

DETAILED LETTER OF ACCEPTANCE

DLOA No.: TFL/TALCHER/C&P/PIPING WORKS/LOA-001/24-25

April 10, 2024

M/s Sterling & Wilson Private Limited,  
C/o Kishor Sahiu,  
Sipasarubali, Abakash Lane,  
City: Puri, District: Puri,  
State Odisha, Pin: 752001

Tel. No. : 022-254853001/ 022-25485468

Mob. No. : 09987042781

Email ID : [salesff.mumbai@sterlingwilson.com](mailto:salesff.mumbai@sterlingwilson.com); [manojnair@sterlingwilson.com](mailto:manojnair@sterlingwilson.com)

Kind Attn.: MR. MANOJ NAIR, NATIONAL HEAD (INDUSTRIAL-EPC)

**Sub:** Detailed Letter of Acceptance (DLOA) for "Composite Supply cum Erection of Mechanical Piping Works for OSBL Facilities on Item Rate Basis at Talcher Fertilizers Limited, Talcher, Odisha"

**Ref.:**

1. NIT / Tender Document No. **PNPM/PC-183/E-601/NCB Dated 27.03.2023** [E-Tender ID: 2023\_PDIL\_746882\_1] issued by PDIL (on behalf of TFL) and associated Amendment, if any for "Composite Supply cum Erection of Mechanical Piping Works for OSBL Facilities on Item Rate Basis at Talcher Fertilizers Limited, Talcher, Odisha all Amendments thereof (as listed in Annexure-I of the DLOA attached hereto)."
2. Your Offer No. **E-IF-22-23-0007 DATED 19.05.2023** (E Bid No. 2817697) and all subsequent Correspondences received against above referred Tender and and all associated Amendment(s) issued against the NIT.
3. Our FOA (Fax of Acceptance) No. **TFL/TALCHER/C&P/ PIPING WORKS/FOA-008/23-24 dated 13.12.2023**

Dear Sir / Madam,

Further to our FAX OF ACCEPTANCE (FOA) No. **TFL/TALCHER/C&P/ PIPING WORKS/FOA-008/23-24 dated 13.12.2023**; we are pleased to issue this "Detailed Letter of Acceptance (DLOA) for "Composite Supply cum Erection of Mechanical Piping Works for OSBL Facilities on Item Rate Basis at Talcher Fertilizers Limited, Talcher, Odisha." The 'Detailed Letter of Acceptance' shall be executed strictly in accordance with the terms and conditions set out below:

**1.0 SCOPE OF WORK/TECHNICAL SPECIFICATIONS:**

Please refer Section VI of tender document (Tender No. PNP/PC-183/E-601/NCB Dated 27.03.2023 and its associated Amendment, floated by PDIL on behalf of TFL).

Registered Office : Plot 2/H, Kalpana Area, BJB Nagar, Khurda, Bhubaneswar-751014

Project Office : Talcher Fertilizers Limited, Plot No.-24, Film City, Sector-16A, Noida-201301

Site Office : Administrative Building, Talcher Fertilizers Limited, P.O.-Vikrampur, Talcher, Dist. Angul (Odisha) - 759106

Visit Us At : [www.tflonline.co.in](http://www.tflonline.co.in)

**2.0 CONTRACT VALUE**

The total estimated Contract value shall be INR 103,99,25,960/- (Indian Rupees One Hundred Three Crore Ninety Nine Lakh Twenty Five Thousand Nine Hundred and Sixty only) excluding GST and INR 122,71,12,633/- (Indian Rupees One Hundred Twenty Two Crore Seventy One Lakh Twelve Thousand Six Hundred and Thirty Three only) including GST (presently @18%). Detailed SCHEDULE OF RATES (SOR) is attached as **Annexure – C**.

**3.0 FIRM PRICE:**

The unit rates appearing in the detailed SCHEDULE OF RATES (SOR) [**Annexure-C**] shall remain FIRM AND FIXED and valid until completion of the Contract and will not be subject to variation on any account, except specifically mentioned elsewhere in the tender document.

Any new taxes & Duties, if imposed by the State/ Govt. of India after due date of bid submission but before the Contractual Delivery Date, shall be reimbursed to the contractor on submission of documentary evidence for proof of payment to State/ Govt. Authorities and after ascertaining it's applicability with respect to the contract. If any new taxes and/or duties are imposed beyond Completion/ Contract period for reasons not due to Owner's default, such taxes and duties shall be to Contractor's account.

If any new taxes and/or duties are imposed beyond Completion/ Contract period for reasons not due to Owner's default, such taxes and duties shall be to Contractor's account. If any new taxes and/or duties are imposed beyond Completion / Contract period for reasons due to Owner's default, such taxes and duties shall be to Owner's account.

Other terms and conditions w.r.t. statutory variation in taxes and duties shall be as per tender document and its associated Amendment(s).

**4.0 TERMS & CONDITIONS:**

This DLOA is strictly subject to all terms and conditions contained in the tender document No. PNPM/PC-183/E-601/NCB Dated 27.03.2023 and its associated Amendment, if any, issued against the NIT.

**5.0 COMPLETION PERIOD:**


Contractor shall be required to complete the WORK under the CONTRACT as mentioned below:

<b>Completion Period / Completion Schedule</b>	14 (Fourteen) Months Reckoned from Date of Issuance of this Fax of Acceptance (FOA) i.e. 13.12.2023.
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The basic consideration and essence of the Contract is the strict adherence to the Time schedules for performing the specified works as stipulated in the Contract.

If at any time, the Owner/ Consultant is of opinion that the Contractor has fallen behind the approved construction schedule, the Owner/ Consultant may, without any cost to Owner/ Consultant, require the Contractor to take such steps as may be necessary to improve his progress, especially require him to employ overtime operations, increase the number of shifts, work on holidays and Sundays or increase

*A. Mishra*



the capacity of his construction plant and equipment and require him to submit evidence demonstrating the manner in which the Contractor proposes to comply with the construction schedule. Failure of the Contractor to comply with the above will be considered a failure to execute the work with due diligence.

All other Terms & Conditions related to "Completion Period / Completion Time / Time Schedule" shall be as per tender document and its associated Amendment, if any.

#### 6.0 PRICE REDUCTION SCHEDULE (PRS)

Time is the essence of the CONTRACT. In case the CONTRACTOR fails to complete the WORK within the stipulated period, then, unless such failure is due to Force Majeure as defined in Clause 26 of GCC or due to EMPLOYER's defaults, the Total Contract price shall be reduced by ½ % of the total Contract Price per complete week of delay or part thereof subject to a maximum of 5 % of the Total Contract Price, by way of reduction in price for delay and not as penalty. The said amount will be recovered from amount due to the Contractor/ Contractor's Contract Performance Security payable on demand.

The decision of the OWNER in regard to applicability of Price Reduction Schedule shall be final and binding on the CONTRACTOR.

Please also refer Clause No. 50 of Section-III of Tender document (Provision regarding invoice for reduced value or credit note towards PRS).

All other Terms & Conditions related to "PRS" shall be as per tender document and its associated Amendment(s).

#### 7.0 TAXES AND DUTIES:

Please note that the responsibility of payment of **GST (CGST & SGST or IGST or UTGST)** lies with the Contractor of Goods / Services only. Supplier of Goods / Services (Service Provider) providing taxable service shall issue an Invoice/ Bill/ e-Invoice, as the case may be as per rules/ regulation of GST. Further, returns and details required to be filled under GST laws & rules should be timely filed by Contractor of Goods / Services (Service Provider) with requisite details.

Payments to Service Provider for claiming **GST (CGST & SGST/UTGST or IGST)** amount will be made provided the above formalities are fulfilled. Further, OWNER may seek copies of challan and certificate from Chartered Accountant for deposit of **GST (CGST & SGST/UTGST or IGST)** collected from Owner.

The quoted price includes all taxes, duties, levies etc., as applicable at prevailing rates. In case, contractor has not included any such taxes, duties, levies etc., at all and/or at prevailing rates (deliberately or otherwise) and it becomes leviable during execution of the contract, then contractor has to pay all such taxes, duties, levies etc. and OWNER shall not be liable for payment of such liabilities and/or OWNER shall not reimburse such taxes, duties, levies etc. to the CONTRACTOR.

All other Terms & Conditions related to contract value / price & taxation shall be as per the tender document and its associated Amendment(s).

#### 8.0 CONTRACT AGREEMENT:

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A "Contract Agreement" [as per **Format F-23** (i.e. "**PROFORMA FOR CONTRACT AGREEMENT**") of Tender document] on Non-Judicial stamp paper (of appropriate value) shall be executed between the OWNER and the CONTRACTOR within fifteen (15) days from the date of issuance of FOA (i.e. 13.12.2023). The cost of stamp paper shall be borne by CONTRACTOR.

CONTRACTOR shall sign the CONTRACT AGREEMENT (in duplicate) and submit to the OWNER. OWNER shall sign both the copies and return one copy to the CONTRACTOR and retain the other copy. The CONTRACT AGREEMENT shall be signed by an authorized officer of the CONTRACTOR.

**Note:** Contract Agreement has already been executed between TFL and Contractor and a copy of the same is placed at **Annexure-A** of this DLOA.

**9.0 TERMS OF PAYMENT:**

The 'Terms of Payment' shall be governed by the terms enumerated in Clause No. 40.0 of SCC (Section-V) of the Tender Document and its associated Amendment, if any.

**PAYING AUTHORITY**

Director (Finance),  
Talcher Fertilizers Limited  
Administrative Building  
Talcher, Post: Vikrampur,  
Dist: Angul, Pincode: 759106  
Odisha.

Any other provision related to "Terms of Payment / Payment Terms" shall be as per the tender document and its associated Amendment(s).

**10.0 COMPENSATION FOR EXTENDED STAY**



NOT APPLICABLE

**11.0 Compliance to DMI & SP (Domestically Manufactured Iron & Steel Products) Policy**

The above Policy shall be as per Gazette notification dated 29<sup>th</sup> May, 2019 and its subsequent Amendment attached as Appendix-I to Section-II (Bid Evaluation Criteria & Evaluation Methodology) of Tender Document and its associated Amendment(s). Contractor shall ensure compliance to the DMI&SP policy.

**12.0 Compliance to "Public Procurement (Preference to Make in India) Order 2017"**

You have given undertaking in your bid document that you are to be considered as a "Local supplier" under "Public Procurement (Preference to Make in India) Order 2017" by virtue of meeting the mandatory minimum Local Content requirement of 50% specified in the said policy. Accordingly, the provisions of the said policy dated 16.09.2020 as attached with the tender document and its associated Amendment(s) shall be applicable for this contract.

**13.0 DEFECT LIABILITY PERIOD:**

Defect Liability Period shall be 12 months from the date of completion of works in all respects as declared by EIC.

All other Terms & Conditions related to "Defect Liability Period" shall be as per the tender document and its associated Amendment(s), if any.

**14.0 CONTRACT PERFORMANCE SECURITY (CPS) / SECURITY DEPOSIT (SD)**

The CONTRACTOR shall furnish Contract Performance Security / Security Deposit to the EMPLOYER, within 30 days from the date of issuance of 'Fax of Acceptance'. The Contract Performance Security shall be in the form of either Banker's Cheque or Demand Draft or Insurance Surety Bond or Fixed Deposit Receipt or Letter of Credit or Bank Guarantee as per **Form F-4** and shall be in the currency of the Contract.

The value / amount of Contract Performance Security/ Security Deposit shall be as under:

(a) CPS / SD @ 3% of Total order / contract value (excluding GST).

The Contract Performance Security shall be towards faithful performance of the contractual obligations and performance of the equipment. For other details, please refer Clause No. 38 of Section – III of Tender i.e. Instructions to Bidders.

The original "Contract Performance Security (CPS) / Security Deposit (SD)" (by way of Bank Guarantee or Demand Draft or Banker's Cheque or Insurance Surety Bond or Fixed Deposit Receipt or Letter of Credit) shall be sent to following address:

Mr. Vivek Mishra,  
Chief Manager (C&P)  
Administrative Building  
Talcher Fertilizers Limited,  
Talcher, Post: Vikrampur,  
Dist. Angul, Pin - 759106  
Odisha

**Note:**

- In case CPS is submitted by way of Bank Guarantee, the non-judicial Stamp paper of appropriate value only or equivalent document value shall have to be purchased in the name of the bank executing the bank guarantee and not in the name of the CONTRACTOR.

- In case CPS is submitted by way of Bank Guarantee/IMPS/NEFT/RTGS/SWIFT etc., the bank details of TFL is as under—

**Account holder's name:** Talcher Fertilizers Limited

**Bank Name:** State Bank of India

**Branch:** CAG II, New Delhi

**Account Number:** 41256023769

**Type (Current/Saving):** Current

**IFSC code:** SBIN0017313

All other Terms & Conditions related to Contract Performance Security (CPS) / Security Deposit (SD)" shall be as per the tender document and its associated Amendment(s).

**15.0 AHR (ABNORMALLY HIGH RATE) ITEMS**

*Vivek Mishra*



The list of AHR items is attached as **Annexure - D**.

The payment of AHR items beyond the SOR stipulated quantities shall be made at the lowest amongst the following rates:

- i) Rates as per SOR, attached with this DLOA.
- ii) Rate of the item, which shall be derived as follows:
  - a. Based on rates of Machine and labour as available from the contract (which includes contractor's supervision, profit, overheads and other expenses).
  - b. In case rates are not available in the contract, rates will be calculated based on prevailing market rates of machine, material and labour plus 15% to cover contractor's supervision profit, overhead & other expenses.

All other Terms & Conditions related to "AHR (Abnormally High Rate) Items" shall be as per the tender document and its associated Amendment(s).

**16.0 ENGINEER-IN-CHARGE (EIC):**

EIC shall be Mr. D. Maji, DGM (Mechanical), PDIL, Mobile No. 09650370693, E-mail: [dmail@pdil.co.in](mailto:dmail@pdil.co.in)

You are requested to contact above mentioned official for further instructions.

**17.0 INTEGRITY PACT AGREEMENT**

INTEGRITY PACT shall be applicable for this contract. The Integrity Pact Agreement is placed at **Annexure - E**.

**18.0 BANK DETAILS:**

The Bank Detail of M/s Sterling & Wilson Private Limited is attached as **Annexure-F**.

**19.0 POST ORDER CORRESPONDENCE**

**(A) Head Office (PDIL-Noida)**

TO,  
Mr. Kailash Joshi  
Project Manager,  
M/s Projects & Development India Limited,  
P.D.I.L Bhawan, A-14, Sector-1,  
Noida -201301  
E-Mail: [kjoshi@pdilin.com](mailto:kjoshi@pdilin.com)

**COPY TO:**

- (1) Mr. D. Maji,  
Engineer-In-Charge / DGM (Mechanical), PDIL  
Administrative Building  
Talcher Fertilizers Limited,  
Talcher, Post: Vikrampur,  
Dist. Angul, Pin - 759106

*Amish*



Odisha  
E-Mail: [uptudu@pdil.co.in](mailto:uptudu@pdil.co.in)

- (2) Mr. S. Mishra,  
COO (U/S)  
Administrative Building,  
Talcher Fertilizers Limited  
Talcher, Post: Vikrampur,  
Dist. Angul, Pin – 759106  
Odisha  
E-Mail: [coous@tflonline.co.in](mailto:coous@tflonline.co.in)
- (3) Mr. U. P. Ghosh, CM (Mech.) / Mr. A. K. Behera, Manager (Const.)  
Administrative Building,  
Talcher Fertilizers Limited  
Talcher, Post: Vikrampur,  
Dist. Angul, Pin – 759106  
Odisha  
E-Mail: [upghosh@tflonline.co.in](mailto:upghosh@tflonline.co.in) / [ashish10@tflonline.co.in](mailto:ashish10@tflonline.co.in)

**(B) For Site Related Activities (at TFL, Talcher)**

**TO,**  
Mr. D. Maji,  
Engineer-In-Charge / DGM (Mechanical), PDIL  
Administrative Building  
Talcher Fertilizers Limited,  
Talcher, Post: Vikrampur,  
Dist. Angul, Pin - 759106  
Odisha  
E-Mail: [dmail@pdil.co.in](mailto:dmail@pdil.co.in)

**COPY TO:**

- (1) Mr. Kailash Joshi  
Project Manager,  
M/s Projects & Development India Limited,  
P.D.I.L Bhawan, A-14, Sector-1,  
Noida -201301  
E-Mail: [kjoshi@pdilin.com](mailto:kjoshi@pdilin.com)
- (2) Mr. S. Mishra,  
COO (U/S)  
Administrative Building,  
Talcher Fertilizers Limited  
Talcher, Post: Vikrampur,  
Dist. Angul, Pin – 759106  
Odisha  
E-Mail: [coous@tflonline.co.in](mailto:coous@tflonline.co.in)
- (3) Mr. U. P. Ghosh, CM (Mech.) / Mr. A. K. Behera, Manager (Const.)  
Administrative Building,  
Talcher Fertilizers Limited  
Talcher, Post: Vikrampur,  
Dist. Angul, Pin – 759106

*A. Mishra*



DLOA NO.TFL/TALCHER/C&P/PIPING WORKS/LOA-001/23-24 dated 10.04.2024

Odisha

E-Mail: [upghosh@tflonline.co.in](mailto:upghosh@tflonline.co.in) / [ashish10@tflonline.co.in](mailto:ashish10@tflonline.co.in)

## 20.0 OTHERS TERMS & CONDITIONS OF CONTRACT

All other terms and conditions of the contract shall be governed by Tender No. PNPM/PC-183/E-601/NCB Dated 27.03.2023 and all associated Amendment(s) issued against the NIT.

This DLOA is being issued to regularize the FAX OF ACCEPTANCE No. TFL/TALCHER/C&P/ PIPING WORKS/FOA-008/23-24 dated 13.12.2023.

This Detailed Letter of Acceptance (DLOA) along with all enclosures is being issued to you in duplicate. You are requested to return to us one copy, duly signed and stamped on each page.

Thanking you,

Yours faithfully,  
For M/s Talcher Fertilizers Limited,

  
*(Signature)*  
10/04/2024  
(Vivek Mishra)  
CM (C&P)

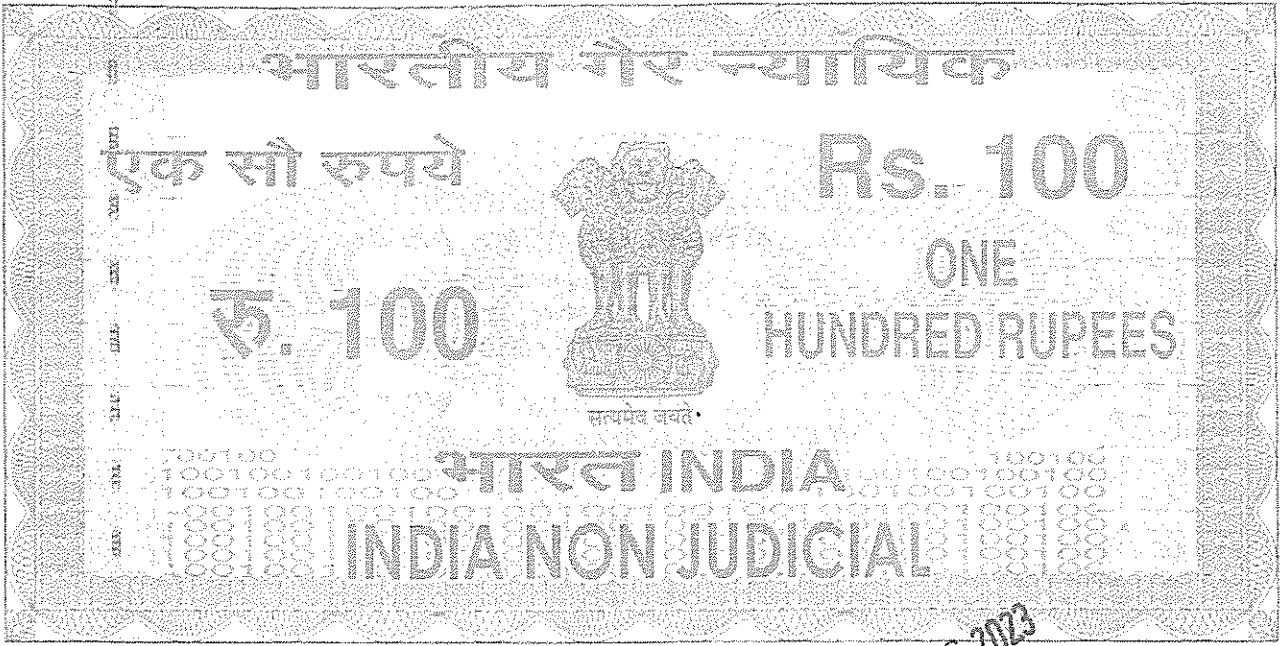
### ENCLOSURES:

1. Annexure-A Contract Agreement executed between M/s. Talcher Fertilizers Ltd. and M/s Sterling & Wilson Private Limited
2. Annexure-B FOA No. TFL/TALCHER/C&P/ PIPING WORKS/FOA-008/23-24 dated 13.12.2023
3. Annexure-C Schedule of Rates (SOR)
4. Annexure-D List of AHR items
4. Annexure-E Pre-Signed Integrity Pact Agreement
5. Annexure-F Bank details of M/s M/s Sterling & Wilson Private Limited
6. Annexure-G Public Procurement (Preference to Make In India) Order 2017
7. Annexure-H Provision for procurement from a bidder which shares a land border with India
8. Annexure-I All Amendment(s) to Tender documents ( 10 nos. Amendment)
9. Annexure-J Complete set of Tender Document No. PNPM/PC-183/E-601/NCB Dated 27.03.2023



**ANNEXURE-A**

**CONTRACT AGREEMENT**

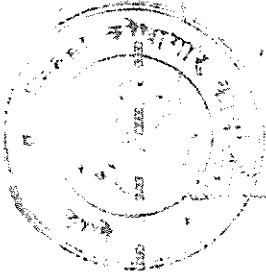


महाराष्ट्र MAHARASHTRA

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14 DEC 2023



CONTRACT AGREEMENT

FOA NO. TFL/TALCHER/CRP/PIPING WORKS/FOA-008/23-24  
DLOA No.: dated: dtd. 13.12.2023

TFL's PAN No. AAFCT8667A


Contract Agreement for the work of COMPOSITE SUPPLY CUM ERECTION OF MECHANICAL PIPING WORKS FOR OSBL FACILITIES ON ITEM RATE BASIS AT TALCHER FERTILIZERS LIMITED, TALCHER, ODISHA of TALCHER FERTILIZERS LIMITED made on 20.12.2023 between STERLING AND WILSON PRIVATE LIMITED, address : C/o Kishor Sahiu, Sipasarubali, Abakash Lane, City : Puri, District : Puri, State Odisha, Pin : 752001 hereinafter called the "CONTRACTOR" (which term shall unless excluded by or repugnant to the subject or context include its successors and permitted assignees) of the one part and TALCHER FERTILIZERS LIMITED hereinafter called the "EMPLOYER" (which term shall, unless excluded by or repugnant to the subject or context include its successors and assignees) of the other part.

WHEREAS



14 DEC 2023

अनुसूची / Annexure - 2

1. मुद्रांक विक्री नोंदवही अनु. क्रमांक / दिनांक	112122
2. दस्ताचा प्रकार	
3. दस्त नोंदणी करणार आहेत का ?	होय / नाही
4. भिककलीचे थोडक्यात वर्णन	<b>STERLING AND WILSON PVT. LTD.</b>
5. मुद्रांक विकत घेणाऱ्याचे नाव व सही	Universal Majestic, 9th Floor,
6. हस्ते असल्यास त्याचे नाव, पत्ता व सही	P. L. Lokhande Marg, Chembur (W),
7. दुसऱ्या पक्षकाराचे नाव	MUMBAI - 400 043.
8. मुद्रांक शुल्क रक्कम	
9. परवानाधारक मुद्रांक विक्रेत्याची सही व परवाना क्रमांक तसेच मुद्रांक विक्रीचे ठिकाण/पत्ता ई, ६/१-९, सेक्टर-९, वाशी, नवी मुंबई	 सौ. रवींद्रा उत्तर. विरादार परवाना क्र. १२०१०२४
ज्या कारणासाठी ज्यांनी मुद्रांक खरेदी केली त्यांनी त्याच कारणासाठी मुद्रांक खरेदी केल्यापासून ६ महिन्यात वापरणे बंधनकारक आहे.	

Ravindra

112122



- A. The EMPLOYER being desirous of having provided and executed certain work mentioned, enumerated or referred to in the Tender Documents including Letter Inviting Tender, General Tender Notice, General Conditions of Contract, Special Conditions of Contract, Specifications, Drawings, Plans, Time Schedule of completion of jobs, Schedule of Rates, Agreed Variations, other documents has called for Tender.
- B. The CONTRACTOR has inspected the SITE and surroundings of WORK specified in the Tender Documents and has satisfied himself by careful examination before submitting his tender as to the nature of the surface, strata, soil, sub-soil and ground, the form and nature of site and local conditions, the quantities, nature and magnitude of the work, the availability of labour and materials necessary for the execution of work, the means of access to SITE, the supply of power and water thereto and the accommodation he may require and has made local and independent enquiries and obtained complete information as to the matters and thing referred to, or implied in the tender documents or having any connection therewith and has considered the nature and extent of all probable and possible situations, delays, hindrances or interferences to or with the execution and completion of the work to be carried out under the CONTRACT, and has examined and considered all other matters, conditions and things and probable and possible contingencies, and generally all matters incidental thereto and ancillary thereof affecting the execution and completion of the WORK and which might have influenced him in making his tender.
- C. The Tender Documents including the Notice Letter Inviting Tender, General Conditions of Contract, Special Conditions of Contract, Schedule of Rates, General Obligations, SPECIFICATIONS, DRAWINGS, PLANS, Time Schedule for completion of Jobs, Letter of Acceptance of Tender and any statement of agreed variations with its enclosures copies of which are hereto annexed form part of this CONTRACT though separately set out herein and are included in the expression "CONTRACT" wherever herein used.

AND WHEREAS

The EMPLOYER accepted the Tender of the CONTRACTOR for the provision and the execution of the said WORK at the rates stated in the schedule of quantities of the work and finally approved by EMPLOYER (hereinafter called the "Schedule of Rates") upon the terms and subject to the conditions of CONTRACT.

NOW THIS AGREEMENT WITNESSETH AND IT IS HEREBY AGREED AND DECLARED AS FOLLOWS:-



1. In consideration of the payment to be made to the CONTRACTOR for the WORK to be executed by him, the CONTRACTOR hereby covenants with EMPLOYER that the CONTRACTOR shall and will duly provide, execute and complete the said work and shall do and perform all other acts and things in the CONTRACT mentioned or described or which are to be implied there from or may be reasonably necessary for the completion of the said WORK and at the said times and in the manner and subject to the terms and conditions or stipulations mentioned in the contract.
2. In consideration of the due provision execution and completion of the said WORK, EMPLOYER does hereby agree with the CONTRACTOR that the EMPLOYER will pay to the CONTRACTOR the respective amounts for the WORK actually done by him and approved by the EMPLOYER at the Schedule of Rates and such other sum payable to the CONTRACTOR under provision of CONTRACT, such payment to be made at such time in such manner as provided for in the CONTRACT.

A N D

3. In consideration of the due provision, execution and completion of the said WORK the CONTRACTOR does hereby agree to pay such sums as may be due to the EMPLOYER for the services rendered by the EMPLOYER to the CONTRACTOR, such as power supply, water supply and others as set for in the said CONTRACT and such other sums as may become payable to the EMPLOYER towards the controlled items of consumable materials or towards loss, damage to the EMPLOYER'S equipment, materials construction plant and machinery, such payments to be made at such time and in such manner as is provided in the CONTRACT.

It is specifically and distinctly understood and agreed between the EMPLOYER and the CONTRACTOR that the CONTRACTOR shall have no right, title or interest in the SITE made available by the EMPLOYER for execution of the works or in the building, structures or work executed on the said SITE by the CONTRACTOR or in the goods, articles, materials etc., brought on the said SITE (unless the same specifically belongs to the CONTRACTOR) and the CONTRACTOR shall not have or deemed to have any lien whatsoever charge for unpaid bills will not be entitled to assume or retain possession or control of the SITE or structures and the EMPLOYER shall have an absolute and unfettered right to take full possession of SITE and to remove the CONTRACTOR, their servants, agents and materials belonging to the CONTRACTOR and lying on the SITE.

The CONTRACTOR shall be allowed to enter upon the SITE for execution of the WORK only as a licensee simpliciter and shall not have any claim, right, title or interest in the SITE or the



structures erected thereon and the EMPLOYER shall be entitled to terminate such license at any time without assigning any reason.

The materials including sand, gravel, stone, loose, earth, rock etc., dug up or excavated from the said SITE shall, unless otherwise expressly agreed under this CONTRACT, exclusively belong to the EMPLOYER and the CONTRACTOR shall have no right to claim over the same and such excavation and materials should be disposed off on account of the EMPLOYER according to the instruction in writing issued from time to time by the ENGINEER-IN-CHARGE.

In Witness whereof the parties have executed these presents in the day and the year first above written.

Signed and Delivered for and on  
on behalf of EMPLOYER

Signed and Delivered for and  
on behalf of the CONTRACTOR.

TALCHER FERTILIZERS LIMITED

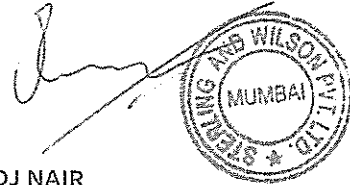
STERLING AND WILSON PRIVATE  
LIMITED



SURA DEOGAM, DMA (CAP)

Date:

Place:





MANOJ NAIR  
National Head – Industrial EPC

Date:

Place: Mumbai

IN PRESENCE OF TWO WITNESSES

1.   
Soumya R. Sahoo.

2.   
Ashish Behara.

  
1. Arun Nikam

  
2. Nikhil Kamat

**ANNEXURE-B**

**FAX OF ACCEPTANCE**

Fertilizers

तालचेर फर्टिलाइजर्स लिमिटेड  
TALCHER FERTILIZERS LIMITED  
[Erstwhile Rashtriya Coal Gas Fertilizers Limited]

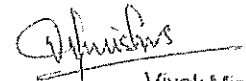
निगमित पहचान क्रमांक / Corporate Identification Number (CIN) : U24120OR2015PLC010575

FAX OF ACCEPTANCE (FOA)

FOA No. TFL/TALCHER/C&P/ PIPING WORKS/FOA-008/23-24 December 13, 2023

TO : M/S STERLING AND WILSON PRIVATE LIMITED, PURI  
ATTN. : MR. MANOJ NAIR, NATIONAL HEAD (INDUSTRIAL-EPC)  
MOB. NO. : 022-25485300/ 022-25485468 / 09987042781  
E-MAIL : salesff.mumbai@sterlingwilson.com/manojnair@sterlingwilson.com  
FROM : MR. VIVEK MISHRA, SENIOR MANAGER (C&P)

1. PLEASE REFER TO (A) TENDER NO. PNP/PC-183/E-601/NCB DATED 27.03.2023 [E-TENDER ID: 2023\_PDIL\_746882\_1] FLOATED BY PDIL (ON BEHALF OF TFL) FOR "COMPOSITE SUPPLY CUM ERECTION OF MECHANICAL PIPING WORKS FOR OSBL FACILITIES ON ITEM RATE BASIS AT TALCHER FERTILIZERS LIMITED, TALCHER, ODISHA" AND ITS SUBSEQUENT AMENDMENTS (B) YOUR OFFER NO. E-IF-22-23-0007 DATED 19.05.2023 [E-BID NO. 2817697] AND (C) ALL SUBSEQUENT CORRESPONDENCES THEREOF.
2. BASED ON ABOVE, WE ARE PLEASED TO ISSUE THIS "FAX OF ACCEPTANCE (FOA)" AT A TOTAL ESTIMATED CONTRACT VALUE OF INR 103,99,25,960/- (INDIAN RUPEES ONE HUNDRED THREE CRORE NINETY NINE LAKH TWENTY FIVE THOUSAND NINE HUNDRED AND SIXTY ONLY), EXCLUSIVE OF GST AND INR 122,71,12,633/- (INDIAN RUPEES ONE HUNDRED TWENTY TWO CRORE SEVENTY ONE LAKH TWELVE THOUSAND SIX HUNDRED AND THIRTY THREE ONLY) INCLUSIVE OF GST, PRESENTLY @18%.
3. COMPLETION PERIOD: COMPLETION PERIOD FOR THE ENTIRE PACKAGE SHALL BE 14 (FOURTEEN) MONTHS RECKONED FROM DATE OF ISSUANCE OF THIS FAX OF ACCEPTANCE (FOA).
4. CONTRACT PERFORMANCE SECURITY (CPS) / SECURITY DEPOSIT (SD): YOU ARE REQUIRED TO SUBMIT CONTRACT PERFORMANCE SECURITY (CPS) OF 3% (THREE PERCENT) OF ANNUALIZED CONTRACT VALUE (EXCLUDING GST) WITHIN 30 DAYS FROM THE DATE OF ISSUANCE OF THIS FOA, IN LINE WITH CLAUSE NO. 38.0 OF ITB (INSTRUCTION TO BIDDERS) & BIDDING DATA SHEET (BDS) OF TENDER DOCUMENT AND AMENDMENTS THEREOF, IF ANY.
5. CONTRACT AGREEMENT: YOU ARE REQUIRED TO SUBMIT CONTRACT AGREEMENT WITHIN 15 DAYS FROM THE DATE OF ISSUANCE OF THIS FOA, ON NON-JUDICIAL STAMP PAPER IN LINE WITH CLAUSE NO. 37.0 OF ITB (INSTRUCTION TO BIDDERS) OF TENDER DOCUMENT AND AMENDMENTS THEREOF, IF ANY.



Vivek Mishra  
Senior Manager (C&P)  
Talcher Fertilizers Limited  
Talcher, Odisha

Registered Office: Plot 2/H, Kalpana Area, BJB Nagar, Khordha, Bhubaneswar - 751014.  
Site Office: Administrative Building, Talcher Fertilizers Limited, Talcher, Post- Vikrampur, Dist - Angul Odisha-759100





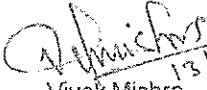
FOA NO. TFL/TALCHER/C&P/PIPING WORKS/FOA-008/23-24 DATED 13.12.2023

6. INTEGRITY PACT: THIS CONTRACT SHALL BE GOVERNED BY INTEGRITY PACT AS ATTACHED WITH TENDER DOCUMENT.
7. PUBLIC PROCUREMENT (PREFERENCE TO MAKE IN INDIA) POLICY: YOU HAVE GIVEN UNDERTAKING IN YOUR BID DOCUMENT THAT YOU ARE TO BE CONSIDERED AS A "LOCAL SUPPLIER" UNDER "PUBLIC PROCUREMENT (PREFERENCE TO MAKE IN INDIA) ORDER 2017" BY VIRTUE OF MEETING THE MANDATORY MINIMUM LOCAL CONTENT REQUIREMENT OF 50% SPECIFIED IN THE SAID POLICY. ACCORDINGLY, THE PROVISIONS OF THE SAID POLICY DATED 16.09.2020 AS ATTACHED WITH THE TENDER DOCUMENT SHALL BE APPLICABLE FOR THIS CONTRACT.

ALL OTHER TERMS AND CONDITIONS SHALL BE AS PER TENDER NO. PNP/MP-183/E-601/NCB DATED 27.03.2023 [E-TENDER ID: 2023\_PDIL\_746882\_1] AND ALL AMENDMENTS ISSUED THEREOF AGAINST THE TENDER. A "DETAILED LETTER OF ACCEPTANCE (DLOA)" SHALL FOLLOW.

YOU ARE REQUESTED TO ACKNOWLEDGE RECEIPT OF THIS FOA.

FOR TALCHER FERTILIZERS LIMITED

  
13/12/2023  
Vivek Mishra  
Senior Manager (C&P)  
Talcher Fertilizers Limited  
Talcher, Odisha

CC: BY COURIER TO

M/S STERLING AND WILSON PRIVATE LIMITED,  
C/O KISHOR SAHII, SIPASARUBALI  
ABAKASH LANE, NILACHL MARG  
DIST- PURI, ODISHA - 752001

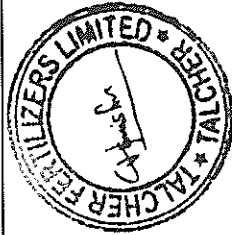


# **ANNEXURE-C**

## **SCHEDULE OF RATES**

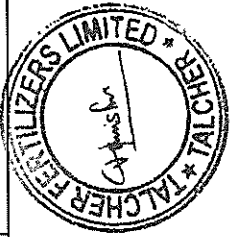
## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
1.00	(PART-A)				
2.00	SUPPLY OF PIPING ITEMS:				
3.00	FOR U/G PIPING:				
3.10	"Supply, taking over" as defined in the specifications, handling, loading/unloading, transportation, unloading and Laying of barecoated line pipes and other materials like valve, fittings, flanges & TPI inspection etc. from Contractors suppliers locations/works etc. to Contractor's stock yard/workshop/work-site including preliminary activities, preparation of drawings, wherever required for crossing etc. Handling, stacking, stringing of the UG pipes. Carrying out inspection of materials including line pipes at the time of laying/ installation of line pipes, associated valves, tees, insulating joints, flanges & fittings for buried application of all sizes, thickness & ANSi class rating and accessories as per specification wherever required depending on site condition. Arrangement of all additional lands required for Contractor's storage, fabrication, access for construction, etc. procurement and supply of all materials, consumables, equipment, labour and other inputs, carrying out all temporary, ancillary, auxiliary works, etc.				
4.00	FOR AVG PIPING:				
4.10	Complete works for Supply of pipes, flanges, fittings & Valves for aboveground installation including all taxes, duties, transportation and inspection charges & TPI inspection, but not limited to, the following items in accordance with PMS (piping material specification), relevant specifications & drawings indicated in job specification and instructions of Owner/Consultant and as per all provisions of the CONTRACT. Supply of all piping items inclusive of spares (For details refer PDIL-MTO as well as SOR). Supply & Transportation of all piping materials from storage point to work site/shop including from shop to work site, cleaning, stacking, prefabrication / fabrication at shop. In case of IBR piping, material identification, drawing approval, hydro-test witness and final approval of fabricated piping by IBR authorities for taking the same in use, shall also be included in the quoted rate.				
5.00	SUPPLY OF PIPING ITEMS				
5.11	PIPE SCH 80, PE, 0.5", SMLS, API 5L GR.B, ASME B36.10	2046.00	MTR.	329.41	673981.14
5.12	PIPE SCHXXS, BE IBR, 0.75", SMLS, ASTM A335 GR.P22, ASME B36.10	30.00	MTR.	1477.18	44315.36
5.13	PIPE SCH160, PE IBR, 0.75", SMLS, ASTM A106 GR.B, ASME B36.10	174.00	MTR.	558.33	97149.23
5.14	PIPE SCH 80, PE IBR, 0.75", SMLS, ASTM A106 GR.B, ASME B36.10	318.00	MTR.	423.53	134683.29
5.15	PIPE SCH 80, PE, 0.75", SMLS, API 5L GR.B, ASME B36.10	2046.00	MTR.	423.53	866547.18



SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
5.16	PIPE SCHXXS, BE 1BR,1", SMLS,ASTM A335 GR.P22,ASME B36.10	186.00	MTR.	1940.59	360950.06
5.17	PIPE SCHXXS, THD,1", SMLS,ASTM A106 GR.B,HOT DIP GALV.,ASME B36.10	90.00	MTR.	673.98	60658.45
5.18	PIPE SCHXXS, BE 1BR,1 1/2", SMLS,ASTM A335 GR.P22,ASME B36.10	24.00	MTR.	3404.21	81701.06
5.19	PIPE SCH 80, PE, 1 1/2", SMLS,API 5L GR.B,ASME B36.10	18.00	MTR.	660.42	11887.62
5.20	PIPE SCH 40, BE,2", SMLS,API 5L GR.B,ASME B36.10	2980.00	MTR.	636.49	1896754.91
5.21	PIPE SCH10S,BE,2",EFW,STR,WELD,ASTM A312 TP304,ASME B36.19	798.00	MTR.	1055.24	842082.80
5.22	PIPE SCH 40, BE 1BR,2", SMLS,ASTM A106 GR.B,ASME B36.10	528.00	MTR.	642.08	339017.30
5.23	PIPE SCHXXS, THD,2", SMLS,ASTM A106 GR.B,HOT DIP GALV.,ASME B36.10	702.00	MTR.	1225.13	860043.44
5.24	PIPE SCH 40, BE,2", SMLS,API 5L GR.B,C&W,ASME B36.10	18.00	MTR.	642.08	11557.41
5.25	PIPE SCH 40, BE,3", SMLS,API 5L GR.B,ASME B36.10	3906.00	MTR.	1320.85	5159226.95
5.26	PIPE SCH10S,BE,3",EFW,STR,WELD,ASTM A312 TP304,ASME B36.19	672.00	MTR.	1732.41	1164182.74
5.27	PIPE SCHSTD, THD,3", SMLS,ASTM A106 GR.B,HOT DIP GALV.,ASME B36.10	774.00	MTR.	2087.41	160076.98
5.28	PIPE SCH 40, BE,4", SMLS,API 5L GR.B,ASME B36.10	2214.00	MTR.	1879.97	4162260.53
5.29	PIPE SCH STD, BE,4", SMLS,API 5L GR.B,ASME B36.10	24.00	MTR.	1879.97	45119.36
5.30	PIPE SCHSTD, THD,4", SMLS,ASTM A106 GR.B,HOT DIP GALV.,ASME B36.10	3048.00	MTR.	2942.39	8968414.85
5.31	PIPE SCH10S,BE,4",EFW,STR,WELD,ASTM A312 TP304,ASME B36.19	264.00	MTR.	2245.28	592753.86
5.32	PIPE SCH 40, BE,6", SMLS,API 5L GR.B,ASME B36.10	870.00	MTR.	3306.10	2876311.04
5.33	PIPE SCH STD, BE,6", SMLS,API 5L GR.B,ASME B36.10	2046.00	MTR.	3306.10	6764290.11
5.34	PIPE SCHSTD, BE,6", SMLS,ASTM A106 GR.B,HOT DIP GALV.,ASME B36.10	918.00	MTR.	4599.83	4222646.19
5.35	PIPE SCH 40, BE 1BR,6", SMLS,ASTM A106 GR.B,ASME B36.10	504.00	MTR.	3306.10	1666276.74



## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
5.36	PIPE SCH40S, BE, 6", EFW, STR, WELD, ASTM A312 TP304, ASME B36.19	510.00	MTR.	7590.88	3871348.84
5.37	PIPE SCH 20, BE, 8", SMLS, ASTM A106 GR. B, ASME B36.10	324.00	MTR.	4066.23	1317458.38
5.38	PIPE SCH120, BE, 8", SMLS, ASTM A106 GR. B, ASME B36.10	24.00	MTR.	11038.96	264835.03
5.39	PIPE SCH 20, BE, 8", ERW, API 5L GR. B, ASME B36.10	2274.00	MTR.	2880.18	6549528.10
5.40	PIPE SCH 20, BE, 8", ERW, API 5L GR. B, C&W, ASME B36.10	48.00	MTR.	3219.16	154519.91
5.41	PIPE SCH10S, BE, 8", EFW, STR, WELD, ASTM A312 TP304, ASME B36.19	1080.00	MTR.	5342.41	5769802.67
5.42	PIPE SCH 20, BE, 10", SMLS, ASTM A106 GR. B, ASME B36.10	978.00	MTR.	5183.68	5069643.88
5.43	PIPE SCH140, BE, 10", SMLS, ASTM A106 GR. B, ASME B36.10	654.00	MTR.	18933.73	12382659.62
5.44	PIPE SCH 20, BE, 10", ERW, API 5L GR. B, ASME B36.10	4302.00	MTR.	3811.59	15537061.53
5.45	PIPE SCH 20, BE, 10", ERW, API 5L GR. B, C&W, ASME B36.10	36.00	MTR.	3811.59	130017.25
5.46	PIPE SCH 20, BE, 12", ERW, API 5L GR. B, ASME B36.10	1122.00	MTR.	4400.43	4937281.65
5.47	PIPE SCH10S, BE, 12", EFW, STR, WELD, ASTM A358 TP316L CL.1, ASME B36.19	18.00	MTR.	16895.03	304110.58
5.48	PIPE 44.0 MM, BE, 12", SMLS, ASTM A335 GR. P22, ASME B36.10	24.00	MTR.	109758.69	2634208.47
5.49	PIPE SCH 10, BE, 14", ERW, API 5L GR. B, ASME B36.10	1128.00	MTR.	5006.61	5647461.64
5.50	PIPE SCH 10, BE, 14", ERW, API 5L GR. B, C&W, ASME B36.10	36.00	MTR.	5006.61	180238.14
5.51	PIPE SCH10S, BE, 14", EFW, STR, WELD, ASTM A312 TP304, ASME B36.19	54.00	MTR.	11722.51	633015.75
5.52	PIPE SCH10S, BE, 14", EFW, STR, WELD, ASTM A312 TP304, ASME B36.19	1194.00	MTR.	19394.75	23157332.04
5.53	PIPE SCH 10, BE, 16", LSAW, API 5L GR. B, C&W, ASME B36.10	24.00	MTR.	8965.96	215183.15
5.54	PIPE SCH STD, BE, 16", LSAW, API 5L GR. B, ASME B36.10	1206.00	MTR.	8965.96	10812953.04
5.55	PIPE SCH 10, BE, 16", ERW, API 5L GR. B, ASME B36.10	30.00	MTR.	8965.96	268978.93



## SCHEDULE OF RATES (SOR)

SL.NO	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
5.56	PIPE SCH10S,BE,16",EFW,STR,WELD,ASTM A312 TP304,ASME B36.19	252.00	MTR.	13672.68	3445514.59
5.57	PIPE SCH 10,BE,18",LSAW,API 5L GR.B,C&W,ASME B36.10	192.00	MTR.	10109.74	1941070.27
5.58	PIPE SCH 10,BE,18",ERW,API 5L GR.B,ASME B36.10	30.00	MTR.	10109.74	303292.23
5.59	PIPE SCH10S,BE,18",EFW,STR,WELD,ASTM A312 TP304,ASME B36.19	756.00	MTR.	15409.88	11649867.31
5.60	PIPE SCH 10,BE,20",LSAW,API 5L GR.B,C&W,ASME B36.10	24.00	MTR.	11262.29	270294.99
5.61	PIPE 68.00 MM, BE 1BR,20",SMLS,ASTM A335 GR.P22,ASME B36.10	432.00	MTR.	360479.47	155727129.00
5.62	PIPE SCHSTD, BE,20",LSAW,API 5L GR.B,ASME B36.10	18.00	MTR.	11262.29	202721.24
5.63	PIPE SCH XS,BE,20",SMLS,API 5L GR.B,ASME B36.10	306.00	MTR.	29155.93	8921716.02
5.64	PIPE SCH 10,BE,20",ERW,API 5L GR.B,ASME B36.10	84.00	MTR.	11262.29	946032.47
5.65	PIPE SCH STD, BE,24",LSAW,API 5L GR.B,C&W,ASME B36.10	792.00	MTR.	13566.59	10744742.80
5.66	PIPE 82.00 MM, BE 1BR,24",SMLS,ASTM A335 GR.P22,ASME B36.10	282.00	MTR.	541441.04	152686372.55
5.67	PIPE SCHSTD,BE,24",LSAW,API 5L GR.B,ASME B36.10	1146.00	MTR.	13566.59	15547317.23
5.68	PIPE SCH 40,BE,24",SMLS,API 5L GR.B,ASME B36.10	18.00	MTR.	66473.84	1196529.12
5.69	PIPE SCHSTD,BE,24",ERW,API 5L GR.B,ASME B36.10	30.00	MTR.	13566.59	406997.83
5.70	PIPE SCH STD,BE,28",EFW,ASTM A671 GR.CC60,CL32,ASME B36.10	30.00	MTR.	45280.47	1358414.19
5.71	PIPE SCHSTD,BE,30",LSAW,API 5L GR.B,C&W,ASME B36.10	768.00	MTR.	17001.11	13056856.12
5.72	PIPE SCHSTD,BE,30",ERW,API 5L GR.B,ASME B36.10	24.00	MTR.	17001.11	408026.75
5.73	PIPE SCH 10S,BE,32",EFW,STR,WELD,ASTM A312 TP304,ASME B36.19	294.00	MTR.	52410.33	15408637.91
5.74	PIPE SCH XS, BE,42",EFW,ASTM A671 GR.CC60,CL32,ASME B36.10	870.00	MTR.	45346.67	39451607.18
5.75	PIPE SCH XS, BE,44",LSAW,API 5L GR.B,ASME B36.10	60.00	MTR.	36447.71	2186862.60



## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
5.76	PIPE SCH XS, BE, 48", LSAW, API 5L GR. B ASME B36.10	1044.00	MTR.	36319.29	37917343.32
5.77	PIPE SCH 10S, BE, 20", EFW STR. WELD, ASTM A312 TP304, ASME B36.19	2.00	MTR.	11262.29	22524.58
6.00	VALVE				
6.11	GATE VALVE				
6.12	GATE VALVE 800# SOCW IBR, 3/4", CS BODY ASTM A105, GAV201S	46.00	NOS	2378.48	109410.13
6.13	GATE VALVE 1500# SOCW IBR, 3/4", CS BODY ASTM A105, GAV204S	19.00	NOS	2378.48	45191.14
6.14	GATE VALVE 800# SOCW, 3/4", CS BODY ASTM A105, GAV201	190.00	NOS	1730.02	328704.17
6.15	GATE VALVE 800# THD, 3/4", CS BODY ASTM A105, GAV207	17.00	NOS	1730.02	29410.37
6.16	GATE VALVE 800# SOCW, 3/4", SS BODY ASTM A182 GR F304, GAV501	37.00	NOS	3783.87	140003.36
6.17	GATE VALVE 800# SOCW, 3/4", LTCS BODY ASTM A350 GR LF2, GAV101	10.00	NOS	3026.94	30269.40
6.18	GATE VALVE 2500# BW IBR, 3/4", CR-MO BODY ASTM A182 GR F22, GAV305S	20.00	NOS	5946.20	118924.05
6.19	GATE VALVE 800# SOCW, 3/4", SS BODY AISI 316L, GAV401	12.00	NOS	4865.44	58385.25
6.20	GATE VALVE 800# SOCW IBR, 1", CS BODY ASTM A105, GAV201S	29.00	NOS	2703.11	78390.17
6.21	GATE VALVE 1500# SOCW IBR, 1", CS BODY ASTM A105, GAV204S	19.00	NOS	5405.42	102703.00
6.22	GATE VALVE 800# THD, 1", CS BODY ASTM A105, GAV207	3.00	NOS	1946.17	5838.52
6.23	GATE VALVE 2500# BW IBR, 1", CR-MO BODY ASTM A182 GR F22, GAV305S	41.00	NOS	7026.97	288105.68
6.24	GATE VALVE 2500# BW IBR, 1/2", CR-MO BODY ASTM A182 GR F22, GAV305S	41.00	NOS	23784.81	975177.24
6.25	GATE VALVE 150# FLG, 2", CS BODY ASTM A216 GR WCB, GAV210	37.00	NOS	5946.20	220009.50
6.26	GATE VALVE 150# FLG, 3", CS BODY ASTM A216 GR WCB, GAV210	2.00	NOS	9189.30	18378.59
6.27	GATE VALVE 150# FLG, 4", CS BODY ASTM A216 GR WCB, GAV210	3.00	NOS	13513.95	40541.86



## SCHEDULE OF RATES (SOR)

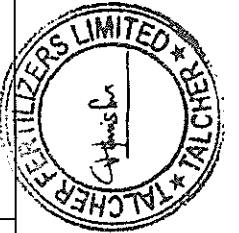
SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
6.28	BALL VALVE				
6.29	BALL VALVE (FLG), 150#, 2", CS BODY ASTM A216 GR WCB, BAV210	3.00	NOS	5946.20	17838.61
6.30	BALL VALVE (FLG), 150#, 2", SS BODY ASTM A351 GR CF8M, BAV510	4.00	NOS	9730.08	38920.31
6.31	BALL VALVE (FLG), 150#, 3", SS BODY ASTM A351 GR CF8M, BAV510	2.00	NOS	18379.39	36758.78
6.32	BALL VALVE (FLG), 150#, 8", SS BODY ASTM A351 GR CF8M, BAV520	2.00	NOS	167574.44	335148.88
6.33	BALL VALVE (FLG), 150#, 10", CS BODY ASTM A216 GR WCB, BAV210	2.00	NOS	210819.41	421638.81
6.34	GLOBE VALVE				
6.35	GLOBE VALVE(800#), 3/4", CS BODY ASTM A105, GLV201	202.00	NOS	1621.55	327552.42
6.36	GLOBE VALVE(800#), 3/4", CS BODY ASTM A105, GLV201S	38.00	NOS	1621.55	61618.77
6.37	GLOBE VALVE(800#), 3/4", SS BODY ASTM A182 GR F304, GLV501	41.00	NOS	3783.87	155138.86
6.38	GLOBE VALVE(800#), 3/4", L TCS BODY ASTM A350 GR LF2, GLV101	11.00	NOS	3135.42	34489.57
6.39	GLOBE VALVE(1500#), 3/4", CR-MO BODY ASTM A182 GR F22, GLV305S	20.00	NOS	8649.31	172986.24
6.40	GLOBE VALVE(800#), 3/4", SS BODY AISI 316L, GLV401	12.00	NOS	5189.27	62271.22
7.00	FLANGES (150#)-SO-RF/THD-RF				
7.11	FLANGE (SO-RF 125 AARH), #150 IBR, 3/4", CS ASTM A105, ASME B16.5	66.00	NOS	208.18	13739.68
7.12	FLANGE (THD-RF 125 AARH), #150, 1", ASTM A105 HOT DIP GALV., ASME B16.5	5.00	NOS	409.97	2049.86
7.13	FLANGE (SO-RF 125 AARH), #150, 1 1/2", CS ASTM A105, ASME B16.5	2.00	NOS	575.08	1150.16
7.14	FLANGE (THD-RF 125 AARH), #150, 2", ASTM A105 HOT DIP GALV., ASME B16.5	55.00	NOS	791.23	43517.75
7.15	FLANGE (SO-RF 125 AARH), #150, 2", CS ASTM A105, ASME B16.5	44.00	NOS	503.29	22144.92
7.16	FLANGE (SO-RF 125 AARH), #150, 3", ASTM A105 HOT DIP GALV., ASME B16.5	6.00	NOS	1078.37	6470.23





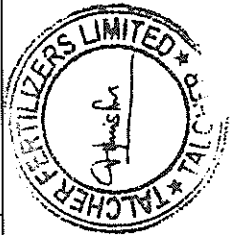
## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
7.17	FLANGE (THD-RF 125 AARH), #150, 3", CS ASTM A105, ASME B16.5	12.00	NOS	1257.84	15094.02
7.18	FLANGE (THD-RF 125 AARH), #150, 4", ASTM A105 HOT DIP GALV., ASME B16.5	9.00	NOS	1725.24	15527.13
7.19	FLANGE (SO-RF 125 AARH), #150, 4", CS ASTM A105, ASME B16.5	5.00	NOS	1078.37	5391.86
7.20	FLANGE (SO-RF 125 AARH), #150, 6", CS ASTM A105, ASME B16.5	3.00	NOS	1581.67	4745.00
7.21	FLANGE (SO-RF 125 AARH), #150, 8", CS ASTM A105, ASME B16.5	3.00	NOS	1581.67	4745.00
7.22	FLANGE (SO-RF 125 AARH), #150, 8", CS ASTM A105, ASME B16.5	8.00	NOS	2516.47	20131.74
7.23	FLANGE (SO-RF 125 AARH), #150, 10", CS ASTM A105, ASME B16.5	10.00	NOS	3954.56	39545.64
7.24	FLANGE (SO-RF 125 AARH), #150, 10", CS ASTM A105, ASME B16.5	2.00	NOS	3954.56	7909.13
7.25	FLANGE (SO-RF 125 AARH), #150, 12", CS ASTM A105, ASME B16.5	4.00	NOS	5895.16	23580.62
7.26	FLANGE (SO-RF 125 AARH), #150, 14", CS ASTM A105, ASME B16.5	5.00	NOS	8051.90	40259.50
7.27	FLANGE (SO-RF 125 AARH), #150, 16", CS ASTM A105, ASME B16.5	2.00	NOS	9777.93	19555.87
7.28	FLANGE (SO-RF 125 AARH), #150, 18", CS ASTM A105, ASME B16.5	1.00	NOS	12221.82	12221.82
7.29	FLANGE (SO-RF 125 AARH), #150, 20", CS ASTM A105, ASME B16.5	4.00	NOS	15529.52	62118.08
7.30	FLANGE (SO-RF 125 AARH), #150, 24", CS ASTM A105, ASME B16.5	2.00	NOS	21568.25	43136.49
7.31	FLANGES (150#)-WNRF				
7.32	W.N.FLANGE(WN-RJ IBR), #1500, 3/4", CS ASTM A105, ASME B16.5	35.00	NOS	970.69	33974.31
7.33	W.N.FLANGE(WN-RJ IBR), #2500, 1", ASTM A182 F22, ASME B16.5	37.00	NOS	11302.97	418209.88
7.34	W.N.FLANGE(WN-RF 125 AARH), #150, 2", ASTM A182 F304, ASME B16.5	18.00	NOS	1682.17	30278.97
7.35	W.N.FLANGE(WN-RF 125 AARH), #150, 3", ASTM A182 F304, ASME B16.5	5.00	NOS	3235.12	16175.59
7.36	W.N.FLANGE(WN-RF 125 AARH), #150, 4", ASTM A182 F304, ASME B16.5	3.00	NOS	4658.86	13976.57



## SCHEDULE OF RATES (SOR)

SL.NO	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
7.37	W.N.FLANGE(WN-RF 125 AARH),#300,6",ASTM A182 F304,ASME B16.5	3.00	NOS	13588.13	40764.39
7.38	W.N.FLANGE(WN-RF 125 AARH),#150,6",ASTM A105 HOT DIP GALV.,ASME B16.5	3.00	NOS	3306.90	9920.71
7.39	W.N.FLANGE(WN-RF 125 AARH),#150,8",ASTM A182 F304,ASME B16.5	6.00	NOS	11646.74	69880.44
7.40	W.N.FLANGE(WN-RJ IBR),#1500,10",CS ASTM A105,ASME B16.5	3.00	NOS	57515.85	172547.56
7.41	W.N.FLANGE(WN-RF 125 AARH),#150,12",ASTM A182 F316L,ASME B16.5	2.00	NOS	27176.26	54352.52
7.42	W.N.FLANGE(WN-RF 125 AARH),#150,16",ASTM A182 F304,ASME B16.5	1.00	NOS	43999.51	43999.51
7.43	W.N.FLANGE(WN-RF 125 AARH),#150,18",ASTM A182 F304,ASME B16.5	1.00	NOS	65999.26	65999.26
7.44	W.N.FLANGE(WN-RF 125 AARH),#150,28",ASTM A350 LF2 CL.1,ASME B16.47 SR.B	1.00	NOS	63300.14	63300.14
7.45	W.N.FLANGE(WN-RF 125 AARH),#150,30",CS ASTM A105,ASME B16.47 SR.B	6.00	NOS	28757.93	172547.56
7.46	W.N.FLANGE(WN-RF 125 AARH),#150,32",ASTM A182 F304L,ASME B16.47 SR.B	1.00	NOS	113142.16	113142.16
7.47	W.N.FLANGE(WN-RF 125 AARH),#150,42",ASTM A350 LF2 CL.1,ASME B16.47 SR.B	1.00	NOS	127192.11	127192.11
7.48	W.N.FLANGE(WN-RF 125 AARH),#150,44",CS ASTM A105,ASME B16.47 SR.B	1.00	NOS	93463.46	93463.46
7.49	W.N.FLANGE(WN-RF 125 AARH),#150,48",CS ASTM A105,ASME B16.47 SR.B	1.00	NOS	100652.34	100652.34
7.50	W.N.FLANGE(WN-RF 125 AARH),#150,20",SS ASTM A182 F304,ASME B16.5	1.00	NOS	65999.26	65999.26
7.51	BLIND FLANGES				
7.52	BLIND FLANGE (RF 125 AARH),150#2",CS ASTM A105,ASME B16.5	4.00	NOS	488.94	1955.75
7.53	BLIND FLANGE (RF 125 AARH),150#3",ASTM A182 F304,ASME B16.5	2.00	NOS	2199.82	4399.63
7.54	BLIND FLANGE (RF 125 AARH),150#3",ASTM A105 HOT DIP GALV.,ASME B16.5	4.00	NOS	1257.84	5031.34
7.55	BLIND FLANGE (RF 125 AARH),150#4",ASTM A105 HOT DIP GALV.,ASME B16.5	5.00	NOS	1581.67	7908.33
7.56	BLIND FLANGE (RF 125 AARH),150#6",ASTM A105 HOT DIP GALV.,ASME B16.5	2.00	NOS	2875.39	5750.79



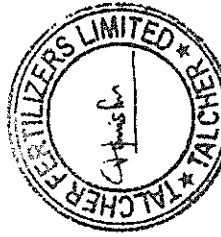
SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
7.57	BLIND FLANGE (RF 125 AARH), 150# 8", CS ASTM A105, ASME B16.5	2.00	NOS	3738.41	7476.82
7.58	BLIND FLANGE (RF 125 AARH), 150# 8", ASTM A182 F304, ASME B16.5	2.00	NOS	9188.50	18377.00
7.59	BLIND FLANGE (RF 125 AARH), 150# 10", CS ASTM A105, ASME B16.5	2.00	NOS	5176.51	10353.01
7.60	BLIND FLANGE (RF 125 AARH), 150# 24", CS ASTM A105, ASME B16.5	1.00	NOS	31633.32	31633.32
7.61	BLIND FLANGE (RF 125 AARH), 150# 30", CS ASTM A105, ASME B16.47 SR.B	5.00	NOS	54639.66	273198.30
7.62	BLIND FLANGE (RF 125 AARH), 150# 42", ASTM A350 LF2 CL.1, ASME B16.47 SR.B	1.00	NOS	278491.26	278491.26
7.63	BLIND FLANGE (RF 125 AARH), 150# 48", CS ASTM A105, ASME B16.47 SR.B	1.00	NOS	169671.36	169671.36
7.64	BLIND FLANGE (RF 125 AARH), 150# 2", SS ASTM A182 F304, ASME B16.5	3.00	NOS	2236.51	6709.52
8.00	GASKET(150#)				
8.11	GASKET (RJOCT), 1500# 3/4", SOFT IRON, ASME B16.20	80.00	NOS	174.68	13974.17
8.12	GASKET (SPRL-WND RF), 150# 3/4", TP304 SS WDG; GPH FLR; TP304 SS INR RNG; CS OTR RNG, ASME B16.20	180.00	NOS	32.70	5886.38
8.13	GASKET (3.0 MM THK RF), 150# 1", BUTYL RUBBER, ASME B16.21	12.00	NOS	23.93	287.14
8.14	GASKET (RJOCT), 2500# 1", ASTM A182 F5, ASME B16.20	85.00	NOS	513.66	43661.32
8.15	GASKET (SPRL-WND RF), 150# 11/2", TP304 SS WDG; GPH FLR; TP304 SS INR RNG; CS OTR RNG, ASME B16.20	3.00	NOS	56.63	169.89
8.16	GASKET (3.0 MM THK RF), 150# 2", BUTYL RUBBER, ASME B16.21	150.00	NOS	59.02	8853.50
8.17	GASKET (SPRL-WND RF), 150# 2", TP304 SS WDG; GPH FLR; TP304 SS INR RNG/ OTR RNG, ASME B16.20	48.00	NOS	103.69	4977.10
8.18	GASKET (SPRL-WND RF), 150# 2", TP304 SS WDG; GPH FLR; TP304 SS INR RNG; CS OTR RNG, ASME B16.20	126.00	NOS	124.43	15677.88
8.19	GASKET (3.0 MM THK RF), 150# 3", BUTYL RUBBER, ASME B16.21	15.00	NOS	101.30	1519.45
8.20	GASKET (SPRL-WND RF), 150# 3", TP304 SS WDG; GPH FLR; TP304 SS INR RNG/ OTR RNG, ASME B16.20	12.00	NOS	152.34	1828.13
8.21	GASKET (SPRL-WND RF), 150# 3", TP304 SS WDG; GPH FLR; TP304 SS INR RNG; CS OTR RNG, ASME B16.20	33.00	NOS	124.43	4106.11



## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
8.22	GASKET (3.0 MM THK RF), 150# 4", BUTYL RUBBER, ASME B16.21	24.00	NOS	165.11	3962.54
8.23	GASKET (SPRL-WND RF), 150# 4", TP304 SS WDG; GPH FLR; TP304 SS INR RNG/ OTR RNG, ASME B16.20	6.00	NOS	233.70	1402.20
8.24	GASKET (SPRL-WND RF), 150# 4", TP304 SS WDG; GPH FLR; TP304 SS INR RNG; CS OTR RNG, ASME B16.20	12.00	NOS	178.67	2143.98
8.25	GASKET (SPRL-WND RF), 300# 6", TP304 SS WDG; GPH FLR; TP304 SS INR RNG/ OTR RNG, ASME B16.20	6.00	NOS	377.27	2263.62
8.26	GASKET (SPRL-WND RF), 150# 6", TP304 SS WDG; GPH FLR; TP304 SS INR RNG; CS OTR RNG, ASME B16.20	18.00	NOS	237.69	4278.39
8.27	GASKET (SPRL-WND RF), 150# 8", TP304 SS WDG; GPH FLR; TP304 SS INR RNG/ OTR RNG, ASME B16.20	15.00	NOS	311.07	4666.03
8.28	GASKET (SPRL-WND RF), 150# 8", TP304 SS WDG; GPH FLR; TP304 SS INR RNG; CS OTR RNG, ASME B16.20	21.00	NOS	284.75	5979.70
8.29	GASKET (RJ OCT), 1500# 10", SOFT IRON, ASME B16.20	5.00	NOS	1592.03	7960.17
8.30	GASKET (SPRL-WND RF), 150# 10", TP304 SS WDG; GPH FLR; TP304 SS INR RNG; CS OTR RNG, ASME B16.20	30.00	NOS	338.19	10145.63
8.31	GASKET (SPRL-WND RF), 150# 12", TP316L SS WDG; GPH FLR; TP316L SS INR RNG/ OTR RNG, ASME B16.20	3.00	NOS	959.53	2878.58
8.32	GASKET (SPRL-WND RF), 150# 12", TP304 SS WDG; GPH FLR; TP304 SS INR RNG; CS OTR RNG, ASME B16.20	9.00	NOS	485.75	4371.72
8.33	GASKET (SPRL-WND RF), 150# 14", TP304 SS WDG; GPH FLR; TP304 SS INR RNG; CS OTR RNG, ASME B16.20	9.00	NOS	547.16	4924.46
8.34	GASKET (SPRL-WND RF), 150# 16", TP304 SS WDG; GPH FLR; TP304 SS INR RNG/ OTR RNG, ASME B16.20	3.00	NOS	974.68	2924.05
8.35	GASKET (SPRL-WND RF), 150# 16", TP304 SS WDG; GPH FLR; TP304 SS INR RNG; CS OTR RNG, ASME B16.20	6.00	NOS	718.65	4311.89
8.36	GASKET (SPRL-WND RF), 150# 18", TP304 SS WDG; GPH FLR; TP304 SS INR RNG/ OTR RNG, ASME B16.20	3.00	NOS	879.77	2639.30
8.37	GASKET (SPRL-WND RF), 150# 18", TP304 SS WDG; GPH FLR; TP304 SS INR RNG; CS OTR RNG, ASME B16.20	3.00	NOS	749.76	2249.27
8.38	GASKET (SPRL-WND RF), 150# 24", TP304 SS WDG; GPH FLR; TP304 SS INR RNG; CS OTR RNG, ASME B16.20	6.00	NOS	1138.19	6829.16
8.39	GASKET (SPRL-WND RF), 150# 30", TP304 SS WDG; GPH FLR; TP304 SS INR RNG; CS OTR RNG, ASME B16.20	18.00	NOS	1268.20	22827.68
8.40	GASKET (SPRL-WND RF), 150# 32", TP304 SS WDG; GPH FLR; TP304 SS INR RNG/ OTR RNG, ASME B16.20/B16.47 SR.B	3.00	NOS	1781.07	5343.21
8.41	GASKET (SPRL-WND RF), 150# 44", TP304 SS WDG; GPH FLR; TP304 SS INR RNG; CS OTR RNG, ASME B16.20/B16.47 SR.B	3.00	NOS	2246.87	6740.62



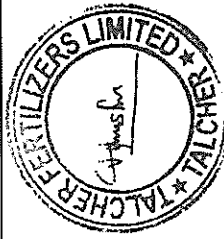
SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
8.42	GASKET (SPRL-WND RF), 150# 48", TP304 SS WDG;GPH FLR;TP304 SS INR RNG;CS OTR RNG,ASME B16.20/B16.47 SR,B	3.00	NOS	2759.74	8279.22
8.43	GASKET (SPRL-WND RF), 150# 20", TP304 SS WDG;GPH FLR;TP304 SS INR RNG/ OTR RNG,ASME B16.20	3.00	NOS	1138.19	3414.58
9.00	STUD & 2NUTS				
9.11	STUD & 2NUTS HVY HEX,5/8,ASTM A193 GR.B8 CL.2/ASTM A194 GR.8.85	90.00	NOS	37.49	3373.90
9.12	STUD & 2NUTS HVY HEX,5/8,ASTM A193 GR.B8 CL.2/ASTM A194 GR.8.95	45.00	NOS	39.88	1794.63
9.13	STUD & 2NUTS HVY HEX,3/4,ASTM A193 GR.B8 CL.2/ASTM A194 GR.8.110	56.00	NOS	65.40	3662.64
9.14	STUD & 2NUTS HVY HEX,7/8,ASTM A193 GR.B8 CL.2/ASTM A194 GR.8.120	17.00	NOS	97.31	1654.25
9.15	STUD & 2NUTS HVY HEX,1,ASTM A193 GR.B8 CL.2/ASTM A194 GR.8.140	22.00	NOS	145.96	3211.19
9.16	STUD & 2NUTS HVY HEX,1 1/8,ASTM A193 GR.B8 CL.2/ASTM A194 GR.8.150	22.00	NOS	203.39	4474.61
9.17	STUD & 2NUTS HVY HEX,1 1/2,ASTM A193 GR.B8 CL.2/ASTM A194 GR.8.255	39.00	NOS	551.15	21494.86
9.18	STUD & 2NUTS HVY HEX,7/8,ASTM A193 GR.B16/ASTM A194 GR.7.145	190.00	NOS	108.48	20610.31
9.19	STUD & 2NUTS HVY HEX,1 1/4,ASTM A320 GR.L7/ASTM A194 GR.7.220	39.00	NOS	327.02	12753.83
9.20	STUD & 2NUTS HVY HEX,1 1/2,ASTM A320 GR.L7/ASTM A194 GR.7.285	50.00	NOS	591.03	29551.55
9.21	STUD & 2NUTS HVY HEX,1/2,ASTM A193 GR.B7/ASTM A194 GR.2H,65	336.00	NOS	19.14	6431.95
9.22	STUD & 2NUTS HVY HEX,1/2,ASTM A193 GR.B7/ASTM A194 GR.2H,75	8.00	NOS	20.74	165.80
9.23	STUD & 2NUTS HVY HEX,5/8,ASTM A193 GR.B7/ASTM A194 GR.2H,85	235.00	NOS	37.49	8809.63
9.24	STUD & 2NUTS HVY HEX,5/8,ASTM A193 GR.B7/ASTM A194 GR.2H,95	106.00	NOS	39.88	4227.35
9.25	STUD & 2NUTS HVY HEX,3/4,ASTM A193 GR.B7/ASTM A194 GR.2H,100	45.00	NOS	62.21	2799.62
9.26	STUD & 2NUTS HVY HEX,3/4,ASTM A193 GR.B7/ASTM A194 GR.2H,110	78.00	NOS	65.40	5101.53
9.27	STUD & 2NUTS HVY HEX,3/4,ASTM A193 GR.B7/ASTM A194 GR.2H,115	179.00	NOS	67.00	11992.90



## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
9.28	STUD & 2NUTS HVY HEX. 7/8, ASTM A193 GR. B7/ASTM A194 GR. 2H, 120	218.00	NOS	97.31	21213.31
9.29	STUD & 2NUTS HVY HEX. 1, ASTM A193 GR. B7/ASTM A194 GR. 2H, 135	50.00	NOS	142.77	7138.63
9.30	STUD & 2NUTS HVY HEX. 1, ASTM A193 GR. B7/ASTM A194 GR. 2H, 140	45.00	NOS	145.96	6568.34
9.31	STUD & 2NUTS HVY HEX. 1 1/8, ASTM A193 GR. B7/ASTM A194 GR. 2H, 150	22.00	NOS	203.39	4474.61
9.32	STUD & 2NUTS HVY HEX. 1 1/8, ASTM A193 GR. B7/ASTM A194 GR. 2H, 160	112.00	NOS	210.57	23583.81
9.33	STUD & 2NUTS HVY HEX. 1 1/4, ASTM A193 GR. B7/ASTM A194 GR. 2H, 180	56.00	NOS	289.53	16213.87
9.34	STUD & 2NUTS HVY HEX. 1 1/4, ASTM A193 GR. B7/ASTM A194 GR. 2H, 230	235.00	NOS	336.59	79099.25
9.35	STUD & 2NUTS HVY HEX. 1 1/2, ASTM A193 GR. B7/ASTM A194 GR. 2H, 300	56.00	NOS	610.97	34214.39
9.36	STUD & 2NUTS HVY HEX. 1 1/2, ASTM A193 GR. B7/ASTM A194 GR. 2H, 310	62.00	NOS	624.53	38720.91
9.37	STUD & 2NUTS HVY HEX. 1 7/8, ASTM A193 GR. B7/ASTM A194 GR. 2H, 350	34.00	NOS	1233.91	41952.83
9.38	STUD & 2NUTS HVY HEX. 3/4, ASTM A193 GR. B8T CL. 2/ASTM A194 GR. 8TA, 125	34.00	NOS	70.19	2386.46
9.39	STUD & 2NUTS HVY HEX. 1/2, ASTM A193GR. B7/A194GR. 2H, HOT DIP GALV., 70	22.00	NOS	23.13	508.88
9.40	STUD & 2NUTS HVY HEX. 5/8, ASTM A193GR. B7/A194GR. 2H, HOT DIP GALV., 85	280.00	NOS	43.87	12283.24
9.41	STUD & 2NUTS HVY HEX. 5/8, ASTM A193GR. B7/A194GR. 2H, HOT DIP GALV., 95	118.00	NOS	47.06	5552.98
9.42	STUD & 2NUTS HVY HEX. 3/4, ASTM A193GR. B7/A194GR. 2H, HOT DIP GALV., 100	22.00	NOS	73.38	1614.37
9.43	STUD & 2NUTS HVY HEX. 1 1/8, ASTM A193GR. B8 CL. 2/A194GR. 8, 160	28.00	NOS	94.12	2635.31
10.00	ELBOW(1.5D)				
10.11	ELBOW 90 DEG (3000#), SOCW, 1/2", CS ASTM A105, ASME B16.11	327.00	NOS	52.64	17214.08
10.12	ELBOW 90 DEG (3000#), SOCW, 3/4", CS ASTM A105, ASME B16.11	327.00	NOS	89.33	29211.77
10.13	ELBOW 90 DEG (3000#), SOCW, 1/2", CS ASTM A105, ASME B16.11	198.00	NOS	113.26	22425.68



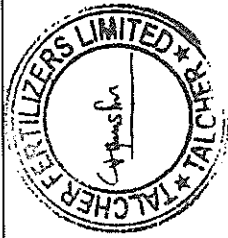
SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
10.14	ELBOW 90 DEG (6000#),SOCW,IBR,3/4",CS,ASTM A105,ASME B16.11	106.00	NOS	161.92	17163.03
10.15	ELBOW 90(BW/IBR),1",ASTM A182 F22,ASME B16.9	112.00	NOS	891.73	99873.87
10.16	ELBOW 90 DEG (3000#),THD,1",ASTM A105 HOT DIP GALV.,ASME B16.11	12.00	NOS	210.57	2526.84
10.17	ELBOW 90 DEG (SCH 40),BW,2",ASTM A234 WPB-SMLS,ASME B16.9	216.00	NOS	174.68	37730.27
10.18	ELBOW 90 DEG (SCH 40),BW,IBR,2",ASTM A234 WPB-SMLS,ASME B16.9	90.00	NOS	182.65	16438.80
10.19	ELBOW 90 DEG (3000#),THD,2",ASTM A105 HOT DIP GALV.,ASME B16.11	30.00	NOS	1049.66	31489.75
10.20	ELBOW 90 DEG (SCH 10S),BW,2",ASTM A403 WP304-WLDD,ASME B16.9	55.00	NOS	405.19	22285.30
10.21	ELBOW 90 DEG (SCH 40),BW,3",ASTM A234 WPB-SMLS,ASME B16.9	90.00	NOS	344.57	31011.18
10.22	ELBOW 90 DEG (3000#),THD,3",ASTM A105 HOT DIP GALV.,ASME B16.11	6.00	NOS	3729.64	22377.82
10.23	ELBOW 90 DEG (SCH 10S),BW,3",ASTM A403 WP304-WLDD,ASME B16.9	33.00	NOS	811.17	26768.68
10.24	ELBOW 90 DEG (SCH 40),BW,4",ASTM A234 WPB-SMLS,ASME B16.9	62.00	NOS	607.78	37682.41
10.25	ELBOW 90 DEG (3000#),THD,4",ASTM A105 HOT DIP GALV.,ASME B16.11	22.00	NOS	6486.98	142713.65
10.26	ELBOW 90 DEG (SCH 10S),BW,4",ASTM A403 WP304-WLDD,ASME B16.9	6.00	NOS	1297.72	7786.30
10.27	ELBOW 90 DEG (SCH STD),BW,6",ASTM A234 WPB-SMLS,ASME B16.9	83.00	NOS	1297.72	107710.42
10.28	ELBOW 90 DEG (SCH 40),BW,6",ASTM A234 WPB-SMLS,ASME B16.9	22.00	NOS	1297.72	28549.75
10.29	ELBOW 90 DEG (SCH 40),BW,IBR,6",ASTM A234 WPB-SMLS,ASME B16.9	10.00	NOS	1297.72	12977.16
10.30	ELBOW 90 DEG (SCH STD),BW,6",ASTM A234 WPB-SMLS,HOT DIP GALV.,ASME B16.9	29.00	NOS	1580.87	45845.18
10.31	ELBOW 90 DEG (SCH 40S),BW,6",ASTM A403 WP304-WLDD,ASME B16.9	10.00	NOS	5675.81	56758.12
10.32	ELBOW 90 DEG (SCH 20),BW,IBR,8",ASTM A234 WPB-SMLS,ASME B16.9	24.00	NOS	2108.09	50594.17
10.33	ELBOW 90 DEG (SCH 20),BW,8",ASTM A234 WPB-WLDD,ASME B16.9	68.00	NOS	2108.09	143350.15



SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
10.34	ELBOW 90 DEG (SCH 10S),BW ,8",ASTM A403 WP304-WLDD,ASME B16.9	28.00	NOS	5837.73	163456.37
10.35	ELBOW 90 DEG (SCH 20),BW ,10",ASTM A234 WPB-SMLS,ASME B16.9	116.00	NOS	3081.18	357416.63
10.36	ELBOW 90 DEG (SCH 140),BW ,10",ASTM A234 WPB-SMLS,ASME B16.9	99.00	NOS	19865.34	1966668.85
10.37	ELBOW 90 DEG (SCH 20),BW ,10",ASTM A234 WPB-WLDD,ASME B16.9	83.00	NOS	3081.18	255737.76
10.38	ELBOW 90 DEG (SCH 20),BW ,10",ASTM A234 WPB-WLDD,PDIL-PDS-600	26.00	NOS	3081.18	80110.62
10.39	ELBOW 90 DEG (SCH 20),BW ,12",ASTM A234 WPB-WLDD,ASME B16.9	32.00	NOS	4865.44	155694.00
10.40	ELBOW 90 DEG (SCH 10 S),BW ,14",ASTM A403 WP316L-WLDD,ASME B16.9	42.00	NOS	30811.78	1294094.70
10.41	ELBOW 90 DEG (SCH 10),BW ,14",ASTM A234 WPB-WLDD,ASME B16.9	34.00	NOS	7297.36	248110.19
10.42	ELBOW 90 DEG (SCH 10 S),BW ,14",ASTM A403 WP304-WLDD,ASME B16.9	4.00	NOS	23514.42	94057.68
10.43	ELBOW 90 DEG (SCH 10),BW ,16",ASTM A234 WPB-WLDD,ASME B16.9	3.00	NOS	11351.62	34054.87
10.44	ELBOW 90 DEG (SCH STD),BW ,16",ASTM A234 WPB-WLDD,ASME B16.9	42.00	NOS	12892.61	541489.69
10.45	ELBOW 90 DEG (SCH 10S),BW ,16",ASTM A403 WP304-WLDD,ASME B16.9	7.00	NOS	27163.50	190144.49
10.46	ELBOW 90 DEG (SCH 10),BW ,18",ASTM A234 WPB-WLDD,ASME B16.9	4.00	NOS	17027.44	68109.74
10.47	ELBOW 90 DEG (SCH 10 S),BW ,18",ASTM A403 WP304-WLDD,ASME B16.9	17.00	NOS	32028.14	544478.35
10.48	ELBOW 90 DEG (SCH XS),BW ,20",ASTM A234 WPB-SMLS,ASME B16.9	17.00	NOS	26757.51	454877.73
10.49	ELBOW 90 DEG (68.0MM),BW ,20",ASTM A234 WP22,ASME B16.9	44.00	NOS	542454.01	23857976.24
10.50	ELBOW 90 DEG (SCH 10),BW ,20",ASTM A234 WPB-WLDD,ASME B16.9	2.00	NOS	21001.14	42002.28
10.51	ELBOW 90 DEG (82.0MM),BW ,24",ASTM A234 WP22,ASME B16.9	35.00	NOS	1185046.69	41476634.17
10.52	ELBOW 90 DEG (SCH STD),BW ,24",ASTM A234 WPB-WLDD,ASME B16.9	51.00	NOS	31622.95	1612770.49
10.53	ELBOW 90 DEG (SCH STD),BW ,28",ASTM A420 WPL6-WLDD,ASME B16.9	3.00	NOS	64056.28	192168.83





## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
10.54	ELBOW 90 DEG (SCH STD),BW,30",ASTM A234 WPB-WLDD,ASME B16.9	2.00	NOS	68921.71	137843.43
10.55	ELBOW 90 DEG (SCH 10),BW,32",ASTM A403 WP304L-WLDD,ASME B16.9	12.00	NOS	166222.49	1994669.84
10.56	ELBOW 90 DEG (SCH XS),BW 42",ASTM A420 WPL6-WLDD,ASME B16.9	30.00	NOS	196223.89	5886716.74
10.57	ELBOW 90 DEG (SCH XS),BW 44",ASTM A234 WPB-WLDD,ASME B16.9	1.00	NOS	195413.52	195413.52
10.58	ELBOW 90 DEG (SCH XS),BW 48",ASTM A234 WPB-WLDD,ASME B16.9	40.00	NOS	239198.47	9567938.64
10.59	ELBOW 45 DEG(BW)				
10.60	ELBOW 45 DEG (SCHSTD),BW,6",ASTM A234 WPB-SMLS,ASME B16.9	9.00	NOS	729.82	6568.34
10.61	ELBOW 45 DEG(SCH20),BW 1/8",ASTM A234 WPB-SMLS,ASME B16.9	3.00	NOS	1135.00	3405.01
10.62	ELBOW 45 DEG(SCH20),BW,42",ASTM A403 WP316L-WLDD,ASME B16.9	7.00	NOS	514074.15	3598519.04
10.63	ELBOW 45 DEG(SCH20),BW,10",ASTM A234 WPB-WLDD,ASME B16.9	5.00	NOS	1621.55	8107.73
10.64	ELBOW 45 DEG(SCH20),BW,12",ASTM A234 WPB-WLDD,ASME B16.9	4.00	NOS	2432.72	9730.87
10.65	ELBOW 45 DEG(SCH10S),BW,14",ASTM A403 WP316L-WLDD,ASME B16.9	5.00	NOS	17027.44	85137.18
10.66	ELBOW 45 DEG(SCH10),BW,14",ASTM A234 WPB-WLDD,ASME B16.9	4.00	NOS	4054.27	16217.06
10.67	ELBOW 45 DEG(SCH10),BW,16",ASTM A234 WPB-WLDD,ASME B16.9	1.00	NOS	7297.36	7297.36
10.68	ELBOW 45 DEG(SCH STD),BW,16",ASTM A234 WPB-WLDD,ASME B16.9	4.00	NOS	8513.72	34054.87
10.69	ELBOW 45 DEG(SCH 10),BW,18",ASTM A234 WPB-WLDD,ASME B16.9	1.00	NOS	10541.25	10541.25
10.70	ELBOW 45 DEG(SCH 10S),BW,18",ASTM A403 WP304-WLDD,ASME B16.9	1.00	NOS	19054.97	19054.97
10.71	ELBOW 45 DEG(68.0MM),BW 1/8",20",ASTM A234 WP22,ASME B16.9	13.00	NOS	328391.51	4269089.58
10.72	ELBOW 45 DEG(SCH 10),BW,20",ASTM A234 WPB-WLDD,ASME B16.9	9.00	NOS	12973.17	116758.54
10.73	ELBOW 45 DEG(82.0MM),BW 1/8",24",ASTM A234 WP22,ASME B16.9	15.00	NOS	770300.85	11554512.71



## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
10.74	ELBOW 45 DEG(SCH STD),BW,24",ASTM A234 WPB-WLDD,ASME B16.9	8.00	NOS	17027.44	136219.49
10.75	ELBOW 45 DEG(SCH STD),BW,30",ASTM A234 WPB-WLDD,ASME B16.9	6.00	NOS	42164.20	252985.20
10.76	ELBOW 45 DEG(SCH10S),BW,32",ASTM A403 WP304L-WLDD,ASME B16.9	2.00	NOS	99733.49	199466.98
10.77	ELBOW 45 DEG(SCH XS),BW,42",ASTM A420 WPL 6-WLDD,ASME B16.9	3.00	NOS	126491.80	379475.41
10.78	ELBOW 45 DEG(SCH XS),BW,48",ASTM A234 WPB-WLDD,ASME B16.9	4.00	NOS	133789.16	535156.65
11.00	SOCKOLET(SOCW)				
11.11	SOCKOLET,SOCW,3000#,2"X3/4",CS ASTM A105,MSS SP 97	57.00	NOS	267.20	15230.41
11.12	SOCKOLET,SOCW,3000#,2"X3/4",CS ASTM A105,MSS SP 97	12.00	NOS	267.20	3206.40
11.13	SOCKOLET,SOCW,IBR,3000#,2"X3/4",ASTM A182 F304,MSS SP 97	26.00	NOS	441.88	11488.81
11.14	SOCKOLET,SOCW,3000#,3"X3/4",CS ASTM A105,MSS SP 97	53.00	NOS	267.20	14161.61
11.15	SOCKOLET,SOCW,3000#,3"X3/4",ASTM A182 F304,MSS SP 97	9.00	NOS	441.88	3976.90
11.16	SOCKOLET,SOCW,3000#,4"X3/4",CS ASTM A105,MSS SP 97	23.00	NOS	267.20	6145.61
11.17	SOCKOLET,SOCW,3000#,4"X3/4",ASTM A182 F304,MSS SP 97	5.00	NOS	441.88	2209.39
11.18	SOCKOLET,SOCW,3000#,6"X3/4",CS ASTM A105,MSS SP 97	47.00	NOS	267.20	12558.41
11.19	SOCKOLET,SOCW,IBR,3000#,6"X3/4",CS ASTM A105,MSS SP 97	6.00	NOS	267.20	1603.20
11.20	SOCKOLET,SOCW,3000#,6"X3/4",ASTM A182 F304,MSS SP 97	6.00	NOS	441.88	2651.26
11.21	SOCKOLET,SOCW,3000#,8"X3/4",CS ASTM A105,MSS SP 97	22.00	NOS	267.20	5876.41
11.22	SOCKOLET,SOCW,3000#,IBR,8"X3/4",CS ASTM A105,MSS SP 97	31.00	NOS	267.20	8283.21
11.23	SOCKOLET,SOCW,6000#,IBR,8"X3/4",CS ASTM A105,MSS SP 97	18.00	NOS	267.20	4809.60
11.24	SOCKOLET,SOCW,3000#,8"X3/4",ASTM A182 F304,MSS SP 97	7.00	NOS	441.88	3093.14



## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
11.25	SOCKOLET,SOCW,3000#,10"X3/4",CS ASTM A105,MSS SP 97	45.00	NOS	267.20	12024.01
11.26	SOCKOLET,SOCW,3000#,1BR,10"X3/4",CS ASTM A105,MSS SP 97	22.00	NOS	267.20	5878.41
11.27	SOCKOLET,SOCW,3000#,1BR,10"X3/4",CS ASTM A105,MSS SP 97	18.00	NOS	267.20	4809.60
11.28	SOCKOLET,SOCW,3000#,12"X3/4",CS ASTM A105,MSS SP 97	25.00	NOS	267.20	6680.01
11.29	SOCKOLET,SOCW,3000#,14"X3/4",CS ASTM A105,MSS SP 97	17.00	NOS	267.20	4542.40
11.30	SOCKOLET,SOCW,3000#,14"X3/4",ASTM A182 F304,MSS SP 97	3.00	NOS	441.88	1325.63
11.31	SOCKOLET,SOCW,3000#,14"X3/4",ASTM A182 F316L,MSS SP 97	22.00	NOS	441.88	9721.30
11.32	SOCKOLET,SOCW,3000#,16"X3/4",CS ASTM A105,MSS SP 97	22.00	NOS	267.20	5878.41
11.33	SOCKOLET,SOCW,3000#,16"X3/4",ASTM A182 F304,MSS SP 97	4.00	NOS	441.88	1767.51
11.34	SOCKOLET,SOCW,3000#,18"X3/4",ASTM A182 F304,MSS SP 97	8.00	NOS	441.88	3535.02
11.35	SOCKOLET,SOCW,3000#,20"X3/4",CS ASTM A105,MSS SP 97	8.00	NOS	267.20	2137.60
11.36	SOCKOLET,SOCW,3000#,24"X3/4",CS ASTM A105,MSS SP 97	22.00	NOS	267.20	5878.41
11.37	SOCKOLET,SOCW,3000#,32"X3/4",ASTM A350 LF2 CL.1,MSS SP 97	16.00	NOS	410.77	6572.33
11.38	SOCKOLET,SOCW,3000#,42"X3/4",ASTM A182 F304L,MSS SP 97	6.00	NOS	441.88	2651.26
11.39	SOCKOLET,SOCW,3000#,44"X3/4",CS ASTM A105,MSS SP 97	1.00	NOS	267.20	267.20
11.40	SOCKOLET,SOCW,3000#,48"X3/4",CS ASTM A105,MSS SP 97	22.00	NOS	267.20	5878.41
12.00	WELDOLET				
12.11	WELDOLET(BW),6"X2",ASTM A105 HOT DIP GALV.,MSS SP 97	5.00	NOS	1129.42	5647.10
12.12	WELDOLET(BW),8"X3",CS ASTM A105,MSS SP 97	3.00	NOS	2773.30	8319.90
12.13	WELDOLET(BW),8"X2",CS ASTM A105,MSS SP 97	6.00	NOS	924.43	5546.60



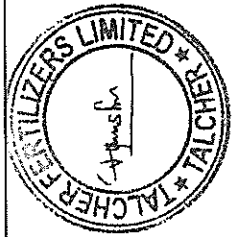
## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
12.14	WELDOLET(BW, IBR),8"X2",CS ASTM A105,MSS SP 97	8.00	NOS	924.43	7395.46
12.15	WELDOLET(BW),10"X4",CS ASTM A105,MSS SP 97	2.00	NOS	4776.10	9552.21
12.16	WELDOLET(BW),10"X3",CS ASTM A105,MSS SP 97	2.00	NOS	2773.30	5546.60
12.17	WELDOLET(BW, IBR),10"X3",CS ASTM A105,MSS SP 97	2.00	NOS	3176.89	6353.78
12.18	WELDOLET(BW),10"X2",CS ASTM A105,MSS SP 97	7.00	NOS	924.43	6471.03
12.19	WELDOLET(BW, IBR),10"X2",CS ASTM A105,MSS SP 97	17.00	NOS	1027.33	17464.53
12.20	WELDOLET(BW, IBR),12"X1",ASTM A182 F22,MSS SP 97	19.00	NOS	975.48	18534.13
12.21	WELDOLET(BW, IBR),20"X12",ASTM A182 F22,MSS SP 97	10.00	NOS	70867.89	708678.89
12.22	WELDOLET(BW, IBR),20"X3/4",ASTM A182 F22,MSS SP 97	9.00	NOS	770.49	6934.44
12.23	WELDOLET(BW),24"X6",CS ASTM A105,MSS SP 97	1.00	NOS	12324.71	12324.71
12.24	WELDOLET(BW),24"X2",CS ASTM A105,MSS SP 97	1.00	NOS	924.43	924.43
12.25	WELDOLET(BW, IBR),24"X12",ASTM A182 F22,MSS SP 97	18.00	NOS	70867.89	1275621.99
12.26	WELDOLET(BW, IBR),24"X3/4",ASTM A182 F22,MSS SP 97	9.00	NOS	770.49	6934.44
12.27	WELDOLET(BW),28"X3",ASTM A350 LF2 CL.1,MSS SP 97	1.00	NOS	2978.29	2978.29
13.00	THREDOLET				
13.10	THREDOLET,3000#, THD,6"X3/4",ASTM A105 HOT DIP GALV.,MSS SP 97	13.00	NOS	410.77	5340.02
14.00	TEE				
14.11	TEE(THD),1"X1",ASTM A105 HOT DIP GALV.,ASME B16.11	3.00	NOS	359.72	1079.17
14.12	TEE(THD),2"X2",ASTM A234 WPB-SMLS,ASME B16.11	14.00	NOS	513.66	7191.28
14.13	TEE(THD),2"X2",ASTM A105 HOT DIP GALV.,ASME B16.11	2.00	NOS	513.66	1027.33



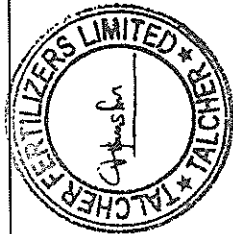
SCHEDULE OF RATES (SOR)

SL. NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
14.14	TEE(THD),2"X1",ASTM A105 HOT DIP GALV.,ASME B16.11	28.00	NOS	1540.99	43147.66
14.15	TEE(THD),3"X3",ASTM A105 HOT DIP GALV.,ASME B16.11	2.00	NOS	5135.03	10270.06
14.16	TEE(THD),3"X2",ASTM A105 HOT DIP GALV.,ASME B16.11	4.00	NOS	5135.03	20540.12
14.17	TEE(THD),3"X1",ASTM A105 HOT DIP GALV.,ASME B16.11	3.00	NOS	5135.03	15405.09
14.18	TEE(THD),3"X2",ASTM A403 WP304-WLDD,ASME B16.9	4.00	NOS	1643.08	6572.33
14.19	TEE(BW),4"X4",ASTM A234 WPB-SMLS,ASME B16.9	3.00	NOS	1181.26	3543.79
14.20	TEE(THD),4"X4",ASTM A105 HOT DIP GALV.,ASME B16.11	4.00	NOS	10784.52	43138.09
14.21	TEE(BW),4"X2",ASTM A234 WPB-SMLS,ASME B16.9	4.00	NOS	1181.26	4725.06
14.22	TEE(THD),4"X3",ASTM A105 HOT DIP GALV.,ASME B16.11	2.00	NOS	11297.39	22594.77
14.23	TEE(THD),4"X2",ASTM A105 HOT DIP GALV.,ASME B16.11	19.00	NOS	11297.39	214650.34
14.24	TEE(THD),4"X3/4",ASTM A105 HOT DIP GALV.,ASME B16.11	3.00	NOS	11297.39	33892.16
14.25	TEE(BW),4"X2",ASTM A403 WP304-WLDD,ASME B16.9	2.00	NOS	3389.06	6778.11
14.26	TEE(BW),6"X6",ASTM A234 WPB-SMLS,HOT DIP GALV.,ASME B16.9	2.00	NOS	3184.07	6368.14
14.27	TEE(BW),6"X4",ASTM A234 WPB-SMLS,HOT DIP GALV.,ASME B16.9	9.00	NOS	3184.07	28656.63
14.28	TEE(BW),6"X3",ASTM A234 WPB-SMLS,HOT DIP GALV.,ASME B16.9	2.00	NOS	3184.07	6368.14
14.29	TEE(BW),JBR,8"X8",ASTM A234 WPB-SMLS,ASME B16.9	5.00	NOS	4210.60	21052.99
14.30	TEE(BW),8"X8",ASTM A234 WPB-WLDD,ASME B16.9	2.00	NOS	9243.53	18487.07
14.31	TEE(BW),8"X8",ASTM A403 WP304-WLDD,ASME B16.9	3.00	NOS	13014.55	39043.94
14.32	TEE(BW),8"X4",ASTM A403 WP304-WLDD,ASME B16.9	3.00	NOS	9243.53	27730.60
14.33	TEE(BW),10"X10",ASTM A234 WPB-WLDD,ASME B16.9	2.00	NOS	9038.55	18077.09



SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
14.34	TEE(BW),IBR,10"X8",ASTM A234 WPB-SMLS,ASME B16.9	22.00	NOS	9321.70	205077.39
14.35	TEE(BW),IBR,10"X8",ASTM A234 WPB-SMLS,ASME B16.9	18.00	NOS	9321.70	167790.59
14.36	TEE(BW),10"X8",ASTM A234 WPB-WLDD,ASME B16.9	2.00	NOS	7279.81	14559.62
14.37	TEE(BW),18"X14",ASTM A403 WP304-WLDD,ASME B16.9	1.00	NOS	50521.59	50521.59
14.38	TEE(BW),24"X24",ASTM A234 WPB-WLDD,ASME B16.9	1.00	NOS	43136.49	43136.49
14.39	TEE(BW, IBR),24"X20",ASTM A234 WP22,ASME B16.9	1.00	NOS	1283834.21	1283834.21
14.40	TEE(BW),30"X30",ASTM A234 WPB-WLDD,ASME B16.9	2.00	NOS	128383.74	256767.48
15.00	REDUCER				
15.11	REDUCER ECC.,2"x1/2",ASTM A234 WPB-SMLS,ASME B16.9	2.00	NOS	168.30	336.59
15.12	REDUCER ECC.,3"x2",ASTM A234 WPB-SMLS,ASME B16.9	2.00	NOS	299.10	598.21
15.13	REDUCER ECC.,4"x3",ASTM A234 WPB-SMLS,ASME B16.9	3.00	NOS	418.75	1256.24
15.14	REDUCER ECC.,4"x2",ASTM A234 WPB-SMLS,ASME B16.9	3.00	NOS	496.91	1490.74
15.15	REDUCER ECC.,4"x3",ASTM A105 HOT DIP GALV.,ASME B16.11	2.00	NOS	616.55	1233.11
15.16	REDUCER ECC.,6"x4",ASTM A234 WPB-SMLS,ASME B16.9	3.00	NOS	616.55	1849.66
15.17	REDUCER ECC.,6"x4",ASTM A234 WPB-SMLS,ASME B16.9	2.00	NOS	924.43	1848.87
15.18	REDUCER ECC.,6"x6",ASTM A234 WPB-SMLS,HOT DIP GALV.,ASME B16.9	2.00	NOS	924.43	1848.87
15.19	REDUCER ECC.,8"x6",ASTM A234 WPB-WLDD,ASME B16.9	2.00	NOS	924.43	1848.87
15.20	REDUCER ECC.,8"x4",ASTM A403 WP304-WLDD,ASME B16.9	2.00	NOS	7189.68	14379.36
15.21	REDUCER ECC.,10"x8",ASTM A234 WPB-SMLS,ASME B16.9	2.00	NOS	4895.75	9791.49
15.22	REDUCER ECC.,10"x3",ASTM A234 WPB-WLDD,ASME B16.9	2.00	NOS	2464.62	4929.25



## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
15.23	REDUCER ECC., 12"x10", ASTM A234 WPB-WLDD, ASME B16.9	2.00	NOS	11811.05	23622.10
15.24	REDUCER ECC., 14"x12", ASTM A403 WP316L-WLDD, ASME B16.9	2.00	NOS	3594.84	7189.68
15.25	REDUCER ECC., 16"x14", ASTM A403 WP304-WLDD, ASME B16.9	1.00	NOS	9757.20	9757.20
15.26	REDUCER ECC., 18"x16", ASTM A403 WP304-WLDD, ASME B16.9	1.00	NOS	11297.39	11297.39
15.27	REDUCER ECC., 24"x20", ASTM A234 WPB-SMLS, ASME B16.9	1.00	NOS	14378.56	14378.56
15.28	REDUCER ECC., 24"x20", ASTM A234 WP22, ASME B16.9	1.00	NOS	22595.57	22595.57
15.29	REDUCER ECC., 24"x20", ASTM A234 WPB-WLDD, ASME B16.9	1.00	NOS	644998.28	644998.28
15.30	REDUCER ECC., 24"x18", ASTM A234 WPB-WLDD, ASME B16.9	1.00	NOS	20541.72	20541.72
15.31	REDUCER ECC., 20"x18", ASTM A403 WP304-WLDD, ASME B16.9	1.00	NOS	14895.42	14895.42
16.00	CAP				
16.11	CAP 3/4, CS ASTM A105, ASME B16.11	363.00	NOS	82.15	29821.94
16.12	CAP 3/4, CS ASTM A105, ASME B16.11	44.00	NOS	70.19	3088.36
16.13	CAP 3/4, CS ASTM A105, ASME B16.11	18.00	NOS	70.19	1263.42
16.14	CAP 1, CS ASTM A105, ASME B16.11	26.00	NOS	100.50	2612.98
16.15	CAP 1, CS ASTM A105, ASME B16.11	18.00	NOS	100.50	1808.99
16.16	CAP 3/4, ASTM A182 F22, ASME B16.9	19.00	NOS	557.53	10593.09
16.17	CAP 1 1/2, ASTM A182 F22, ASME B16.9	19.00	NOS	1107.88	21049.80
16.18	CAP 3/4, ASTM A182 F304, ASME B16.11	66.00	NOS	283.15	18688.07
16.19	CAP 3/4, ASTM A350 LF2 CL.1, ASME B16.11	19.00	NOS	289.53	5501.13
16.20	CAP 2, ASTM A234 WPB-SMLS, ASME B16.9	7.00	NOS	107.68	753.74



## SCHEDULE OF RATES (SOR)

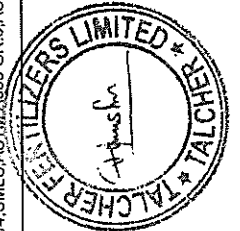
SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
16.21	CAP.8,ASTM A234 WPB-SMLS,ASME B16.9	26.00	NOS	1286.55	33450.28
16.22	CAP.8,ASTM A234 WPB-SMLS,ASME B16.9	18.00	NOS	1286.55	23157.89
16.23	CAP.3/4,ASTM A182 F304L,ASME B16.11	7.00	NOS	283.15	1982.07
16.24	CAP.3/4,ASTM A182 F316L,ASME B16.11	22.00	NOS	382.91	7984.10
16.25	CAP.1/2,ASTM A234 WP22,ASME B16.9	19.00	NOS	12272.07	233169.31
16.26	CAP.3/4,ASTM A105 HOT DIP GALV.,ASME B16.11	15.00	NOS	110.07	1651.06
16.27	CAP.1,ASTM A105 HOT DIP GALV.,ASME B16.11	3.00	NOS	150.75	452.25
16.28	CAP.2,ASTM A105 HOT DIP GALV.,ASME B16.11	28.00	NOS	549.56	15387.54
16.29	CAP.3,ASTM A105 HOT DIP GALV.,ASME B16.11	2.00	NOS	1195.62	2391.24
16.30	CAP.4,ASTM A105 HOT DIP GALV.,ASME B16.11	3.00	NOS	1683.76	5051.28
17.00	COUPLING				
17.10	COUPLING,1/2,CS ASTM A105,ASME B16.11	400.00	NOS	53.44	21376.02
17.20	COUPLING,3/4,CS ASTM A105,ASME B16.11	400.00	NOS	63.81	25523.61
17.30	COUPLING,3/4,CS ASTM A105,ASME B16.11	60.00	NOS	63.81	3828.54
17.40	COUPLING,3/4,CS ASTM A105,ASME B16.11	33.00	NOS	63.81	2105.70
17.50	COUPLING,1/2,CS ASTM A105,ASME B16.11	5.00	NOS	170.69	853.45
17.60	COUPLING,1,ASTM A105 HOT DIP GALV.,ASME B16.11	17.00	NOS	134.80	2291.54
17.70	COUPLING,2,ASTM A105 HOT DIP GALV.,ASME B16.11	123.00	NOS	475.38	58471.39
17.80	COUPLING,3,ASTM A105 HOT DIP GALV.,ASME B16.11	136.00	NOS	1037.69	141126.40
17.90	COUPLING,4,ASTM A105 HOT DIP GALV.,ASME B16.11	550.00	NOS	1537.80	845788.51





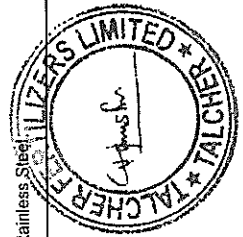
## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
18.00	HALF COUPLING				
18.10	HALF COUPLING,3/4,CS ASTM A105,ASME B16.11	7.00	NOS	70.19	491.33
18.20	HALF COUPLING,1,CS ASTM A105,ASME B16.11	26.00	NOS	100.50	2612.98
18.30	HALF COUPLING,1,CS ASTM A105,ASME B16.11	18.00	NOS	100.50	1808.99
19.00	NIPPLE				
19.11	NIPPLE,3/4,SMLS,ASTM A106 GR.B,ASME B36.10	66.00	NOS	74.98	4948.39
19.12	NIPPLE,3/4,SMLS,ASTM A106 GR.B,ASME B36.10	66.00	NOS	74.98	4948.39
19.13	NIPPLE,3/4,SMLS,ASTM A106 GR.B,ASME B36.10	18.00	NOS	74.98	1349.56
19.14	NIPPLE,1,SMLS,ASTM A106 GR.B,ASME B36.10	5.00	NOS	116.45	582.26
19.15	NIPPLE,1,SMLS,ASTM A106 GR.B,ASME B36.10	5.00	NOS	116.45	582.26
19.16	NIPPLE,1,SMLS,ASTM A106 GR.B,ASME B36.10	18.00	NOS	116.45	2096.13
19.17	NIPPLE,1,SMLS,ASTM A106 GR.B,ASME B36.10	18.00	NOS	116.45	2096.13
19.18	NIPPLE,3/4,SMLS,ASTM A312 TP304L,ASME B36.19	7.00	NOS	338.99	2372.90
19.19	NIPPLE,3/4,SMLS,ASTM A312 TP304L,ASME B36.19	7.00	NOS	338.99	2372.90
19.20	NIPPLE,3/4,SMLS,ASTM A312 TP316L,ASME B36.19	22.00	NOS	405.98	8931.57
19.21	NIPPLE,3/4,SMLS,ASTM A312 TP316L,ASME B36.19	22.00	NOS	405.98	8931.57
19.22	NIPPLE,3/4,SMLS,API 5L GR.B,ASME B36.10	360.00	NOS	74.98	26991.21
19.23	NIPPLE,3/4,SMLS,API 5L GR.B,ASME B36.10	363.00	NOS	74.98	27216.14
19.24	NIPPLE,3/4,SMLS,ASTM A106 GR.B,HOT DIP GALV.,ASME B36.10	31.00	NOS	120.44	3733.63
19.25	NIPPLE,3/4,SMLS,ASTM A333 GR.6,ASME B36.10	19.00	NOS	295.91	5622.37



## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
19.26	NIPPLE, 3/4, SMLS, ASTM A333 GR.6, ASME B36.10	19.00	NOS	295.91	5622.37
19.27	NIPPLE, 3/4, SMLS, ASTM A312 TP304, ASME B36.19	65.00	NOS	338.99	22034.05
19.28	NIPPLE, 3/4, SMLS, ASTM A312 TP304, ASME B36.19	66.00	NOS	338.99	22373.04
19.29	STEAM TRAP (Refer PMS- Annexure for STEAM TRAP)				
19.30	STEAM TRAP, 1, 2500#, FLG.	3.00	NOS	32091.95	96275.84
19.31	STEAM TRAP, 3/4, 300#, FLG.	16.00	NOS	24649.42	394390.77
19.32	STEAM TRAP, 3/4, 150#, FLG.	32.00	NOS	10757.40	344236.88
19.33	STEAM MANIFOLD (Refer PMS- Annexure for STEAM MANIFOLD)	12.00	NOS	29082.55	348990.65
19.34	CONDENSATE MANIFOLD (Refer PMS- Annexure for CONDENSATE MANIFOLD )	12.00	NOS	121248.30	1454979.57
20.00	SUPPLY OF PIPING ITEMS ON THE BASIS OF WEIGHT BASIS: This SOR item is applicable only when the extra supply items comes with different sizes, which are not included in SOR item "SUPPLY OF PIPING ITEMS" & applicable only after approval of Client/PMC.				
20.11	PIPING ≤ 2" SIZE				
20.12	Carbon Steel (Non-IBR)	1.00	MT.	258283.74	258283.74
20.13	Carbon Steel (IBR)	1.00	MT.	317777.67	317777.67
20.14	Alloy Steel (IBR)	1.00	MT.	474214.25	474214.25
20.15	Stainless Steel	1.00	MT.	416906.58	416906.58
20.16	PIPING > 2" SIZE				
20.17	Carbon Steel (Non-IBR)	1.00	MT.	251697.85	251697.85
20.18	Carbon Steel (IBR)	1.00	MT.	222435.04	222435.04
20.19	Alloy Steel (IBR)	1.00	MT.	782919.88	782919.88
20.20	Stainless Steel	1.00	MT.	430658.22	430658.22



SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
20.21	Note: This item is applicable for the material & sizes, which are not covered under SOR item "SUPPLY OF PIPING ITEMS" & also applicable for future new upcoming sizes(Extra Items) & applicable only after approval of Client/PMC.				
21.00	FABRICATION & ERECTION OF PIPING (AG & UG):				
22.00	FABRICATION & ERECTION OF PIPING(AG):				
22.10	<p>Loading/unloading &amp; Transportation of all piping items at work site/work shop; fabrication including cutting, edge preparation, (inclusive of grinding the edges of pipe, fittings, flanges etc. to match with the mating edges of uneven/different thickness wherever required); flipup, bending, providing all branch connections, preheating wherever required, welding, threading, and erection/ laying of pipes of all types and thickness over sleepers, overhead on racks and at all elevations, connecting with equipment nozzles, strainers, steam traps, onifice assemblies, spray nozzles, rotameters, tappings for pressure gauges, thermowells, sample connections, springs, sample coolers etc. and fixing of gaskets, bolts, nuts including application of torque wherever required &amp; all other inline instruments and fittings, like elbows, reducers, tees, vents, drains (but excluding reinforcing pads), SW valves upto 1.5 inch NB, Steam Supply/ Condensate Recovery stations(Cast/Fabricated), Supply &amp; welding of Strip to all pipes before hydro-testing at exit points of Units for earthing purpose; alignment, cleaning &amp; flushing by water/compressed air, hydrostatic, pneumatic vacuum, and any other type of testing as specified draining, drying by compressed air, flushing and blowing, seal/leak testing and making ready for commissioning as per drawings, performing Positive Material Identification (PMI) using alloy analysers (if required), completing all such works in all respects (including preparation of isometrics as mentioned in the Scope of Work for the job) as per the specifications, drawings and instructions of Engineer-in-Charge, PMI shall be performed by third party as defined in PMI spec. Rates for tubing (if any) shall include rates for valves, fittings, all in line instruments and testing etc. Carbon steel piping includes LTCS piping also. Welding shall include all the examination and testing required such as but not limited to radiography, ultrasonic, magnaflux /dye check etc and pre and post heat treatment wherever required. Unit rates shall include the cost of supervision, labour, overheads/profits, consumables, and other associated arrangements required to execute all the related activities. The quoted rates shall include seal welding of thermocouples, Onifice flange plug, nipple, and hydro testing drain and vents caps. The cost towards radiography only shall be paid separately as per SOR item "RADIOGRAPHY"</p>				
22.20	PIPE: CARBON STEEL PIPING (NON IBR); THK. <= 10MM				
23.00	FABRICATION (BUTT WELDTHD)				
23.10	UTPO 1.5 INCH	2210.00	ID	236.89	523529.05
23.20	NB 2 INCH - 6 INCH	16520.00	ID	236.89	3913438.86
23.30	NB 8 INCH - 14 INCH	21500.00	ID	236.89	5093155.91
23.40	NB 16 INCH - 24 INCH	15200.00	ID	283.95	4316041.85
23.50	NB 28 INCH - 36 INCH	2200.00	ID	283.95	624690.27
23.60	PIPE: CARBON STEEL PIPING (NON IBR); THK. > 10MM				



## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
24.00	FABRICATION (BUTT WELD)				
24.10	NB 16 INCH - 24 INCH	1510.00	ID	331.81	501028.39
24.20	NB 42 INCH - 48INCH	13432.00	ID	378.87	5088928.56
24.30	PIPE: CARBON STEEL PIPING (IBR); THK. <= 10MM				
25.00	FABRICATION (BUTT WELD/THD)				
25.10	UTPO 1.5 INCH	1020.00	ID	473.78	483257.58
25.20	NB 2 INCH - 6 INCH	1295.00	ID	473.78	613547.62
25.30	NB 8 INCH - 14 INCH	6550.00	ID	568.70	3724970.96
25.40	PIPE: CARBON STEEL PIPING ( IBR); THK. > 10MM				
26.00	FABRICATION (BUTT WELD)				
26.10	NB 8 INCH - 14 INCH	3300.00	ID	568.70	1876702.93
26.20	PIPE: LT STEEL PIPING ( IBR/NON IBR); THK. > 10MM				
27.00	FABRICATION (BUTT WELD/THD)				
27.10	UTPO 1.5 INCH	44.00	ID	473.78	20846.41
27.20	NB 28 INCH - 36 INCH	328.00	ID	473.78	155400.48
27.30	NB 42 INCH - 48 INCH	8963.00	ID	473.78	4246507.57
27.40	PIPE: ALLOY STEEL PIPING (IBR); THK.<= 10MM				
28.00	FABRICATION (BUTT WELD)				
28.10	NB UTPO 1.5 INCH	490.00	ID	473.78	232153.15
28.20	PIPE: ALLOY STEEL PIPING (IBR); THK. > 10MM				



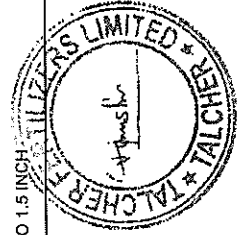
## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
29.00	FABRICATION (BUTT WELD)				
29.10	NB UTPO 1.5 INCH	150.00	ID	1420.55	213082.23
29.20	NB 8 INCH - 14 INCH	273.00	ID	4736.22	1292989.21
29.30	NB 16 INCH - 24 INCH	8500.00	ID	7578.12	64414005.36
29.40	PIPE; STAINLESS STEEL PIPING ; THK. <= 10MM				
30.00	FABRICATION (BUTT WELD)				
30.10	NB UTPO 1.5 INCH	220.00	ID	331.81	72997.51
30.20	NB 2 INCH - 6 INCH	2070.00	ID	331.81	686840.25
30.30	NB 8 INCH - 14 INCH	6475.00	ID	378.87	2453157.57
30.40	NB 16 INCH - 24 INCH	3925.00	ID	425.93	1671756.34
30.50	NB 28 INCH - 36 INCH	2550.00	ID	662.82	1690181.20
31.00	FABRICATION (FILLET WELD)				
31.10	NB UPTO 1.5 INCH	10.00	ID	473.78	4737.82
32.00	ERECTION OF PIPING:				
33.00	CARBON STEEL PIPING (NON IFR); THK. <= 10MM				
33.10	UTPO 1.5 INCH	2750.00	IM	141.98	390431.42
33.20	NB 2 INCH - 6 INCH	67000.00	IM	141.98	9512329.08
33.30	NB 8 INCH - 14 INCH	98716.00	IM	141.98	14015210.11
33.40	NB 16 INCH - 24 INCH	70000.00	IM	141.98	9938254.26
33.50	NB 28 INCH - 36 INCH	22000.00	IM	141.98	3123451.34



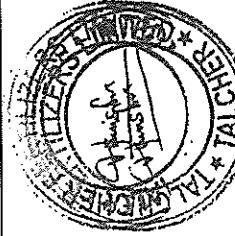
## SCHEDULE OF RATES (SOR)

SL. NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
34.00	CARBON STEEL PIPING (NON IBR); THK. > 10MM				
34.10	NB 16 INCH - 24 INCH	7000.00	IM	170.69	1194823.83
34.20	NB 42 INCH - 48INCH	52200.00	IM	170.69	8909971.97
35.00	CARBON STEEL PIPING ( IBR); THK.<=10MM				
35.10	UTPO 1.5 INCH	370.00	IM	236.89	87649.66
35.20	NB 2 INCH - 6 INCH	4100.00	IM	236.89	971252.99
35.30	NB 8 INCH - 14 INCH	13600.00	IM	236.89	3221717.22
36.00	CARBON STEEL PIPING (IBR); THK. > 10MM				
36.10	NB 8 INCH - 14 INCH	6100.00	IM	236.89	1445034.93
37.00	PIPE: LT STEEL PIPING ( IBR/NON IBR); THK. > 10MM				
37.10	UTPO 1.5 INCH	20.00	IM	236.89	4737.82
37.20	NB 28 INCH - 36 INCH	500.00	IM	236.89	118445.49
37.30	NB 42 INCH - 48 INCH	36500.00	IM	236.89	8646520.49
38.00	PIPE: ALLOY STEEL PIPING (IBR); THK.<= 10MM				
38.10	NB UTPO 1.5 INCH	220.00	IM	189.83	41763.00
39.00	PIPE: ALLOY STEEL PIPING (IBR); THK. > 10MM				
39.10	NB 8 INCH - 14 INCH	130.00	IM	331.81	43134.89
39.20	NB 16 INCH - 24 INCH	15500.00	IM	331.81	5143006.70
40.00	PIPE: STAINLESS STEEL PIPING ; THK. <= 10MM				
40.10	NB UTPO 1.5 INCH	10.00	IM	141.98	1419.75



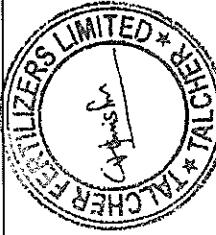
## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
40.20	NB 2 INCH - 6 INCH	7700.00	IM	141.98	1083207.97
40.30	NB 8 INCH - 14 INCH	26290.00	IM	141.98	3732524.35
40.40	NB 16 INCH - 24 INCH	17500.00	IM	141.98	2484563.57
40.50	NB 28 INCH - 36 INCH	9410.00	IM	141.98	1335985.32
41.00	UNDER GROUND (U-G) PIPING WORKS:				
41.10	EARTHWORK				
41.11	Excavation of trenches for pipelines in all kinds of soil including soft and hard rock mixed in nature both dry and wet conditions including dressing of sides and bottom getting out excavated material in the approved dump yard in all leads of 100 meter including spreading and leveling as per instruction of owner/Consultant.	1500.00	M3	216.15	324229.56
41.12	Same as above but lift from 1.5 Mtr. to 3.0 Mtr.	1200.00	M3	236.89	284269.17
41.13	Providing and filling with fine river sand in trenches a layer of 150 mm from BOP (Bottom of pipe) and 200 mm top of pipes (in case of pipe size > 24" NB) and for pipes < 24" filling of sand in trenches shall be 150mm from BOP and 100 mm from top of pipe including watering, ramming, consolidating and complete dressing.	700.00	M3	1132.61	792827.03
41.14	Filling with available earth excavated without stones & unwanted materials in the trenches in layer other than Sr. No. III. In depth consolidation each deposited layer by ramming and watering all complete.	900.00	M3	92.52	83270.77
41.15	Removal or excess excavated materials after back filling of trenches from site of work to other area in factory premises, as directed by owner and spreading and leveling the same.	800.00	M3	165.11	132084.66
41.16	Cutting and disposal of paved surface at all level other than 41.11 & 41.12	200.00	M3	463.41	92682.60
41.17	Cutting and disposal of PCC at all level other than 41.11 & 41.12	200.00	M3	823.93	164786.78
41.18	Cutting and disposal of RCC at all level other than 41.11 & 41.12	100.00	M3	823.93	82393.39
41.19	PLAIN CEMENT CONCRETE :				
41.20	Providing and laying plain cement concrete, machine mixed and mechanically vibrated in foundations, plinth, under floors, etc., excluding all necessary cost of centring and shuttering :				
41.21	1:4:8 (1 cement: 4 coarse sand: 8 graded stone aggregate 40 mm nominal size).	25.00	M3	7722.49	193062.15



## SCHEDULE OF RATES (SOR)

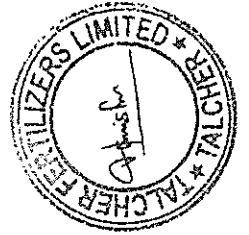
SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
41.22	1:3:6 (1 cement: 3 coarse sand: 6 graded stone aggregate 20 mm and below).	1.00	M3	7722.49	7722.49
41.23	1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20 mm and below).	1.00	M3	7722.49	7722.49
41.24	1:1.5:3 (1 cement: 1.5 coarse sand: 3 graded stone aggregate 20 mm and below).	1.00	M3	7722.49	7722.49
41.25	<b>REINFORCED CEMENT CONCRETE :</b>				
41.26	Providing and laying reinforced cement concrete of grade M-30 (using 20 mm. nominal gauge graded stone aggregate) machine mixed and mechanically vibrated and finished to a fair face but excluding the cost of centring, shuttering and reinforcement in foundation and plinth, for rafts, footings, bases of columns, pedestals, beams, walls, columns, slabs, machine and equipment foundations, pile caps, box sections, pipe supports, etc., complete in all respects as per direction of Engineer-in-Charge.	100.00	M3	9781.92	978192.22
41.27	Same as Item No. 41.26, but with concrete of grade M-25.	10.00	M3	9781.92	97819.22
41.28	<b>REINFORCEMENT :</b>				
41.29	Supplying, cutting, cleaning, straightening, bending, hoisting and placing in position and binding with 18 SWG annealed wire, reinforcement bar of high yield strength Corrosion Resistance Steel with Fe500D properties conforming to IS:1786 with minimum yield strength of 500 N/sq.mm for all R.C.C. works including all necessary handling at all heights and depths complete in all respects and as per direction of Engineer-in-Charge.	1.00	MT	122270.04	122270.04
42.00	<b>FABRICATION &amp; ERECTION OF UNDER GROUND (U-G) PIPING</b>				
43.00	<b>PIPE: CARBON STEEL PIPING (IBR/NON IBR); THK. &lt;= 10MM</b>				
44.00	<b>FABRICATION (BUTT WELD)</b>				
44.10	NB UTPO 1.5 INCH	10.00	ID	283.95	2839.50
44.20	NB 2 INCH - 6 INCH	12.00	ID	283.95	3407.40
44.30	NB 8 INCH - 14 INCH	336.00	ID	283.95	95407.24
44.40	NB 16 INCH - 24 INCH	5500.00	ID	331.81	1824937.86
44.50	NB 28 INCH - 36INCH	4800.00	ID	331.81	1592673.04
45.00	<b>FABRICATION (FILLET WELD)</b>				





## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
45.10	NB UPTO 1.5 INCH	10.00	ID	757.73	7577.32
46.00	LAYING/ERECTION				
46.10	NB UTPO 1.5 INCH	10.00	IM	141.98	1419.75
46.20	NB 2 INCH - 6 INCH	40.00	IM	141.98	5679.00
46.30	NB 8 INCH - 14 INCH	1270.00	IM	141.98	180308.33
46.40	NB 16 INCH - 24 INCH	2400.00	IM	141.98	340740.15
46.50	NB 28 INCH - 36INCH	2350.00	IM	141.98	333641.39
47.00	COATING AND WRAPPING OF UNDERGROUND PIPING:				
47.10	Supply & Application of all Cold Tape type coating and wrapping materials, manpower, equipments, consumables and necessary arrangements for surface preparation and application shall be in the scope of Contractor. Surface cleaning and preparation shall consist of cleaning and degreasing by Grit / Shot blasting and or power scraping, using most suitable method or a combination therefore, both followed by carefully removal of the dust according to the specification ISO 8501-1: 1988 SA 2.5. The coating continuity shall be visually 100% checked by electric Holiday detector to detect and search of particles and other inclusion, pinholes, cavities, cracks and other ruptures. All defects visually detected or by Holiday detector shall be clearly marked and all defects in the coating shall be made good immediately after their inspection.				
48.00	COATING AND WRAPPING OF UNDERGROUND PIPING: As per C&W-TS (Attached with NIT DOCS)				
48.10	Cold Tape Type (Two layer = Inner wrap and Outer wrap.)	3400.00	Sq. M.	1941.39	6600723.67
49.00	ERECTION OF VALVES				



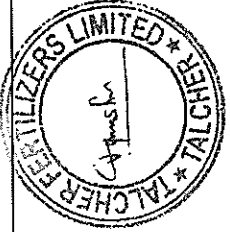
## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
49.10	Transportation loading/unloading from storage points to shop/sites, (including testing of all kind of valves/ PSV/TSV and setting of safety valves but excluding testing of control valves which shall be issued from Owner/ Consultant's stores or instrument contractor's shop/stores), making necessary scaffoldings at all elevations, installation in position by threading, bolting or welding as per drawings, specifications, standards / codes, instructions of Owner/Consultant and scope of work defined in NIT. Welding shall include all the examination and inspection required such as but not limited to radiography, ultrasonic, magnaflux, dye check etc, pre and post heat-treatment wherever required. The cost towards consumables, statutory approval and conditions listed in preamble to Schedule of Rates and other associated arrangements rates quoted as per Schedule of Rates. Rates shall also include the cost of supervision, labour, Overhead / profits, radiography shall be paid separately as per SOR Item "RADIOGRAPHY", whereas the cost of all other tests is included in the consumables, statutory approval and conditions listed in preamble to Schedule of Rates and other associated arrangements required to execute all the related activities. The quoted rates shall also include tightening of gland packing, lapping and bonnet flange of valves if required during hydro-testing of piping. If any leakage or pressure drop found during testing in Valves/PSV's then contractor will replace the Valves/ PSV's with repair, retest & install without any extra cost to owner.				
50.00	FLANGED/SCREWED VALVES				
50.10	Upto ¾"	5.00	NOS	308.68	1543.38
50.20	1" to 1½"	5.00	NOS	308.68	1543.38
50.30	2" to 4"	43.00	NOS	740.98	31862.23
50.40	6" to 8"	1.00	NOS	1482.76	1482.76
50.50	10" to 12"	1.00	NOS	2223.74	2223.74
51.00	SW/BW VALVES				
51.10	Up to ¾"	548.00	NOS	308.68	169154.51
51.20	1" TO 1 1/2"	108.00	NOS	308.68	33337.02
52.00	STEAM/ CONDENSATE MANIFOLD (AS PER ATTACHED ANNEXTURE)	24.00	NOS	1595.23	38285.41
53.00	NOTES: 1. WAFER TYPE VALVES shall be treated as flanged valves 2. Above includes valves of all materials, rating, IBR/Non IBR. 3. Above includes all types of valves/ steam traps. 4. Rates are inclusive of installation/Removal of Control valves or any other type of valve during Pressure Testing/Testing. No extra payment will be made for the same.				



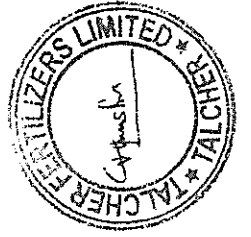
## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
54.00	RADIOGRAPHY :-The unit rate shall include cost of radiograph viewer and films, consumables, scaffolding, manpower, overheads/profits etc. Payment shall be made only for those films after examination for joints found acceptable as per codes, standards & NIT. Films for defective joints shall not be paid. Overlapping Length of radiography film is not payable.				
54.10	At outside, the place of erection using film size				
54.20	3" wide film	7200.00	Inches	31.90	229712.46
54.30	4" wide film	58000.00	Inches	35.09	2035507.61
55.00	In-situ (Erected position) using				
55.10	3" wide film	4200.00	Inches	31.90	133998.93
55.20	4" wide film	39800.00	Inches	35.09	1396779.36
56.00	NOTES: 1. Length and width of film to be used which shall be decided by Owner before execution of radiography. 2. As a guide line the radiography film shall be used as below: - i) 3" wide film shall be used up to 4" dia pipes ii) 4" wide film shall be used above 4" dia pipes 3. Payment shall be made on the basis of weld length radiographed & for those joints which are found acceptable. 4. Length of radiographed film shall be calculated (O.D. x 3.14) in inch.				
57.00	STRESS RELIEVING :The unit rate shall include cost of SR, consumables, scaffolding, manpower, overheads/profits etc. Payment shall be made only for those successful for examination & found acceptable as per codes, standards & NIT.				
57.10	At outside, the place of erection using film size	11200.00	ID	151.55	1697319.83
57.20	In-situ (Erected position) using	7014.00	ID	151.55	1062946.54
58.00	PIPE SUPPORTS				
59.00	SUPPLY & FABRICATION OF PIPE SUPPORTS				
59.10	Supply & Fabrication of pipe supports as per drawings, standards, Specifications, NIT conditions & instructions of Owner/Consultant. The rate shall include the cost of materials, consumables, surface preparation & application of primer and painting, labour & overheads/profits etc. Supply & fabrication of all types of supports is in contractor scope.				



## SCHEDULE OF RATES (SOR)

SL.NO	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
60.00	DETAILS OF PIPE SUPPORTS				
60.10	CATEGORY, MATERIAL OF CONSTRUCTION				
60.20	PS 1, Means carbon steel supports.	10.00	MT	145095.32	1450953.22
60.30	PS 2, Means alloy steel supports	2.00	MT	259469.79	518939.59
60.40	PS 3, Means stainless steel supports	4.00	MT	378393.05	1513572.20
60.50	PS 4, PUF supports for cold lines	1.00	MT	317850.26	317850.26
60.60	PS 5, Means Turn buckles (Forged)	1.00	MT	369744.53	369744.53
60.70	PS 6, Means Spring support	1.00	MT	454072.14	454072.14
61.00	ERECTION OF PIPE SUPPORTS				
61.10	Erection of supports fabricated by Contractor including primer/painting and/or supplied by vendors. The rate shall include cost of erection as part of piping, making necessary scaffoldings at all elevations, welding, labour, consumables, application of primer and finish paint, casting of civil padstel for trunion supports, casting of civil sleeper supports for piping, overheads/profits etc to complete all related activities as per NIT and instruction of Owner/ Consultant.				
61.20	PS 1, Means carbon steel supports.	10.00	MT	45561.23	455612.33
61.30	PS 2, Means alloy steel supports	2.00	MT	61006.21	122012.41
61.40	PS 3, Means stainless steel supports	4.00	MT	66926.88	267707.54
61.50	PS 4, PUF supports for cold lines	1.00	MT	46334.12	46334.12
61.60	PS 5, Means Turn buckles (Forged)	1.00	MT	41185.53	41185.53
61.70	PS 6, Means Spring support	1.00	MT	36037.74	36037.74



## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
62.00	<p>Notes</p> <ol style="list-style-type: none"> <li>Irrespective of whether pipe supports and/or pipe support materials are supplied by Contractor or Owner or Vendor, all fasteners such as bolts, studs, nuts, washers etc., are to be supplied by Contractor at his cost.</li> <li>Preference shall be given to PUJ support to be used if required for cold insulation line.</li> <li>Welding for supports shall include preheating and all tests (excluding radiography &amp; stress relieving, which shall be paid separately as per SOR) such as dye-penetration test, hardness test etc. as required by standards, codes, specifications and instructions of Owner/Consultant.</li> <li>Turn buckles &amp; Spring Supports shall be procured by contractor as per PDIL Engineering Standard.</li> <li>For PUJ Supports, density shall be 250 Kg/M3 and dimensions shall be same as for wooden supports. Both the inner and outer diameter surfaces shall have Aluminum facing.</li> </ol>				
63.00	REINFORCING PADS FOR PIPES :- Supply of materials, consumables & Fabrication/erection of reinforcing pads for pipe connection wherever required and erection, fitup, welding & testing (including DP/IMP), if required of the same and performing Positive Material Identification(PMI) using alloy analysers as per the specifications, drawings and instructions of the Engineer-in-Charge.				
63.11	BRANCH WELD WITH RP.24X16,CARBON STEEL,ASME B31.3	2.00	NOS	7413.81	14827.62
63.12	BRANCH WELD WITH RP.30X20,CARBON STEEL,ASME B31.3	3.00	NOS	8752.20	26256.61
63.13	BRANCH WELD WITH RP.30X14,CARBON STEEL,ASME B31.3	3.00	NOS	8442.73	25328.19
63.14	BRANCH WELD WITH RP.30X10,CARBON STEEL,ASME B31.3	3.00	NOS	7722.49	23167.46
63.15	BRANCH WELD WITH RP.30X8,CARBON STEEL,ASME B31.3	3.00	NOS	7207.23	21621.69
63.16	BRANCH WELD WITH RP.30X2,CARBON STEEL,ASME B31.3	3.00	NOS	6692.77	20078.30
63.17	BRANCH WELD WITH RP.48X20,CARBON STEEL,ASME B31.3	2.00	NOS	6177.51	12355.02
63.18	BRANCH WELD WITH RP.8X3,STAINLESS STEEL,ASME B31.3	2.00	NOS	19048.59	38097.17
63.19	BRANCH WELD WITH RP.8X2,STAINLESS STEEL,ASME B31.3	9.00	NOS	18533.33	166799.96
63.20	BRANCH WELD WITH RP.18X8,STAINLESS STEEL,ASME B31.3	2.00	NOS	22652.20	45304.40
63.21	BRANCH WELD WITH RP.18X3,STAINLESS STEEL,ASME B31.3	2.00	NOS	21622.48	43244.97
64.00	PAINTING				
64.10	PIPING				



## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
64.20	Supply & Application of paints and primers as per PDIL TS-2007/Drawings/docs, preparation of surfaces and application of primer and finish paints, identification (Line numbering), lettering, colour bands, colour coding etc. as specified including rubdown and touch up of shop primer wherever required, providing scaffolding for all heights, labour, material, tools and tackles, consumables supervision etc. to complete the work in all respects, drawings and direction of Engineer-in-Charge for all types of uninsulated piping and insulated piping as specified including all pipes, fittings, flanges, supports, valves etc. Surface preparation by blast cleaning and application of first coat of primer (inorganic zinc silicate) shall be done in fabrication yard prior to erection. For insulated piping wherever blast cleaning with no primer application is specified, in such cases finish paints shall also be applied in the fabrication yard. The identification marks of the piping and joints shall be noted before blasting and the same shall be transferred on primed surface with Polyurethane paint or as per the instructions of Engineer-in-Charge. Notes: 1. All joints (fabrication as well as erection joints) shall be left unpainted till hydrotesting. 2. No extra payment shall be made for identification (line numbering etc.) of insulated and uninsulated lines.				
65.00	UNINSULATED (CS+AS) UP TO 90°C				
65.11	3/4"	2.00	SQ-Mtr.	735.40	1470.80
65.12	1"	2.00	SQ-Mtr.	735.40	1470.80
65.13	1 1/2"	2.00	SQ-Mtr.	735.40	1470.80
65.14	2"	480.00	SQ-Mtr.	735.40	338283.50
65.15	3"	930.00	SQ-Mtr.	735.40	683920.99
65.16	4"	705.00	SQ-Mtr.	735.40	518456.23
65.17	6"	1375.00	SQ-Mtr.	735.40	1011173.50
65.18	8"	1475.00	SQ-Mtr.	735.40	1084713.39
65.19	10"	3475.00	SQ-Mtr.	735.40	2555511.22
65.20	12"	750.00	SQ-Mtr.	735.40	551549.18
65.21	14"	1280.00	SQ-Mtr.	735.40	941310.61
65.22	16"	1600.00	SQ-Mtr.	735.40	1176638.26
65.23	18"	290.00	SQ-Mtr.	735.40	213265.68



## SCHEDULE OF RATES (SOR)

SL.NO	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
65.24	20"	635.00	SQ-Mtr.	735.40	466978.31
65.25	24"	1500.00	SQ-Mtr.	735.40	1103098.37
65.26	28"	55.00	SQ-Mtr.	735.40	40446.94
65.27	30"	1805.00	SQ-Mtr.	735.40	1327395.03
65.28	42"	3100.00	SQ-Mtr.	735.40	2279736.62
65.29	44"	180.00	SQ-Mtr.	735.40	132371.80
65.30	48"	4400.00	SQ-Mtr.	735.40	3235755.21
66.00	UNINSULATED (CS+AS) ABOVE 90°C TO 200°C				
66.11	3/4"	2.00	SQ-Mtr.	656.44	1312.87
66.12	1"	2.00	SQ-Mtr.	656.44	1312.87
66.13	1 1/2"	30.00	SQ-Mtr.	656.44	19693.06
66.14	6"	310.00	SQ-Mtr.	656.44	203494.93
66.15	12"	304.00	SQ-Mtr.	656.44	199555.32
66.16	MODIFICATION/EXTRA WORKS (IF ANY): -				
66.17	MODIFICATION/EXTRA WORKS (IF ANY) :- Cutting, bevelling, fitup, welding of different sizes of Carbon Steel/Alloy Steel/Stainless Steel piping of all types and thicknesses in shop, in position, on ground/overhead on rack and at all elevations; transportation of pipes, fittings, flanges etc from owner's storage point to work site/ work shop, making necessary scaffoldings, consumables, machinery, tools, tackles, labour, primer, painting and supervision including attending repairs for completing the work as per the instruction of Engineer-in-charge.				
66.18	FLAME CUTTING C.S PIPING	150.00	Inch dia	411.57	61735.22
66.19	FLAME CUTTING A.S PIPING	150.00	Inch dia	411.57	61735.22
66.20	HACKSAW CUTTING C.S PIPING	150.00	Inch dia	669.20	100379.56



## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
66.21	HACKSAW/ PLASMA CUTTING S.S PIPING	150.00	Inch dia	1596.02	239403.45
66.22	BEVELLING C.S PIPING	150.00	Inch dia	432.31	64845.91
66.23	BEVELLING S.S PIPING	150.00	Inch dia	1338.39	200759.12
66.24	BEVELLING A.S PIPING	150.00	Inch dia	463.41	69511.95
66.25	Fit up & Welding C.S PIPING	150.00	Inch dia	463.41	69511.95
66.26	Fit up & Welding OF S.S. PIPING	150.00	Inch dia	1080.77	162114.78
66.27	Fit up & Welding OF A.S. PIPING	150.00	Inch dia	463.41	69511.95
66.28	NOTE: 1. Rates shall include for IBR and Non IBR 2. CS shall include GI also 3. For other thickness, the rates shall be increased by direct proportion. 4. Rates for cutting shall include the cost of consumables, labour and other necessary arrangement related with & for this activity.				
67.00	LETTER STENCILLING				
67.10	Surfaces preparation, supply and application of primer and paint on uninsulated equipment, for lettering, stenciling on Pumps, Piping for the purposes of identification (Equipment Name, Equipment Number & Service Description) as per applicable painting specification enclosed elsewhere in the tender document, providing scaffolding for all heights, labour, materials, tools, tackles, supervision etc. to complete the work as per specifications and instructions of Engineer-in-Charge.	1500.00	Per Letter	44.67	66999.47
68.00	Assistance during PRE COMMISSIONING/COMMISSIONING				
68.10	Skilled (with hand tools, equipment/machinery, consumables): Welder, Millwright Filter	50.00	EA	1266.61	63330.45
68.20	Semi Skilled (with hand tools): Pipe Fitter, Gas Cutter, Rigger, Electrician (for welding m/c).	50.00	EA	864.61	43230.61
68.30	Unskilled: Helper, Khalasi.	50.00	EA	782.46	39122.90
68.40	Note- EA: ONE MAN 8-HRS PER DAY				
69.00	PART-B (INSULATION)				





## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
70.00	SUPPLY & APPLICATION OF INSULATION:				
71.00	HOT INSULATION				
72.00	PIPING:				
72.10	PIPING WITH OPERATING TEMPERATURE UP TO 400 DEG C & NOMINAL PIPE SIZE UP TO 14" NB - Supply and application of insulation as per PDIL TS/ES/docs (Mentioned in NIT) including cleaning , all complete with tools, tackles, scaffolding at all elevation, manpower, materials such as aluminium bands, lacing, binding, stitching wire, labours, cleaning , all complete with tools, tackles, materials such as aluminium bands, lacing, binding, stitching wire, labours, cladding, inspection, testing and guarantee are using Rock Wool Mattress / Slabs (in 2 halves) as per drawings, documents, codes, standards and technical specification and as per instructions of Owner / Consultant.				
72.11	Insulation Thick. 25 MM For Pipe Size 1/2"	3.00	SQ-Mtr	1669.40	5008.21
72.12	Insulation Thick. 25 MM For Pipe Size 3/4"	5.00	SQ-Mtr	1680.57	8402.85
72.13	Insulation Thick. 60 MM For Pipe Size 3/4"	20.00	SQ-Mtr	1899.12	37982.32
72.14	Insulation Thick. 30 MM For Pipe Size 1"	4.00	SQ-Mtr	1723.64	6894.56
72.15	Insulation Thick. 60 MM For Pipe Size 1"	5.00	SQ-Mtr	1915.07	9575.34
72.16	Insulation Thick. 30 MM For Pipe Size 1 1/2"	2.00	SQ-Mtr	1745.97	3491.95
72.17	Insulation Thick. 30 MM For Pipe Size 2"	47.00	SQ-Mtr	1760.33	82735.57
72.18	Insulation Thick. 30MM For Pipe Size 3"	2.00	SQ-Mtr	1783.46	3566.92
72.19	Insulation Thick. 30 MM For Pipe Size 4"	10.00	SQ-Mtr	1797.82	17978.19
72.20	Insulation Thick. 30 MM For Pipe Size 6"	14.00	SQ-Mtr	1816.16	25426.30
72.21	Insulation Thick. 30 MM For Pipe Size 8"	18.00	SQ-Mtr	1828.13	32906.31
72.22	Insulation Thick. 80 MM For Pipe Size 8"	10.00	SQ-Mtr	2261.23	22612.32
72.23	Insulation Thick. 35 MM For Pipe Size 8"	235.00	SQ-Mtr	1876.78	441043.93



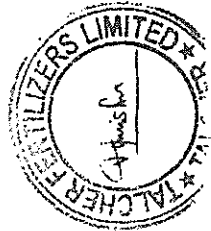
## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
72.24	Insulation Thick. 35 MM For Pipe Size 10"	975.00	SQ-Mtr	1887.15	1839972.86
72.25	Insulation Thick. 80 MM For Pipe Size 10"	680.00	SQ-Mtr	2291.54	1558248.08
72.26	Insulation Thick. 25 MM For Pipe Size 12"	6.00	SQ-Mtr	1791.44	10748.63
72.27	Insulation Thick. 30 MM For Pipe Size 12"	30.00	SQ-Mtr	1844.08	55322.42
72.28	Insulation Thick. 25 MM For Pipe Size 14"(Mattress)	1410.00	SQ-Mtr	1794.63	2530426.30
73.00	PIPING WITH OPERATING TEMPERATURE UP TO 400 DEG C & NOMINAL PIPE SIZE ABOVE TO 14" NB - Supply and application of insulation as per PDIL TSI/Docs including cleaning , all complete with tools, tackles, scaffolding at all elevation, manpower, materials such as aluminium bands, lacing, binding, stitching wire, labours,cladding, inspection, testing and guarantee are using Rock Wool Mattress / Slabs (in 2 halves) as per drawings, documents, codes, standards and technical specification and as per instructions of Owner / Consultant.				
73.10	Insulation Thick. 40 MM For Pipe Size 20"	45.00	SQ-Mtr	2008.39	90377.50
73.20	Insulation Thick. 40 MM For Pipe Size 24"	2450.00	SQ-Mtr	2597.82	6354670.19
73.30	Insulation Thick. 40 MM For Pipe Size 44"	94.00	SQ-Mtr	2612.98	245620.05
73.40	Insulation Thick. 40 MM For Pipe Size 48"	110.00	SQ-Mtr	2615.37	287690.93
74.10	PIPING WITH OPERATING TEMPERATURE from 401 DEG C to 450 DEG C & NOMINAL PIPE SIZE UP TO 14" NB - Supply and application of insulation as per PDIL TSI/Docs including cleaning , all complete with tools, tackles, scaffolding at all elevation, manpower, materials such as aluminium bands, lacing, binding, stitching wire, labours,cladding, inspection, testing and guarantee are using Mattress / Slabs (in 2 halves) as per drawings, documents, codes, standards and technical specification and as per instructions of Owner / Consultant.				
74.11	Insulation Thick. 100 MM For Pipe Size 3/4"	6.00	SQ-Mtr	2411.18	14467.10
74.12	Insulation Thick. 100 MM For Pipe Size 1"	6.00	SQ-Mtr	2438.30	14629.81
74.13	Insulation Thick. 100 MM For Pipe Size 1 1/2"	6.00	SQ-Mtr	2494.93	14969.60
74.14	Insulation Thick. 160 MM For Pipe Size 12"	6.00	SQ-Mtr	2966.32	17797.93



## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
74.20	PIPING WITH OPERATING TEMPERATURE from 451 DEG C to 500 DEG C & NOMINAL PIPE SIZE UP TO 14" NB - Supply and application of insulation as per PDIL TS/ES/docs including cleaning , all complete with tools, tackles, scaffolding at all elevation, manpower, materials such as aluminium bands, lacing, binding, stitching wire, labours, cleaning , all complete with tools, tackles, materials such as aluminium bands, lacing, binding, stitching wire, labours, cladding, inspection, testing and guarantee are using Mattress / Slabs (in 2 halves) as per drawings, documents, codes, standards and technical specification and as per instructions of Owner / Consultant.				
74.21	Insulation Thick. 100 MM For Pipe Size 3/4"	6.00	SQ-Mtr	3924.25	23545.53
74.22	Insulation Thick. 100 MM For Pipe Size 1"	30.00	SQ-Mtr	2438.30	73149.06
74.23	Insulation Thick. 100 MM For Pipe Size 1 1/2"	6.00	SQ-Mtr	2494.93	14968.60
74.24	Insulation Thick. 160 MM For Pipe Size 12"	6.00	SQ-Mtr	2966.32	17797.93
75.10	PIPING WITH OPERATING TEMPERATURE from 401 DEG C to 450 DEG C & NOMINAL PIPE SIZE ABOVE 14" NB- Supply and application of insulation as per PDIL TS/ES/docs including cleaning , all complete with tools, tackles, scaffolding at all elevation, manpower, materials such as aluminium bands, lacing, binding, stitching wire, labours, cleaning , all complete with tools, tackles, materials such as aluminium bands, lacing, binding, stitching wire, labours, cladding, inspection, testing and guarantee are using Mattress / Slabs (in 2 halves) as per drawings, documents, codes, standards and technical specification and as per instructions of Owner / Consultant.				
75.11	Insulation Thick. 175 MM For Pipe Size 20"	100.00	SQ-Mtr	3924.25	392425.45
75.12	Insulation Thick. 180 MM For Pipe Size 24"	100.00	SQ-Mtr	4672.42	467241.52
75.20	PIPING WITH OPERATING TEMPERATURE from 451 DEG C to 500 DEG C & NOMINAL PIPE SIZE ABOVE 14" NB- Supply and application of insulation as per PDIL TS/ES/docs including cleaning , all complete with tools, tackles, scaffolding at all elevation, manpower, materials such as aluminium bands, lacing, binding, stitching wire, labours, cleaning , all complete with tools, tackles, materials such as aluminium bands, lacing, binding, stitching wire, labours, cladding, inspection, testing and guarantee are using Mattress / Slabs (in 2 halves) as per drawings, documents, codes, standards and technical specification and as per instructions of Owner / Consultant.				
75.21	Insulation Thick. 175 MM For Pipe Size 20"	850.00	SQ-Mtr	3924.25	3335616.32
75.22	Insulation Thick. 180 MM For Pipe Size 24"	700.00	SQ-Mtr	4672.42	3270690.64
76.00	ALUMINIUM FOIL WRAPPING ON S.S. SURFACE BEFORE INSULATION OF EQUIPMENT & PIPING:				



## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
76.10	ALUMINIUM FOIL WRAPPING ON S.S. SURFACE BEFORE INSULATION OF EQUIPMENT & PIPING; - Supply and application as per enclosed spec, inspection and certification by Owner / Consultant's incharge.	70.00	SQ-Mtr	190.63	13344.06
77.00	INSPECTION POCKETS				
77.10	Inspection pockets of sizes 4" X 4" to be made as instructions of Owner / Consultant at site.	4.00	NOS.	1449.26	5797.05
78.00	PART-C(CATHODIC PROTECTION)				
78.10	Design, detailed engineering, site survey	1.00	Lumpsum	667593.86	667593.86
79.00	Transformer Rectifier Unit				
79.10	Supply of Transformer Rectifier Unit (s), Dry type, naturally air cooled, suitable for outdoor installation in non-Hazardous area, AC operated rectifier unit shall have one input - 415V AC +/-10%, 3 Ph, 50Hz +/-5%, AC and output shall be 75V / 50 A or per design of the Bidder with GPS based current interrupter, in built RMJRTU and central Control and monitoring system with fibre optic communication system, as per Technical Specification - Cathodic Protection Transformer Rectifier Unit (PC183-TS-0824). TRU/RTU shall have provision for connecting RS 485 communication cable also, in addition to the fibre optic connection	7.00	Nos.	641917.11	4493419.75
79.20	Supply of Transformer Rectifier Unit (s) oil cooled, suitable for outdoor installation in Hazardous area, AC operated rectifier unit shall have one input - 415V AC +/-10%, 3 Ph, 50Hz +/-5%, AC and output shall be 75V / 50 A or per design of the Bidder with GPS based current interrupter, as per Technical Specification - Cathodic Protection Transformer Rectifier Unit (PC183-TS-0824)	1.00	Nos.	693270.60	693270.60
79.30	Installation, testing & commissioning of above Transformer Rectifier Unit (s)	7.00	Nos.	32866.43	230065.00
80.00	MMO wire anode				
80.10	Supply of Factory prepackaged Longline MMO wire anode- 1.5 mm diameter with piggy back cable -1c x 10 sq mm KYNAR/HMWPE and calcined petroleum coke breeze in an acid resistance fabric with splice kit	2250.00	Mtrs	3132.23	7047506.43
80.20	Installation of MMO wire anode	2250.00	Mtrs	400.40	900903.55
81.00	Canistered MMO Tubular anodes				



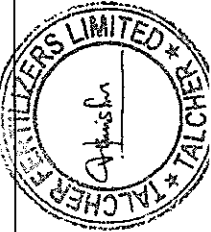
## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
81.10	Supply of Canistered MMO Tubular anodes- 4 Amp Vertical anode ground bed using MMO tubular anode (25 mm dia. x 500mm long) of each 4A rating, with cable of 1c x 10 sq mm KYNAR/HDWPE, unarmoured of minimum length to reach the anode junction box without any splicing/joining, supplied with a canister of size 0.2 mtr X 2 mtr filled with calcined petroleum coke breeze of bulk density 800-1000 kg/ m <sup>3</sup> .	105.00	Nos.	63878.21	6686211.80
81.20	Installation of above Canistered MMO Tubular anodes	105.00	Nos.	12324.71	1294094.70
82.00	In line splices Kit for jointing of MMO wire anode to anode tail cable				
82.10	Supply of in line splices Kit	25.00	Nos.	2259.64	56490.92
82.20	Installation of above in line splices Kit	25.00	Nos.	205.78	5144.60
83.00	<b>Junction Boxes:</b> Supply, Installation & Testing of Junction Boxes of approved make, complete in all respects as given in the specification and SOW and directions of Site Engineer/ Engineer-in-Charge with all its accessories to ensure trouble free operation. **Junction Boxes installed in Zone- 1/Zone-2 area shall be flameproof (Ex'd') type suitable for gas group IIA/IB.				
83.10	Supply of Anode Junction box (flameproof) AJB with 12 connections AJB outdoor type, with suitable shunt & resistor Enclosure shall be Aluminium LM-6, completely enclosed, outdoor type, backplate structure/wall mounted, natural air cooled suitable for the hazardous area classification with IP 65 degree of protection. The cable entry in the boxes shall be as per hazardous area classification using double compression glands or through a bend installed in the foundation of the junction box. Also, the cable entries should be properly sealed with mastic so as to prevent entry of moisture and foreign particles in the box. Canopy shall be provided for the AJB for rain water protection.	14.00	Nos.	77030.24	1078423.42
83.20	Installation of above Anode Junction box (flameproof) AJB	14.00	Nos.	11811.05	165354.68
84.00	Supply of Cathode Junction box (flameproof) CJB with 5 connections, outdoor type, with suitable shunt & resistor Enclosure shall be Aluminium LM-6, completely enclosed, outdoor type, backplate structure/wall mounted, natural air cooled suitable for the hazardous area classification with IP 65 degree of protection. The cable entry in the boxes shall be as per hazardous area classification using double compression glands or through a bend installed in the foundation of the junction box. Also, the cable entries should be properly sealed with mastic so as to prevent entry of moisture and foreign particles in the box. Canopy shall be provided for the CJB for rain water protection.	7.00	Nos.	73949.07	517643.46
84.10	Installation of Cathode Junction box (flameproof)	7.00	Nos.	11811.05	82677.34
86.00	Monitoring Junction Box (Flameproof)				



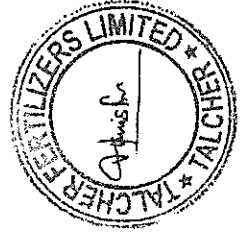
## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
86.10	Supply of Monitoring Junction Box (Flameproof) with 10 terminals outdoor type. Enclosure shall be Aluminium LM-6, completely enclosed, outdoor type, backplate structure/wall mounted, natural air coated suitable for the hazardous area classification with IP 65 degree of protection. The cable entry in the boxes shall be as per hazardous area classification using double compression glands or through a bend installed in the foundation of the junction box. Also, the cable entries should be properly sealed with mastic so as to prevent entry of moisture and foreign particles in the box. Canopy shall be provided for rain water protection, with Exd' cable glands complete with mounting frame and foundation	7.00	Nos.	77030.24	539211.71
86.20	Installation of above Monitoring Junction Box (Flameproof)	7.00	Nos.	11811.05	82677.34
87.00	Permanent Reference Cells (Cu-CuSO4): Supply and installation of Permanent Reference Electrodes of approved make with all its accessories to ensure trouble free operation. Installation of permanent half cells including connecting the cable in the Junction Box/Test Station etc. with cable lugs, sealing material, laying of cable, testing & commissioning of cell etc. all complete with required material, excavation, backfilling etc. as per specifications, recommendation of cell supplier and directions of Site Engineer / Engineer-in-Charge.				
87.10	Pre-packaged Cu/CuSO4 electrode with chemical backfill and 1c x 6 mm2 XLPE/PVC cable, unarmoured of suitable length upto reference electrode junction box/ test station without any splicing	21.00	Nos.	25163.09	528424.80
87.20	Installation of above Reference Cells (Cu-CuSO4)	21.00	Nos.	6983.90	146661.83
88.00	Cables for PCP work / TCP work (if required). Supply, Laying, Installation, Testing & Commissioning of Cables of approved make with all its accessories to ensure trouble free operation. All Cables shall be annealed high conductivity, stranded copper conductor, 650/1100V grade, XLPE/PVDF insulated, PVC/HMWPE inner sheath, armoured/unarmoured, PVC (ST2) type outer sheath, FRLS. Laying of anode header / cathode header / monitoring/ reference cell cables and connection to the CP unit / pipeline / half cell etc. The work includes excavation, installation, supply of all required materials such as sealing materials, lugs, PVC sleeve, repair materials etc., and carrying out all works such as exposing pipe, coating repair, cad welding / pin brazing, backfilling etc., in all types of strata and soil (including rock) by making the trench, back filling the trench, cable terminations, work complete in all respects including cost of all labour, material, tools etc. as per specification and instruction of site Engineer / Engineer-in-Charge and approved drawings.				
88.10	Anode tail Cable: 1C x 10 sqmm. Copper conductor PVDF/HMWPE, Unarmoured	6500.00	Mtrs	370.09	2405599.91
88.20	Cathode tail Cable 1C x 16 sq mm. Copper conductor, armoured	1050.00	Mtrs	328.62	345047.25
88.30	Ref. Cell Cable: 1C x 6 sq mm. Copper conductor, Un-Armored	1575.00	Mtrs	185.05	291447.68
88.40	Measurement Cable : 12 core x 1.5 sq mm. Copper conductor, Armored, screened	700.00	Mtrs	400.40	280281.10



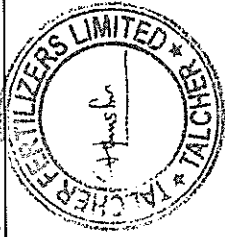
## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
88.50	Anode & cathode Header Cable: 1C x 50 sqmm. Al conductor, Armored	2100.00	Mtrs	287.94	604670.19
88.60	Supply of 6 Fiber multi mode FO Cable with all accessories for termination, this also include splicing, jointing as per requirement	1100.00	Mtrs	123.63	135992.97
88.70	Power supply cable between Power source(SS) or CP System PDB and T/R unit shall be 25mm <sup>2</sup> , stranded Aluminium conductor, 4-core, Aluminium wire armoured, XLPE insulated and PVC sheathed 1100V grade cable.	2100.00	Mtrs	410.77	862618.14
89.00	Handling, Laying, testing and commissioning of 1.1 KV Grade, XLPE Insulated, PVC inner sheathed, armoured/unarmoured, FRLS PVC outer sheathed cables including its termination directly buried, pulling through pipes including supply & fixing of cable tags, Al clamps with all labour, consumable materials and necessary hardware to make installation complete in all respect as per direction of engineer-in-charge.				
89.10	Anode tail Cable: 1C x 10 sqmm. Copper conductor PVDF/HMWPE, Unarmored	6500.00	Mtrs	174.68	1135401.68
89.20	Cathode tail Cable 1C x 16 sq mm. Copper conductor, armoured	1050.00	Mtrs	174.68	183411.04
89.30	Ref. Cell Cable: 1C x 6 sq mm. Copper conductor, un-Armored	1575.00	Mtrs	174.68	275116.56
89.40	Measurement Cable : 12 core x 1.5 sq mm. Copper conductor, Armored, screened	700.00	Mtrs	195.42	136790.58
89.50	Anode & cathode Header Cable: 1C x 35/50 sqmm. Al conductor, Armored	2100.00	Mtrs	195.42	410371.73
89.60	Handling, laying of 6 Fiber multi mode FO Cable with all accessories for termination, this also include splicing, jointing as per requirement	1100.00	Mtrs	174.68	192144.90
89.70	Power supply cable between Power source(SS) or CP System PDB and T/R unit shall be 25mm <sup>2</sup> , stranded Aluminium conductor, 4-core, Aluminium wire armoured, PVC insulated and sheathed 1100V grade cable.	2500.00	Mtrs	195.42	488537.78
90.00	Power distribution board				
90.10	Supply of CP Power distribution board for power supply to the TRUs The Power distribution board (PDB) shall be composed of one no.415 V 4 P 250A Incoming MCCB and 6 Nos.415 V, 4 P 63A outgoing MCB for input power supply to TR Unit as well as 6No.6A outgoing DP MCB for central monitoring system power supply ( if required)	1.00	Nos.	190007.30	190007.30
90.20	Installation, testing & commissioning of above Power Distribution Board	1.00	Nos.	28757.93	28757.93



## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
90.30	Supply of CP Power distribution board for Supply to the TRUS The Power distribution board (PDB) shall be composed of one no.415 V 4 P 125A, incoming MCCB and 3 no. 415 V, 4 P 63A outgoing MCB for input power supply to TR Unit as well as 6No.6A outgoing DP MCB for central monitoring system power supply ( If required)	2.00	Nos.	128383.74	256767.48
90.40	Installation, testing & commissioning of above Power Distribution Board	2.00	Nos.	28757.93	57515.85
91.00	Test Station				
91.10	Supply of Test Station with 2 nos 1c x 6 sq mm cable , Copper conductor, PVC insulated and PVC sheathed with 4" access pipe for RE installation. The test station shall be installed during TCP stage are utilized in PCP stage as well	32.00	Nos	28757.93	920253.63
91.20	Installation, testing & commissioning of above Test Station	32.00	Nos	7703.34	246506.99
92.00	Polarisation coupon Supply Installation, Testing of Polarization Coupons of approved make, complete in all respects as given in the specification and directions of Site Engineer/ Engineer-in-Charge with all its accessories to ensure trouble free operation.				
92.10	Polarization Coupons with two cables of 1c x 6 sq mm and 1c x 10 sq mm XLPE/PVC unarmoured of suitable length such as to reach Test Station connected to the coupon. The coupon shall be connected to the pipeline via a suitable rated magnetic reed switch	32.00	Nos	12324.71	394390.77
92.20	Installation, testing & commissioning of above Polarisation coupon	32.00	Nos	2156.74	69015.83
93.00	Thermit Weld				
93.10	Supply of Thermit Weld CA-15(1 lot of 20 lugs)	1.00	Lot	22595.57	22595.57
93.20	Installation of above Thermit Weld	1.00	Lot	19514.39	19514.39
94.00	Testing and commissioning of Cathodic protection system	1.00	LS	231089.94	231089.94
94.10	Post commissioning monitoring and maintenance of Cathodic protection system for 1 year, including one visit per month. In case, any rectification material required for proper operation of Cathodic protection system, the same shall be in the scope of CP contractor	1.00	LS	215684.05	215684.05
95.00	TCP-Magnesium Ribbon anodes				
95.10	Supply of TCP-Magnesium Ribbon anodes (19.05 mm x 9.52 mm, 0.35kg/ m)with 1c x 6 sq mm XLPE/PVC cable for connection upto Test station provided every 70 mtr	2500.00	Mtrs	1438.10	3595235.25
95.20	Installation of TCP-Magnesium Ribbon anodes (19.05 mm x 9.52 mm, 0.35kg/ m)with 1c x 6 sq mm XLPE/PVC cable for connection upto Test station provided every 70 mtr	2500.00	Mtrs	410.77	1026926.35





## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
96.00	Spares				
96.11	4 ½ High resistance digital multimeter (Fluke make) or equivalent	1.00	Nos	66759.39	66759.39
96.12	Portable Cu/ CuSO4 ref cells (Mc miller) or equivalent	1.00	Nos	15405.89	15405.89
96.13	AC/DC Clamp ON meter (Fluke make) or equivalent	1.00	Nos	87301.10	87301.10
96.14	TRU Spares for 7 TRU's				
96.15	D.C.Vollmeter	7.00	Nos	1951.76	13662.31
96.16	D.C.Ammeter	7.00	Nos	1951.76	13662.31
96.17	A.C.Vollmeter	7.00	Nos	1951.76	13662.31
96.18	A.C.Ammeter	7.00	Nos	1951.76	13662.31
96.19	Diodes	5.00	Nos	2362.53	11812.64
96.20	SCR's	5.00	Nos	2875.39	14376.97
96.21	D.C.Fuses for output side	7.00	Nos	390.03	2730.23
96.22	HRC fuse for Diodes	7.00	Nos	246.46	1725.24
96.23	A.C.fuses for input side	7.00	Nos	164.31	1150.16
96.24	D.C.Lightening arrester	7.00	Nos	1438.10	10066.67
96.25	A.C.Circuit breaker(MCB)	5.00	Nos	1951.76	9758.79
96.26	Electronic Control Cards each type	7.00	Nos	8729.87	61109.10
96.27	Filter circuit capacitor	7.00	Nos	975.48	6828.36
96.28	Signal light assembly for annunciation	7.00	Nos	492.92	3450.47
96.29	R.C. Surge Diverter	7.00	Nos	492.92	3450.47



## SCHEDULE OF RATES (SOR)

SL.NO.	Description of Work / Item(s)	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
96.30	Control transformer	7.00	Nos	3902.72	27319.03
96.31	Coarse voltage control switch	7.00	Nos	2875.39	20127.76
96.32	Coarse current control switch	7.00	Nos	1335.20	9346.43
96.33	Fine voltage control switch	7.00	Nos	2464.62	17252.36
96.34	Fine current control switch	7.00	Nos	1335.20	9346.43
96.35	Auto Manual Made selector switch	7.00	Nos	3902.72	27319.03
96.36	Toggle switches	14.00	Nos	472.19	6610.61
96.37	Assorted Glass cartridge fuses	70.00	Nos	164.31	11501.58
Total Contract Amount (in INR) excluding GST					₹ 1,03,99,25,960.00
Rate of GST (presently @ 18%) in INR					₹ 18,71,86,673.00
Total Contract Amount (in INR) including GST					₹ 1,22,71,12,633.00



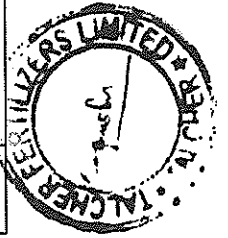
# **ANNEXURE-D**

## **LIST OF AHR ITEMS**

**ANNEXTURE 'D' TO DLOA No. TFL/TALCHER/C&P/PIPING WORKS/LOA-001/24-25 dated 10.04.2024**

**LIST OF AHR ITEMS**

Sl.No	ITEM DESCRIPTION	QUANTITY	UNITS	RATE AND AMOUNT IN INDIAN RUPEES	
				UNIT PRICE	TOTAL AMOUNT EXCLUDING GST
1.00	(PART-A)				
2.00	SUPPLY OF PIPING ITEMS:				
3.00	FOR U/G PIPING:				
3.10	"Supply , taking over" as defined in the specifications, handling, loading/unloading, transportation, unloading and Laying of bare/coated line pipes and other materials like valve, fittings, flanges & TPI inspection etc. from Contractor's suppliers locations/works etc. to Contractor's stock yard/workshop/work-site including preliminary activities, preparation of drawings, wherever required for crossing etc. Handling, stacking, stringing of the UG pipes, Carrying out inspection of materials including line pipes at the time of laying/ installation of line pipes, associated valves, tees, insulating joints, flanges & fittings for buried application of all sizes, thickness & ANSI class rating and accessories as per specification wherever required depending on site condition.Arrangement of all additional lands required for Contractor's storage, fabrication, access for construction, etc. procurement and supply of all materials, consumables, equipment, labour and other inputs, carrying out all temporary, ancillary, auxiliary works, etc.				
4.00	FOR A/G PIPING:				
4.10	Complete works for Supply of pipes, flanges, fittings & Valves for aboveground installation including all taxes, duties, transportation and inspection charges & TPI inspection, but not limited to, the following items in accordance with PMS (piping material specification), relevant specifications & drawings indicated in job specification and instructions of Owner/Consultant and as per all provisions of the CONTRACT. Supply of all piping items inclusive of spares (For details refer PDIL-MTO as well as SOR). Supply & Transportation of all piping materials from storage point to work site/shop including from shop to work site, cleaning, stacking, prefabrication / fabrication at shop. In case of IBR piping, material identification, drawing approval, hydro-test witness and final approval of fabricated piping by IBR authorities for taking the same in use, shall also be included in the quoted rate.				
5.00	SUPPLY OF PIPING ITEMS				
5.12	PIPE SCHXXS, BE IBR,0.75",SMLS,ASTM A335 GR.P22,ASME B36.10	30.00	MTR.	1477.18	44315.36
5.15	PIPE SCH 80, PE .0.75",SMLS,API 5L GR.B,ASME B36.10	2046.00	MTR.	423.53	866547.18



**ANNEXTURE 'D' TO DLOA No. TFL/TALCHER/C&PIPING WORKS/LOA-001/24-25 dated 10.04.2024**

**LIST OF AHR ITEMS**

5.16	PIPE SCHXXS, BE 1BR, 1", SMLS,ASTM A335 GR.P22,ASME B36.10	186.00	MTR.	1940.59	360950.06
5.17	PIPE SCHXS, THD, 1", SMLS,ASTM A106 GR.B,HOT DIP GALV.,ASME B36.10	90.00	MTR.	673.98	60658.45
5.18	PIPE SCHXXS, BE 1BR, 1 1/2", SMLS,ASTM A335 GR.P22,ASME B36.10	24.00	MTR.	3404.21	81701.06
5.23	PIPE SCHXS, THD, 2", SMLS,ASTM A106 GR.B,HOT DIP GALV.,ASME B36.10	702.00	MTR.	1225.13	860043.44
5.24	PIPE SCH 40, BE, 2", SMLS,API 5L GR.B,C&W,ASME B36.10	18.00	MTR.	642.08	11557.41
5.27	PIPE SCHSTD, THD, 3", SMLS,ASTM A106 GR.B,HOT DIP GALV.,ASME B36.10	774.00	MTR.	2067.41	1600176.98
5.30	PIPE SCHSTD, THD, 4", SMLS,ASTM A106 GR.B,HOT DIP GALV.,ASME B36.10	3048.00	MTR.	2942.39	8968414.65
5.33	PIPE SCH STD, BE, 6", SMLS,API 5L GR.B,ASME B36.10	2046.00	MTR.	3306.10	6764290.11
5.34	PIPE SCHSTD, BE, 6", SMLS,ASTM A106 GR.B,HOT DIP GALV.,ASME B36.10	918.00	MTR.	4599.83	4222646.19
5.38	PIPE SCH120, BE 1BR, 8", SMLS,ASTM A106 GR.B,ASME B36.10	24.00	MTR.	11038.96	264935.03
5.53	PIPE SCH 10, BE, 16", LSAW,API 5L GR.B,C&W,ASME B36.10	24.00	MTR.	8965.96	215183.15
5.54	PIPE SCH STD, BE, 16", LSAW,API 5L GR.B,ASME B36.10	1206.00	MTR.	8965.96	10812953.04
5.55	PIPE SCH 10, BE, 16", ERW,API 5L GR.B,ASME B36.10	30.00	MTR.	8965.96	268978.93
5.57	PIPE SCH 10, BE, 18", LSAW,API 5L GR.B,C&W,ASME B36.10	192.00	MTR.	10109.74	1941070.27
5.60	PIPE SCH 10, BE, 20", LSAW,API 5L GR.B,C&W,ASME B36.10	24.00	MTR.	11262.29	270294.99
5.63	PIPE SCH XS, BE, 20", SMLS,API 5L GR.B,ASME B36.10	306.00	MTR.	29155.93	8921716.02
5.68	PIPE SCH 40, BE, 24", SMLS,API 5L GR.B,ASME B36.10	18.00	MTR.	66473.84	1196529.12
5.70	PIPE SCH STD, BE, 28", EFW,ASTM A671 GR.CC60.CL32,ASME B36.10	30.00	MTR.	45280.47	1358414.19
7.00	FLANGES (150#)-SO-RF/THD-RF				
7.12	FLANGE (THD-RF 125 AARH), #150, 1", ASTM A105 HOT DIP GALV.,ASME B16.5	5.00	NOS	409.97	2049.86
7.13	FLANGE (SO-RF 125 AARH), #150, 1 1/2", CS ASTM A105,ASME B16.5	2.00	NOS	575.08	1150.16



**ANNEXTURE 'D' TO DLOA No. TFL/TALCHER/C&P/PIPING WORKS/LOA-001/24-25 dated 10.04.2024**

**LIST OF AHR ITEMS**

7.14	FLANGE (THD-RF 125 AARH),#150,2",ASTM A105 HOT DIP GALV.,ASME B16.5	55.00	NOS	791.23	43517.75
7.16	FLANGE (SO-RF 125 AARH), #150, 3",ASTM A105 HOT DIP GALV.,ASME B16.5	6.00	NOS	1078.37	6470.23
7.17	FLANGE (THD-RF 125 AARH),#150,3",CS ASTM A105,ASME B16.5	12.00	NOS	1257.84	15094.02
7.18	FLANGE (THD-RF 125 AARH),#150,4",ASTM A105 HOT DIP GALV.,ASME B16.5	9.00	NOS	1725.24	15527.13
7.31	<b>FLANGES (150#)-WNRF</b>				
7.32	W.N.FLANGE(WN-RJ IBR),#1500,3/4",CS ASTM A105,ASME B16.5	35.00	NOS	970.69	33974.31
7.33	W.N.FLANGE(WN-RJ IBR),#2500,1",ASTM A182 F22,ASME B16.5	37.00	NOS	11302.97	418209.88
7.36	W.N.FLANGE(WN-RF 125 AARH),#150,4",ASTM A182 F304,ASME B16.5	3.00	NOS	4658.86	13976.57
7.38	W.N.FLANGE(WN-RF 125 AARH),#150,6",ASTM A105 HOT DIP GALV.,ASME B16.5	3.00	NOS	3306.90	9920.71
7.39	W.N.FLANGE(WN-RF 125 AARH),#150,8",ASTM A182 F304,ASME B16.5	6.00	NOS	11646.74	69880.44
7.40	W.N.FLANGE(WN-RJ IBR),#1500,10",CS ASTM A105,ASME B16.5	3.00	NOS	57515.85	172547.56
7.44	W.N.FLANGE(WN-RF 125 AARH),#150,28",ASTM A350 LF2 CL.1,ASME B16.47 SR.B	1.00	NOS	63300.14	63300.14
7.47	W.N.FLANGE(WN-RF 125 AARH),#150,42",ASTM A350 LF2 CL.1,ASME B16.47 SR.B	1.00	NOS	127192.11	127192.11
7.48	W.N.FLANGE(WN-RF 125 AARH),#150,44",CS ASTM A105,ASME B16.47 SR.B	1.00	NOS	93463.46	93463.46
7.49	W.N.FLANGE(WN-RF 125 AARH),#150,48",CS ASTM A105,ASME B16.47 SR.B	1.00	NOS	100652.34	100652.34
7.51	<b>BLIND FLANGES</b>				
7.54	BLIND FLANGE (RF 125 AARH),150#3",ASTM A105 HOT DIP GALV.,ASME B16.5	4.00	NOS	1257.84	5031.34
7.55	BLIND FLANGE (RF 125 AARH),150#4",ASTM A105 HOT DIP GALV.,ASME B16.5	5.00	NOS	1581.87	7908.33
7.56	BLIND FLANGE (RF 125 AARH),150#6",ASTM A105 HOT DIP GALV.,ASME B16.5	2.00	NOS	2875.39	5750.79
7.52	BLIND FLANGE (RF 125 AARH),150#42",ASTM A350 LF2 CL.1,ASME B16.47 SR.B	1.00	NOS	278491.26	278491.26
7.63	BLIND FLANGE (RF 125 AARH),150#48",CS ASTM A105,ASME B16.47 SR.B	1.00	NOS	169671.36	169671.36



**ANNEXTURE 'D' TO DLOA No. TFL/TALCHER/C&P/PIPING WORKS/LOA-001/24-25 dated 10.04.2024**

**LIST OF AHR ITEMS**

8.00	GASKET(150#)							
8.11	GASKET (RJ OCT), 1500#,3/4", SOFT IRON,ASME B16.20		80.00	NOS	174.68		13974.17	
8.12	GASKET (SPRL-WND RF), 150#,3/4", TP304 SS WDG;GPH FLR;TP304 SS INR RNG;CS OTR RNG,ASME B16.20		180.00	NOS	32.70		5886.38	
8.14	GASKET (RJ OCT), 2500#, 1",ASTM A182 F5,ASME B16.20		85.00	NOS	513.66		43661.32	
8.17	GASKET (SPRL-WND RF), 150#,2", TP304 SS WDG; GPH FLR; TP304 SS INR RNG/ OTR RNG,ASME B16.20		48.00	NOS	103.69		4977.10	
8.18	GASKET (SPRL-WND RF), 150#,2", TP304 SS WDG;GPH FLR;TP304 SS INR RNG;CS OTR RNG,ASME B16.20		126.00	NOS	124.43		15677.88	
8.20	GASKET (SPRL-WND RF), 150#,3", TP304 SS WDG; GPH FLR; TP304 SS INR RNG/ OTR RNG,ASME B16.20		12.00	NOS	152.34		1828.13	
8.21	GASKET (SPRL-WND RF), 150#,3", TP304 SS WDG;GPH FLR;TP304 SS INR RNG;CS OTR RNG,ASME B16.20		33.00	NOS	124.43		4106.11	
8.23	GASKET (SPRL-WND RF), 150#,4", TP304 SS WDG; GPH FLR; TP304 SS INR RNG/ OTR RNG,ASME B16.20		6.00	NOS	233.70		1402.20	
8.24	GASKET (SPRL-WND RF), 150#,4", TP304 SS WDG;GPH FLR;TP304 SS INR RNG;CS OTR RNG,ASME B16.20		12.00	NOS	178.67		2143.98	
8.26	GASKET (SPRL-WND RF), 150#,6", TP304 SS WDG;GPH FLR;TP304 SS INR RNG;CS OTR RNG,ASME B16.20		18.00	NOS	237.69		4278.39	
8.27	GASKET (SPRL-WND RF), 150#,8", TP304 SS WDG; GPH FLR; TP304 SS INR RNG/ OTR RNG,ASME B16.20		15.00	NOS	311.07		4656.03	
8.28	GASKET (SPRL-WND RF), 150#,8", TP304 SS WDG;GPH FLR;TP304 SS INR RNG;CS OTR RNG,ASME B16.20		21.00	NOS	284.75		5979.70	
8.34	GASKET (SPRL-WND RF), 150#, 16", TP304 SS WDG; GPH FLR; TP304 SS INR RNG/ OTR RNG,ASME B16.20		3.00	NOS	974.68		2924.05	
8.35	GASKET (SPRL-WND RF), 150#, 16", TP304 SS WDG;GPH FLR;TP304 SS INR RNG;CS OTR RNG,ASME B16.20		6.00	NOS	718.65		4311.89	
8.38	GASKET (SPRL-WND RF), 150#,24", TP304 SS WDG;GPH FLR;TP304 SS INR RNG;CS OTR RNG,ASME B16.20		6.00	NOS	1138.19		6829.16	
8.41	GASKET (SPRL-WND RF), 150#,44", TP304 SS WDG;GPH FLR;TP304 SS INR RNG;CS OTR RNG,ASME B16.20/B16.47 SR.LB		3.00	NOS	2246.87		6740.62	
10.00	ELBOW(1.5D)							
10.19	ELBOW 90 DEG (3000#),THD.2",ASTM A105 HOT DIP GALV.,ASME B16.11		30.00	NOS	1049.66		31489.75	
10.22	ELBOW 90 DEG (3000#),THD.3",ASTM A105 HOT DIP GALV.,ASME B16.11		6.00	NOS	3729.64		22377.82	
10.25	ELBOW 90 DEG (3000#),THD.4",ASTM A105 HOT DIP GALV.,ASME B16.11		22.00	NOS	6486.98		142713.65	



**ANNEXTURE 'D' TO DLOA No. TFL/TALCHER/C&P/PIPING WORKS/LOA-001/24-25 dated 10.04.2024**

**LIST OF AHR ITEMS**

10.48	ELBOW 90 DEG (SCH XS),BW 20",ASTM A234 WPB-SMLS,ASME B16.9	17.00	NOS	26757.51	454877.73
10.51	ELBOW 90 DEG (82.0MM),BW IBR,24",ASTM A234 WP22,ASME B16.9	35.00	NOS	1185046.69	41476634.17
10.57	ELBOW 90 DEG (SCH XS),BW 44",ASTM A234 WPB-WLDD,ASME B16.9	1.00	NOS	195413.52	195413.52
10.58	ELBOW 90 DEG (SCH XS),BW 48",ASTM A234 WPB-WLDD,ASME B16.9	40.00	NOS	239198.47	9567938.64
10.59	ELBOW 45 DEG(BW)				
10.62	ELBOW 45 DEG(SCH20),BW,42",ASTM A403 WP316L-WLDD,ASME B16.9	7.00	NOS	514074.15	3598519.04
10.70	ELBOW 45 DEG(SCH 10S),BW,18",ASTM A403 WP304-WLDD,ASME B16.9	1.00	NOS	19054.97	19054.97
10.71	ELBOW 45 DEG(68.0MM),BW IBR,20",ASTM A234 WP22,ASME B16.9	13.00	NOS	328391.51	4259089.58
10.73	ELBOW 45 DEG(82.0MM),BW IBR,24",ASTM A234 WP22,ASME B16.9	15.00	NOS	770300.85	11554512.71
10.77	ELBOW 45 DEG(SCH XS),BW,42",ASTM A420 WPL6-WLDD,ASME B16.9	3.00	NOS	126491.80	379475.41
10.78	ELBOW 45 DEG(SCH XS),BW,48",ASTM A234 WPB-WLDD,ASME B16.9	4.00	NOS	133789.16	535156.65
12.00	WELDOLET				
12.12	WELDOLET(BW),8"X3",CS ASTM A105,MSS SP 97	3.00	NOS	2773.30	8319.90
12.15	WELDOLET(BW),10"X4",CS ASTM A105,MSS SP 97	2.00	NOS	4776.10	9552.21
12.21	WELDOLET(BW, IBR),20"X12",ASTM A182 F22,MSS SP 97	10.00	NOS	70867.89	708678.89
12.25	WELDOLET(BW, IBR),24"X12",ASTM A182 F22,MSS SP 97	18.00	NOS	70867.89	1275621.99
14.00	TEE				
14.14	TEE(THD),2"X1",ASTM A105 HOT DIP GALV.,ASME B16.11	28.00	NOS	1540.99	43147.66
14.15	TEE(THD),3"X3",ASTM A105 HOT DIP GALV.,ASME B16.11	2.00	NOS	5135.03	10270.06
14.16	TEE(THD),3"X2",ASTM A105 HOT DIP GALV.,ASME B16.11	4.00	NOS	5135.03	20540.12
14.17	TEE(THD),3"X1",ASTM A105 HOT DIP GALV.,ASME B16.11	3.00	NOS	5135.03	15405.09

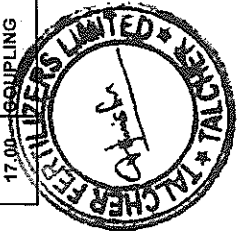




**ANNEXTURE 'D' TO DLOA No. TFL/TALCHER/C&P/PIPING WORKS/LOA-001/24-25 dated 10.04.2024**

**LIST OF AHR ITEMS**

14.20	TEE(THD),4"x4",ASTM A105 HOT DIP GALV.,ASME B16.11	4.00	NOS	10784.52	43138.09
14.22	TEE(THD),4"x3",ASTM A105 HOT DIP GALV.,ASME B16.11	2.00	NOS	11297.39	22594.77
14.23	TEE(THD),4"x2",ASTM A105 HOT DIP GALV.,ASME B16.11	19.00	NOS	11297.39	214650.34
14.24	TEE(THD),4"x3/4",ASTM A105 HOT DIP GALV.,ASME B16.11	3.00	NOS	11297.39	33892.16
14.28	TEE(BW),6"x3",ASTM A234 WPB-SMLS,HOT DIP GALV.,ASME B16.9	2.00	NOS	3184.07	6368.14
14.30	TEE(BW),8"x8",ASTM A234 WPB-WLDD,ASME B16.9	2.00	NOS	9243.53	18487.07
14.39	TEE(BW, IBR),24"x20",ASTM A234 WP22,ASME B16.9	1.00	NOS	1283834.21	1283834.21
14.40	TEE(BW),30"x30",ASTM A234 WPB-WLDD,ASME B16.9	2.00	NOS	128383.74	256767.48
15.00	REDUCER				
15.20	REDUCER ECC.,8"x4",ASTM A403 WP304-WLDD,ASME B16.9	2.00	NOS	7189.58	14379.36
15.21	REDUCER ECC.,10"x8",ASTM A234 WPB-SMLS,ASME B16.9	2.00	NOS	4895.75	9791.49
15.23	REDUCER ECC.,12"x10",ASTM A234 WPB-WLDD,ASME B16.9	2.00	NOS	11811.05	23622.10
15.29	REDUCER ECC.,24"x20",ASTM A234 WPB-WLDD,ASME B16.9	1.00	NOS	644998.28	644998.28
16.00	CAP				
16.16	CAP,3/4,ASTM A182 F22,ASME B16.9	19.00	NOS	557.53	10593.09
16.18	CAP,3/4,ASTM A182 F304,ASME B16.11	66.00	NOS	283.15	18688.07
16.19	CAP,3/4,ASTM A350 LF2 CL.1,ASME B16.11	19.00	NOS	289.53	5501.13
16.28	CAP,2,ASTM A105 HOT DIP GALV.,ASME B16.11	28.00	NOS	549.56	15387.54
16.29	CAP,3,ASTM A105 HOT DIP GALV.,ASME B16.11	2.00	NOS	1195.52	2391.24
16.30	CAP,4,ASTM A105 HOT DIP GALV.,ASME B16.11	3.00	NOS	1683.76	5051.28
17.00	COUPLING				



**ANNEXTURE 'D' TO DLOA No. TFL/TALCHER/C&P/PIPING WORKS/LOA-001/24-25 dated 10.04.2024**

**LIST OF AHR ITEMS**

17.80	COUPLING,3,ASTM A105 HOT DIP GALV.,ASME B16.11	136.00	NOS	1037.69	141126.40
17.90	COUPLING,4,ASTM A105 HOT DIP GALV.,ASME B16.11	550.00	NOS	1537.80	845788.51
19.00	NIPPLE				
19.27	NIPPLE,3/4,SMLS,ASTM A312 TP304,ASME B36.19	65.00	NOS	338.99	22034.05
19.28	NIPPLE,3/4,SMLS,ASTM A312 TP304,ASME B36.19	66.00	NOS	338.99	22373.04
19.29	STEAM TRAP (Refer PMS- Annexure for STEAM TRAP)				
19.31	STEAM TRAP, 3/4, 300#, FLG.	16.00	NOS	24649.42	394390.77
20.00	SUPPLY OF PIPING ITEMS ON THE BASIS OF WEIGHT BASIS: This SOR item is applicable only when the extra supply items comes with different sizes, which are not included in SOR item "SUPPLY OF PIPING ITEMS" & applicable only after approval of Client/PMC.				
20.11	PIPING ≤ 2" SIZE				
20.12	Carbon Steel (Non-IBR)	1.00	MT.	258283.74	258283.74
20.13	Carbon Steel (IBR)	1.00	MT.	317777.67	317777.67
20.14	Alloy Steel (IBR)	1.00	MT.	474214.25	474214.25
20.15	Stainless Steel	1.00	MT.	416906.58	416906.58
20.16	PIPING > 2" SIZE				
20.17	Carbon Steel(Non-IBR)	1.00	MT.	251697.85	251697.85
20.19	Alloy Steel (IBR)	1.00	MT.	782919.88	782919.88
20.20	Stainless Steel	1.00	MT.	430658.22	430658.22
28.20	PIPE: ALLOY STEEL PIPING (IBR); THK. > 10MM				
29.00	FABRICATION (BUTT WELD)				
29.20	NB 8 INCH - 14 INCH	273.00	ID	4736.22	1292989.21
	28" NB INCH - 24 INCH	8500.00	ID	7578.12	64414005.36



**ANNEXTURE 'D' TO DLOA No. TFL/TALCHER/C&PIPING WORKS/LOA-001/24-25 dated 10.04.2024**

**LIST OF AHR ITEMS**

58.00	PIPE SUPPORTS						
59.00	SUPPLY & FABRICATION OF PIPE SUPPORTS						
59.10	Supply & Fabrication of pipe supports as per drawings, standards, Specifications, NIT conditions & instructions of Owner/Consultant. The rate shall include the cost of materials, consumables, surface preparation & application of primer and painting, labour & overheads/profits etc. Supply & fabrication of all types of supports is in contractor scope.						
60.00	DETAILS OF PIPE SUPPORTS						
60.10	CATEGORY, MATERIAL OF CONSTRUCTION						
60.40	PS 3, Means stainless steel supports	4.00	MT	378393.05		1513572.20	
61.00	ERECTION OF PIPE SUPPORTS						
61.10	Erection of supports fabricated by Contractor including primer/painting and/or supplied by vendors. The rate shall include cost of erection as part of piping, making necessary scaffoldings at all elevations, welding, labour, consumables, application of primer and finish paint, casting of civil padsteel for trunion supports, casting of civil sleeper supports for piping, overheads/profits etc to complete all related activities as per NIT and instruction of Owner/ Consultant.						
61.20	PS 1, Means carbon steel supports.	10.00	MT	45561.23		455612.33	
61.30	PS 2, Means alloy steel supports	2.00	MT	61006.21		122012.41	
61.40	PS 3, Means stainless steel supports	4.00	MT	66926.88		267707.54	
61.50	PS 4, PUF supports for cold lines	1.00	MT	46334.12		46334.12	
63.00	REINFORCING PADS FOR PIPES :- Supply of materials, consumables & Fabrication/erection of reinforcing pads for pipe connection wherever required and erection, fitup, welding & testing (including DPMP) if required of the same and performing Positive Material Identification(PMI) using alloy analysers as per the specifications, drawings and instructions of the Engineer-in-Charge.						
63.11	BRANCH WELD WITH RP, 24X16, CARBON STEEL, ASME B31.3	2.00	NOS	7413.81		14827.62	
63.12	BRANCH WELD WITH RP, 30X20, CARBON STEEL, ASME B31.3	3.00	NOS	8752.20		26256.61	
63.13	BRANCH WELD WITH RP, 30X14, CARBON STEEL, ASME B31.3	3.00	NOS	8442.73		25328.19	



**ANNEXTURE 'D' TO DLOA No. TFL/TALCHER/C&P/PIPING WORKS/ILOA-001/24-25 dated 10.04.2024**

**LIST OF AHR ITEMS**

63.14	BRANCH WELD WITH RP,30X10,CARBON STEEL,ASME B31.3	3.00	NOS	7722.49	23167.46
63.15	BRANCH WELD WITH RP,30X8,CARBON STEEL,ASME B31.3	3.00	NOS	7207.23	21621.69
63.16	BRANCH WELD WITH RP,30X2,CARBON STEEL,ASME B31.3	3.00	NOS	6692.77	20078.30
63.17	BRANCH WELD WITH RP,48X20,CARBON STEEL,ASME B31.3	2.00	NOS	6177.51	12355.02
63.18	BRANCH WELD WITH RP,8X3,STAINLESS STEEL,ASME B31.3	2.00	NOS	19048.59	38097.17
63.19	BRANCH WELD WITH RP,8X2,STAINLESS STEEL,ASME B31.3	9.00	NOS	18533.33	166799.96
63.20	BRANCH WELD WITH RP,18X8,STAINLESS STEEL,ASME B31.3	2.00	NOS	22652.20	45304.40
63.21	BRANCH WELD WITH RP,18X3,STAINLESS STEEL,ASME B31.3	2.00	NOS	21622.48	43244.97
64.00	<b>PAINTING</b>				
64.10	<b>PIPING</b>				
64.20	Supply & Application of paints and primers as per PDIL TS-2007/Drawings/docs, preparation of surfaces and application of primer and finish paints, identification (Line numbering), lettering, colour bands, colour coding etc, as specified including rubdown and touch up of shop primer wherever required, providing scaffolding for all heights, labour, material, tools and ladders, consumables supervision etc, to complete the work in all respects, drawings and direction of Engineer-in-Charge for all types of uninsulated piping and insulated piping as specified including all pipes, fittings, flanges, supports, valves etc. Surface preparation by blast cleaning and application of first coat of primer (inorganic zinc silicate) shall be done in fabrication yard prior to erection. For insulated piping wherever blast cleaning with no primer application is specified, in such cases finish paints shall also be applied in the fabrication yard. The identification marks of the piping and joints shall be noted before blasting and the same shall be transferred on primed surface with Polyurethane paint or as per the instructions of Engineer-in-Charge. Notes: 1. All joints (fabrication as well as erection joints) shall be left unpainted till hydrotesting. 2. No extra payment shall be made for identification (line numbering etc.) of insulated and uninsulated lines.				
65.00	<b>UNINSULATED (CS+AS) UP TO 90°C</b>				
65.11	3/4"	2.00	SQ-Mtr.	735.40	1470.80
65.12	1"	2.00	SQ-Mtr.	735.40	1470.80
65.13	1 1/2"	2.00	SQ-Mtr.	735.40	1470.80
65.14	2"	460.00	SQ-Mtr.	735.40	338283.50



ANNEXTURE 'D' TO DLOA No. TFL/TALCHER/C&P/PIPING WORKS/LOA-001/24-25 dated 10.04.2024

LIST OF AHR ITEMS

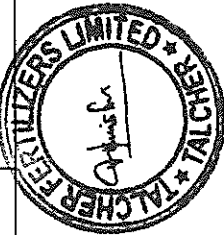
65.15	3"		930.00	SQ-Mtr.	735.40	683920.99
65.16	4"		705.00	SQ-Mtr.	735.40	518456.23
65.17	6"		1375.00	SQ-Mtr.	735.40	1011173.50
65.18	8"		1475.00	SQ-Mtr.	735.40	1084713.39
65.19	10"		3475.00	SQ-Mtr.	735.40	2555511.22
65.20	12"		750.00	SQ-Mtr.	735.40	551549.18
65.21	14"		1280.00	SQ-Mtr.	735.40	941310.61
65.22	16"		1600.00	SQ-Mtr.	735.40	1176638.26
65.23	18"		290.00	SQ-Mtr.	735.40	213265.68
65.24	20"		635.00	SQ-Mtr.	735.40	466978.31
65.25	24"		1500.00	SQ-Mtr.	735.40	1103098.37
65.26	28"		55.00	SQ-Mtr.	735.40	40446.94
65.27	30"		1805.00	SQ-Mtr.	735.40	1327395.03
65.28	42"		3100.00	SQ-Mtr.	735.40	2279736.62
65.29	44"		180.00	SQ-Mtr.	735.40	132371.80
65.30	48"		4400.00	SQ-Mtr.	735.40	3235755.21
66.00	UNINSULATED (CS+AS) ABOVE 90°C TO 200°C					
66.11	3/4"		2.00	SQ-Mtr.	656.44	1312.87
66.12	1"		2.00	SQ-Mtr.	656.44	1312.87
66.13	1 1/2"		30.00	SQ-Mtr.	656.44	19693.06
66.14	6"		310.00	SQ-Mtr.	656.44	203494.93



**ANNEXTURE 'D' TO DLOA No. TFL/TALCHER/C&P/PIPING WORKS/LOA-001/24-25 dated 10.04.2024**

**LIST OF AHR ITEMS**

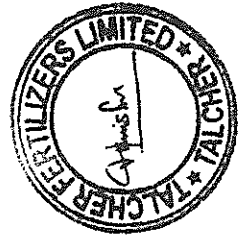
66.15	12"	304.00	SQ-Mtr.	656.44	199556.32
66.17	MODIFICATION/EXTRA WORKS (IF ANY) :- Cutting, bevelling, fitup, welding of different sizes of Carbon Steel /Alloy Steel/Stainless Steel piping of all types and thicknesses in shop, in position, on ground/overhead on rack and at all elevations; transportation of pipes, fittings, flanges etc from owner's storage point to work site/ work shop, making necessary scaffoldings, consumables, machinery, tools, tackles, labour, primer, painting and supervision including attending repairs for completing the work as per the instruction of Engineer-in-charge.				
66.20	HACKSAW CUTTING C-S PIPING	150.00	Inch dia	669.20	100379.56
66.21	HACKSAW/ PLASMA CUTTING S.S PIPING	150.00	Inch dia	1596.02	239403.45
66.23	BEVELLING S.S PIPING	150.00	Inch dia	1338.39	200759.12
72.10	PIPING WITH OPERATING TEMPERATURE UP TO 400 DEG C & NOMINAL PIPE SIZE UP TO 14' NB - Supply and application of insulation as per PDIL TS/ES/docs (Mentioned in MIT) including cleaning , all complete with tools, tackles, scaffolding at all elevation, manpower, materials such as aluminium bands, lacing, binding, stitching wire, labours, cleaning , all complete with tools, tackles, materials such as aluminium bands, lacing, binding, stitching wire, labours,cladding, inspection, testing and guarantee are using Rock Wool Mattress / Slabs (in 2 halves) as per drawings, documents, codes, standards and technical specification and as per instructions of Owner / Consultant.				
72.11	Insulation Thick. 25 MM For Pipe Size 1/2"	3.00	SQ-Mtr	1669.40	5008.21
72.12	Insulation Thick. 25 MM For Pipe Size 3/4"	5.00	SQ-Mtr	1680.57	8402.85
72.14	Insulation Thick. 30 MM For Pipe Size 1"	4.00	SQ-Mtr	1723.64	6894.56
72.16	Insulation Thick. 30 MM For Pipe Size 1 1/2"	2.00	SQ-Mtr	1745.97	3491.95
72.17	Insulation Thick. 30 MM For Pipe Size 2"	47.00	SQ-Mtr	1760.33	82735.57
72.18	Insulation Thick. 30MM For Pipe Size 3"	2.00	SQ-Mtr	1783.46	3566.92
72.19	Insulation Thick. 30 MM For Pipe Size 4"	10.00	SQ-Mtr	1797.82	17978.19
72.20	Insulation Thick. 30 MM For Pipe Size 6"	14.00	SQ-Mtr	1816.16	25426.30
72.21	Insulation Thick. 30 MM For Pipe Size 8"	18.00	SQ-Mtr	1828.13	32506.31
72.26	Insulation Thick. 25 MM For Pipe Size 12"	6.00	SQ-Mtr	1791.44	10748.63



**ANNEXTURE 'D' TO DLOA No. TFL/TALCHER/C&P/PIPING WORKS/LOA-001/24-25 dated 10.04.2024**

**LIST OF AHR ITEMS**

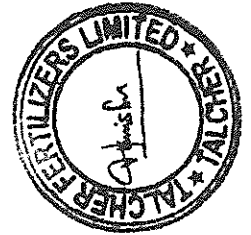
72.27	Insulation Thick. 30 MM For Pipe Size 12"	30.00	SQ-Mtr	1844.08	55322.42
73.00	PIPING WITH OPERATING TEMPERATURE UP TO 400 DEG C & NOMINAL PIPE SIZE ABOVE TO 14" NB - Supply and application of insulation as per PDIL TSES/docs including cleaning , all complete with tools, tackles, scaffolding at all elevation, manpower, materials such as aluminium bands, lacing, binding, stitching wire, labours, cleaning , all complete with tools, tackles, materials such as aluminium bands, lacing, binding, stitching wire, labours, cladding, inspection, testing and guarantee are using Rock Wool Mattress / Slabs (in 2 halves) as per drawings, documents, codes, standards and technical specification and as per instructions of Owner / Consultant.				
73.10	Insulation Thick. 40 MM For Pipe Size 20"	45.00	SQ-Mtr	2008.39	90377.50
73.20	Insulation Thick. 40 MM For Pipe Size 24"	2450.00	SQ-Mtr	2597.82	6364670.19
73.30	Insulation Thick. 40 MM For Pipe Size 44"	94.00	SQ-Mtr	2612.98	245620.05
77.00	<b>INSPECTION POCKETS</b>				
77.10	Inspection pockets of sizes 4" X 4" to be made as instructions of Owner / Consultant at site.	4.00	NOS.	1449.26	5797.05
78.00	<b>PART-C(CATHODIC PROTECTION)</b>				
80.00	<b>MMO wire anode</b>				
80.20	Installation of MMO wire anode	2250.00	Mtrs	400.40	900903.55
81.00	<b>Canistered MMO Tubular anodes</b>				
81.20	Installation of above Canistered MMO Tubular anodes	105.00	Nos.	12324.71	1294094.70
83.00	<b>Junction Boxes:</b> Supply, Installation & Testing of Junction Boxes of approved make, complete in all respects as given in the specification and SOW and directions of Site Engineer/ Engineer-in-Charge with all its accessories to ensure trouble free operation. **Junction Boxes installed in Zone- 1/Zone-2 area shall be flameproof (Ex'd') type suitable for gas group IIA/IB.				
83.20	Installation of above Anode Junction box (flameproof) A/IB	14.00	Nos.	11811.05	165354.68



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**LIST OF AHR ITEMS**

84.00	Supply of Cathode Junction box (flameproof) CJB with 5 connections, outdoor type, with suitable shunt & resistor Enclosure shall be Aluminium LM-6, completely enclosed, outdoor type, backplate structure/wall mounted, natural air cooled suitable for the hazardous area classification with IP 65 degree of protection. The cable entry in the boxes shall be as per hazardous area classification using double compression glands or through a bend installed in the foundation of the junction box. Also, the cable entries should be properly sealed with mastic so as to prevent entry of moisture and foreign particles in the box. Canopy shall be provided for the CJB for rain water protection.						
84.10	Installation of Cathode Junction box (flameproof)	7.00	Nos.	11811.05		82677.34	
85.00	Monitoring Junction Box (Flameproof)						
85.20	Installation of above Monitoring Junction Box (Flameproof)	7.00	Nos.	11811.05		82677.34	
87.00	Permanent Reference Cells (Cu-CuSO4): Supply and Installation of Permanent Reference Electrodes of approved make with all its accessories to ensure trouble free operation. Installation of permanent half cells including connecting the cable in the Junction Box/Test Station etc. with cable lugs, sealing material, laying of cable, testing & commissioning of cell etc. all complete with required material, excavation, backfilling etc. as per specifications, recommendation of cell supplier and directions of Site Engineer / Engineer-in-Charge.						
87.20	Installation of above Reference Cells (Cu-CuSO4)	21.00	Nos.	6983.90		146661.83	
89.00	Handling, Laying, testing and commissioning of 1.1 KV Grade, XLPE Insulated, PVC inner sheathed, armoured/unarmoured, FRLS PVC outer sheathed cables including its termination directly buried, pulling through pipes including supply & fixing of cable tags, AI clamps with all labour, consumable materials and necessary hardware to make installation complete in all respect as per direction of engineer-in-charge.						
89.60	Handling, laying of 6 Fiber multi mode FO Cable with all accessories for termination, this also include splicing, jointing as per requirement	1100.00	Mtrs	174.68		192144.90	
90.00	Power distribution board						
90.10	Supply of CP Power distribution board for power supply to the TRUS The Power distribution board (PDB) shall be composed of one no.415 V 4 P 250A incoming MCCB and 6 Nos.415 V, 4 P 63A outgoing MCB for input power supply to TR Unit as well as 6No.6A outgoing DP MCB for central monitoring system power supply ( if required)	1.00	Nos.	190007.30		190007.30	
90.20	Installation, testing & commissioning of above Power Distribution Board	1.00	Nos.	28757.93		28757.93	





**ANNEXTURE 'D' TO DLOA No. TFL/TALCHER/C&P/PIPING WORKS/LOA-001/24-25 dated 10.04.2024**

**LIST OF AHR ITEMS**

90.30	Supply of CP Power distribution board for Supply to the TRUs The Power distribution board (PDB) shall be composed of one no.415 V 4 P 125A, incoming MCCB and 3 no. 415 V, 4 P 63A outgoing MCB for input power supply to TR Unit as well as 6No.6A outgoing DP MCB for central monitoring system power supply ( if required)	2.00	Nos.	128383.74	256767.48
90.40	Installation, testing & commissioning of above Power Distribution Board	2.00	Nos.	28757.93	57515.85
91.00	Test Station				
91.10	Supply of Test Station with 2 nos 1c x 6 sq mm cable . Copper conductor, PVC insulated and PVC sheathed with 4" access pipe for RE installation. The test station shall be installed during TCP stage as well	32.00	Nos	28757.93	920253.63
91.20	Installation, testing & commissioning of above Test Station	32.00	Nos	7703.34	246506.99
92.00	Polarisation coupon Supply Installation, Testing of Polarization Coupons of approved make, complete in all respects as given in the specification and directions of Site Engineer/ Engineer-in-Charge with all its accessories to ensure trouble free operation.				
92.10	Polarization Coupons with two cables of 1c x 6 sq mm and 1c x 10 sq mm XLPE/PVC unarmoured of suitable length such as to reach Test Station connected to the coupon. The coupon shall be connected to the pipeline via a suitable rated magnetic reed switch	32.00	Nos	12324.71	394390.77
93.00	Thermit Weld				
93.20	Installation of above Thermit Weld	1.00	Lot	19514.39	19514.39
95.00	TCP-Magnesium Ribbon anodes				
95.10	Supply of TCP-Magnesium Ribbon anodes (19.05 mm x 9.52 mm, 0.35kg/ m)with 1c x 6 sq mm XLPE/PVC cable for connection upto Test station provided every 70 mtr	2500.00	Mtrs	1438.10	3595239.25
96.00	Spares				
96.12	Portable Cu/ CuSO4 ref cells (Mc miller) or equivalent	1.00	Nos	15405.89	15405.89

