted as Bank Guarantee, Name and Full Address of Issuing Bank including Telephone, Fax Nos and Email id of branch manager	

NOTE: Please fill up the greyed cells only.

(*) Purchase Orders along with copies of any of the documents in respect of satisfactory execution of the Purchase Orders should be submitted – (i) Satisfactory Inspection Report (OR) (ii) Satisfactory Supply Completion / Installation Report (OR) (iii) Consignee Receipted Delivery Challans (OR) (iv) Central Excise Gate Pass / Tax , Invoices issued under relevant rules of Central Excise / VAT (OR) (v) any other documentary evidence that can substantiate the satisfactory

**(TO BE FILLED UP BY ALL THE VENDOR IN THEIR OWN LETTER HEAD)
(ALL FIELDS ARE MANDATORY)**

Tender No. :.....
Name of Beneficiary :M/s.....
Vendor Code :.....
Address :.....
.....
Phone No. (Land Line) :.....
Mobile No. :.....
E-mail address :.....
Bank Account No. (Minimum
Eleven Digit No.) :.....
Bank Name :.....
Branch :.....
Complete Address of your
Bank :.....
IFSC Code of your Bank
a) RTGS :.....
b) NEFT :.....
PAN :.....
VAT Registration No. :.....
CST Registration No. :.....
Service Tax Registration No. :.....
Provident Fund Registration :.....

I/We confirm and agree that all payments due to me/us from Oil India Limited can be remitted to our above mentioned account directly and we shall not hold Oil India Limited responsible if the amount due from Oil India Limited is remitted to wrong account due to incorrect details furnished by us.

Office Seal

.....
Signature of Vendor

Counter Signed by Banker:
Seal of Bank:

Enclosure: Self attested photocopies of the following documents-

- 1) PAN Card
- 2) VAT Registration Certificate
- 3) Service Tax Registration
- 4) CST Registration
- 5) Provident Registration Certificate
- 6) Cancelled cheque of the bank account mentioned above (in original).
- 7) Bank Statement not older than 15 days on the date of submission.