



IRRIGATION AUTHORITY

**OPEN NATIONAL BIDDING  
FOR WORKS**

**Supply, Installation, Testing and Commissioning of  
Centrifugal Surface Pumpset**

**Procurement Reference No: OMD/PUMPSET/08/23**

**BIDDING DOCUMENTS**

**Public Body: Irrigation Authority  
5<sup>th</sup> Floor, Fon Sin Building  
12, Edith Cavell Street  
Port Louis**

**April 2023**

# **Section I - Instruction to Bidders**

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## 1. Introduction

The Irrigation Authority also referred to as the Employer, invites eligible local contractors to submit their bid for the works described in detail hereunder. Any resulting contract shall be subject to the terms and conditions referred to in this document.

The Works consist of the supply, installation, testing and commissioning of centrifugal surface pumpset as follows:

### LOT A

#### a) For financial year 2022 -2023

- **Bill No 1** : One horizontal type pump of duty point 399 m<sup>3</sup>/hr at a total manometric head of 94 m, 160 Kw, at Riviere du Rempart Pumping Station for Riviere du Rempart Small Scale Irrigation Project.
- **Bill No. 2** : One vertical type pump of duty point 360 m<sup>3</sup>/hr at a total manometric head of 75 m, 150 Kw, at Providence Pumping Station for the Belle-Mare Small Scale Irrigation Project.

### LOT B

#### b) For financial year 2023 -2024

- **Bill No. 3**: One horizontal type pump of duty point 201 m<sup>3</sup>/hr at a total manometric head of 91 m, 76 Kw, at Riviere du Rempart Pumping Station for Riviere du Rempart Small Scale Irrigation Project.
- **Bill No. 4**: One vertical type pump of duty point 360 m<sup>3</sup>/hr at a total manometric head of 75 m, 150 Kw, at Providence Pumping Station for the Belle-Mare Small Scale Irrigation Project.

**Participation is limited to citizens of Mauritius or entities incorporated in Mauritius.**

**Joint Ventures should be among entities incorporated in Mauritius**

1.1. Clarifications, if any, should be addressed to:

**The General Manager**

**Irrigation Authority**

**5th Floor, Fon Sing Building**

**12, Edith Cavell Street**

**Port Louis**

- 1.2. The Employer will respond in writing to any request for clarification, provided that such request is received 7 days prior to the deadline for submission of bids.

The Employer shall respond to such request at latest 7 days prior to the deadline set for submission of bids.

- 1.3. Bidders are advised to carefully read the complete Bidding document, including the Particular Conditions of Contract in Section IV, before preparing their bids. The standard forms in this document may be retyped for completion but the Bidder is responsible for their accurate reproduction.

## **2. Validity of Bids**

The bid validity period shall be Ninety (90) days from the date of bid submission.

## **3. Works Completion Period**

The Intended Completion period for the whole of the works shall be **One hundred and Twenty (120)** calendar days from the Start Date.

## **4. Site Visit**

Bidders or their designated representatives are invited to attend a pre-bid meeting/ site visit scheduled for **Friday 14 April 2023 at 10.00 hrs** at our pumping station at Riviere du Rempart and thereafter we shall move to Providence pumping station at Poste de Flacq respectively. The purpose of the pre-bid meeting / site visit will be to clarify issues and to answer questions on any matter that may be raised at that stage.

The bidders shall be deemed to have a thorough understanding of the nature and extent of the works and thus, any request for extension of time during the bidding period will be not entertained.

**5. Sealing and Marking of Bids**

Bids should be sealed in a single envelope, clearly marked with the Procurement Reference Number, addressed to the Public Body with the Bidder's name at the back of the envelope.

**6. Submission of Bids**

Bids should be deposited in the Tender Box located at the reception at:

**Irrigation Authority**

**5th Floor, Fon Sing Building**

**12, Edith Cavell Street**

**Port Louis**

not later than 15.00 hours local time on **Friday 28 April 2023**. Bids by post or hand delivered should reach the above-mentioned address by the same date and time at latest. Late bids will be rejected. Bids received by e-mail will not be considered.

**7. Bid Opening**

Bids will be opened by the Irrigation Authority at **15:30 hours on the same day and date** of submission of Bids referred to in section 6 above. Bidders or their representatives may attend the Bid Opening if they choose to do so.

**8. Evaluation of Bids**

The Public Body shall have the right to request for clarification during evaluation. Offers that are substantially responsive shall be compared on the basis of evaluated cost to determine the lowest evaluated bid.

**9. Eligibility Criteria**

To be eligible to participate in this bidding exercise, Bidder should:

- a. have the legal capacity to enter into a contract to execute the works;

- b. be duly registered with the CIDB under the grade that would allow him to perform the value of works for which he is submitting his bid. (Note 1)
- c. not be insolvent, in receivership, bankrupt, subject to legal proceedings for any of these circumstances or in the process of being wound up;
- d. not have had your business activities suspended;
- e. not be under a declaration of ineligibility by the Government of Mauritius in accordance with applicable laws at the date of the deadline for bid submission or appearing on the ineligibility lists of African Development Bank, Asian Development Bank, European Bank for Reconstruction and Development, Inter-American Development Bank Group and World Bank Group;
- f. not have a conflict of interest in relation to this procurement requirement; and
- g. have a Business Registration Card.

Note 1

Sub-contractors undertaking works are also subject to registration with CIDB as applicable to Contractors.

**10. Qualification and Experience Criteria**

Bidders should have the following minimum qualifications and experience:

- (a) Valid registration certificate with the CIDB under the grade that will enable the contractor to perform the works quoted for under the following class: Civil Engineering Construction works or Building Construction works or Mechanical, Electrical and Plumbing Works (MEP Works).
- (b) Experience in one (1) work of similar nature related to supply, installation, testing and commissioning of Pumpset of similar size and duty point over the last 10 years, of value not less than MUR 2 Million.
- (c) Qualification and experience of Key personnel required for the Contract shall be:

- (i). One Contract Manager (part time), holding at least a Degree in Mechanical or Electromechanical Engineering or Building Services Engineering works from a recognised institution. He shall have at least 5 years experience in Mechanical or Electromechanical engineering works or Building Services Engineering works and shall be registered with the Council of Registered Professional Engineer of Mauritius
  - (ii). Site agent (full-time) holding at least a Degree in Mechanical or Electromechanical engineering works or Building Services Engineering works from a recognised institution and shall be registered with the Council of Registered Professional Engineer of Mauritius. He shall have at least 3 years post registration experience in Mechanical or Electromechanical engineering works or Building Services Engineering works.
  - (iii). One foreman having at least 3 years of experience in pipe laying works, plumbing works and installation of water works.
  - (iv). At least one qualified plumber/pipe fitter having a minimum 3 years of experience related to installation of water works.
- (d) Minimum amount of liquid assets and/or credit facilities, **“net of other contractual commitments”** of three million Mauritian rupees (MUR 3,000,000).

## 11. Contents of bid

The Bid shall comprise the following:

- (a) Duly filled Bid Submission Form;
- (b) Duly filled Priced Bill of Quantities/Activity Schedule;
- (c) Duly filled Qualification Information Form and attachments required
- (d) Report on the financial standing of the Bidder for the last three years, such as certified copies of Financial Statements or Audited Accounts as filed at the Registrar of Companies before the deadline set for submission of bids
- (e) Valid Registration certificate with the CIDB, as applicable
- (f) Signed C.V of Contract Manager;



(g) Documentary evidence of liquid assets and/or credit facilities (Note 1);

(h) Any other documents deemed necessary as per the requirements of this bidding document

Note 1

Bidders to demonstrate access to, or availability of, financial resources such as liquid assets, lines of credit, and other financial means, other than any contractual advance payments to meet the overall cash flow requirements for the contract and its current commitments. Documentary evidence may comprise but not limited to Bank certificate, Certificate from Auditors, Certificate from a Professional Accountant registered with MIPA, Certificate from Insurance companies.

**12. Joint Venture**

Bids submitted by a joint venture of two or more firms as partners shall comply with the following requirements:

- a. The Bid shall include all the information required as per the Qualification Information form for each joint venture partner;
- b. The Bid shall be signed so as to be legally binding on all partners;
- c. The Bid shall include a copy of the agreement entered into by the joint venture partners defining the division of assignments to each partner and establishing that all partners shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms; **alternatively**, a Letter of Intent to execute a joint venture agreement in the event of a successful bid shall be signed by all partners and submitted with the bid, together with a copy of the proposed agreement;
- d. one of the partners shall be nominated as being in charge, authorized to incur liabilities, and receive instructions for and on behalf of any and all partners of the joint venture; and

- e. The execution of the entire Contract, including payment, shall be done exclusively with the partner in charge.

**13. Prices and Currency of Payment**

Bidders should quote for the whole works. Prices for the execution of works shall be quoted and fixed in Mauritian Rupees (MUR). Items for which no rate or price is entered by Bidders, shall not be paid for by the Public Body when executed and shall be deemed covered by the other rates and prices in the Bill of Quantities.

Bids shall cover all costs of labour, materials, equipment, overheads, profits and all associated costs for performing the works, and shall include all duties. The whole cost of performing the works shall be included in the items stated, and the cost of any incidental works shall be deemed to be included in the prices quoted. Bidders are required to submit their bid prices **including contingency sum and exclusive of 15% VAT.**

**14. Bid Securing Declaration**

Bidders are required to subscribe to a Bid Securing Declaration in the Bid Submission Form.

**15. Margin of Preference**

Margin of Preference shall not apply.

**16. Award of Contract**

The Bidder having submitted the lowest evaluated substantially responsive bid and qualified to perform the works shall be selected for award of contract. Award of contract shall be by issue of a Letter of Acceptance in accordance with terms and conditions contained in Section IV: General Conditions of Contract and Particular Conditions of Contract.

Works under **LOT A** shall have to be executed and completed under the budget earmarked for financial year 2022-2023 and works under **LOT B** shall be executed and completed under financial year 2023-2024.

**17. Performance Security and signing of contract**

Within twenty-eight (28) days of the receipt of the Letter of Acceptance from the Employer, the successful Bidder shall furnish a Performance Security, in the amount equal to 10% of the Contract price (exclusive of VAT), in accordance with the conditions of contract, using for that purpose the Performance Security Form included in Section II Contract Forms.

The contract agreement shall be signed within 28 days after the successful bidder receives the letter of acceptance unless the parties agree otherwise.

Failure of the successful Bidder to submit the above-mentioned Performance Security or sign the contract within the required time may constitute sufficient grounds for the annulment of the award.

**18. Notification of Award and Debriefing**

Prior to the expiration of the period of bid validity, the Employer shall, for contract amount above Rs 15 million, notify the selected bidder of the proposed award and accordingly notify unsuccessful bidders. Subject to Challenge and Appeal, the Employer shall notify the selected Bidder, in writing, by a Letter of Acceptance for award of contract. Until a formal contract is prepared and executed, the notification of award shall constitute a binding Contract.

The Public Body shall after award of contract, exceeding Rs 1 million and up to Rs 15 million, promptly inform all unsuccessful bidders in writing of the name and address of the successful bidder and the contract amount.

Furthermore, the Public Body shall attend to all requests for debriefing for contract exceeding Rs 1 million, made in writing within 30 days the unsuccessful bidders are informed of the award.

**19. Advance Payment**

The Public Body shall provide an Advance Payment on the Contract Price as stipulated in the General Conditions of Contract. The Advance Payment shall be guaranteed by an Advance Payment Security as per the format contained in Section II.

The Advance Payment shall be limited to fifteen percent (15%) of the Contract Price, excluding 15% VAT less any provisional and contingencies sums.

**20. Integrity Clause**

The Public Body commits itself to take all measures necessary to prevent corruption and ensures that none of its staff, personally or through his/her close relatives or through a third party, will in connection with the bid for, or the execution of a contract, demand, take a promise for or accept, for him/herself or third person, any material or immaterial benefit which he/she is not legally entitled to.

**21. Rights of Public Body**

The Irrigation Authority reserves the right to split, accept or reject any bid or to cancel the bidding process and reject all bids at any time prior to contract award without incurring any liability to the Public body.

**22. Challenge and Appeal**

Unsatisfied bidders shall follow procedures prescribed in Regulations 48, 49 and 50 of the Public Procurement Regulations 2008 to challenge procurement proceedings and award of procurement contracts or to file application for review at the Independent Review Panel.

The address, Tel. & Fax No. & Email address to file Challenges in respect of this procurement is:

**The General Manager,  
Irrigation Authority  
5th, Floor, Fon Sing Building**

**12, Edith Cavell Street  
Port Louis**

**Tel : +230 2106596**

**Fax: +230 212 7652**

**Email :irrig@irrig.org**

The address to file Application for Review is:

**The Chairperson  
Independent Review Panel,  
5<sup>th</sup> Floor,  
Belmont House  
Intendence Street  
Port-Louis**

**Tel : +230 2602228**

**Email : irp@govmu**

# **Section II**

# **Bidding Forms**

Note: Bidders are required to fill all the forms in this section and submit as part of their bid. Non-submission of any form may lead to rejection of the bid

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**BID SUBMISSION FORM**

Date: .....

Procurement Reference No: OMD/PUMPSET/08/23

To: The General Manager  
Irrigation Authority  
5th, Floor, Fon Sing Building  
12, Edith Cavell Street  
Port Louis

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda issued;
- (b) We offer to execute in conformity with the Bidding Documents the Works under **CONTRACT: OMD/PUMPSET/08/23** consisting of, inter alia:
  - (i) Disconnect all electrical connections from the main electrical Control Panel to all the pumpset which are to be replaced.
  - (ii) Disconnect the defective pumpsets from the existing inlet and outlet pipeworks.
  - (iii) Dismantle the pumpset and deliver same to our store at Plaine des Papayes including all the unserviceable items from the Riviere du Rempart and Providence Pumping Stations.
  - (iv) Perform electrical check to the existing control panel, capacitor bank, lightning protection, power surge protection, earthing system before connecting to be pumpset.
  - (v) Supply, install, test and commission electrical pumpset as requested under **LOT A** and **LOT B** respectively.
  - (vi) Verification and Installation of dry running protections.
  - (vii) Supply, install and test new manometers at outlet of each pump.
  - (viii) Supply, connect and test all appropriate size electrical cables to connect electrical power from control panel to the pump motor c/w all accessories cable trays, trunking, conduit, fixation and support materials. (Provisional)
  - (ix) Overall commissioning of the pumpsets.



- (x) Submit 3 set of copies of O&M manuals, electrical line diagram and As-Built drawings.
- (xi) Training on operation and maintenance of the pumpsets to the pump operators.
- (xii) The Bidder shall provide for all associated civil works required for the successful execution of the work. The Bidder shall take cognizance of the site of work and cater for any additional equipment required for the execution of the work.
- (xiii) Provide for any additional pipe, valves, fittings, and accessories in the assembly and connection of the new pumpset.

The intended completion period shall be **One Hundred and Twenty (120) calendar days** from the Start Date.

The whole of the works shall be carried out in strict accordance with the Drawings, Scope of Works, Specifications and Performance Requirements; and Conditions of Contract.

- (c) The total price of our Bid and contingency sum excluding 15% VAT is:

Amount in Figures : MUR \_\_\_\_\_

Amount in Words : MUR \_\_\_\_\_

- (d) Our bid shall be valid for a period of ninety (90) days from the date fixed for the bid submission deadline in accordance with the Bidding and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (e) We hereby confirm that we have read and understood the content of the Bid Securing Declaration attached hereto and subscribe fully to the terms and conditions contained therein, if required. We understand that non-compliance to the conditions mentioned may lead to disqualification.
- (f) If our bid is accepted, we commit to obtain a Performance Security in accordance with the Bidding Document;
- (g) We, including any subcontractors or suppliers for any part of the contract, do not have any conflict of interest in accordance with ITB 9;
- (h) We are not participating, as a Bidder in more than one bid in this bidding process;
- (i) Our firm, its affiliates or subsidiaries, including any Subcontractors or Suppliers for any part of the contract, has not been declared ineligible under the laws of Mauritius;
- (j) We have taken steps to ensure that no person acting for us or on our behalf will engage in any type of fraud and corruption as per the principles described hereunder, during the bidding process and contract execution:

- i. We shall not, directly or through any other person or firm, offer, promise or give to any of the Public Body’s employees involved in the bidding process or the execution of the contract or to any third person any material or immaterial benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
- ii. We shall not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelisation in the bidding process.
- iii. We shall not use falsified documents, erroneous data or deliberately not disclose requested facts to obtain a benefit in a procurement proceeding.

We understand that transgression of the above is a serious offence and appropriate actions will be taken against such bidders.

- (k) We understand that this bid, together with your written acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed;
- (l) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive; and
- (m) If awarded the contract, the person named below shall act as Contractor’s Representative:

Name: \_\_\_\_\_

In the capacity of: \_\_\_\_\_

Signed: \_\_\_\_\_

Duly authorized to sign the Bid for and on behalf of: \_\_\_\_\_

Date: \_\_\_\_\_

Seal of Company \_\_\_\_\_

## **BID SECURING DECLARATION**

By subscribing to the undertaking in the Bid Submission Form:

I/We accept that I/we may be disqualified from bidding for any contract with any Public Body for the period of time that may be determined by the Procurement Policy Office under section 35 of the Public Procurement Act, if I am/we are in breach of any obligation under the Bid conditions, because I/we:

- (a) have modified or withdrawn my/our bid after the deadline for submission of bids during the period of bid validity specified by the Bidder in the Bid Submission Form; or
- (b) have refused to accept a correction of an error appearing on the face of the bid; or
- (c) having been notified of the acceptance of our bid during the period of bid validity,
  - (i) Have failed or refused to execute the Contract, if required, or
  - (ii) Have failed or refused to furnish the Performance Security, in accordance with the Instructions to Quote.

I/We understand this Bid Securing Declaration shall cease to be valid:

- (a) in case I am /we/are the successful bidder, upon our receipt of copies of the contract signed by you and the Performance Security issued to you by me/us; or
- (b) if I am/we are not the successful Bidder, upon the earlier of (i) the receipt of your notification of the name of the successful Bidder; or (ii) thirty days after the expiration of the validity of my/our bid.

In case of a Joint Venture, all the partners of the Joint Venture shall be jointly and severally liable.

## QUALIFICATION INFORMATION

*[The information to be filled in by **bid**ders in the following pages shall be used for purposes of post-qualification or for verification of prequalification as provided for in ITB. This information shall not be incorporated in the Contract. Attach additional pages as necessary. Pertinent sections of attached documents should be translated into English. If used for prequalification verification, the Bidder should fill in updated information only.]*

**1. Individual Bidders or Individual Members of Joint Ventures**

- 1.1 Constitution or legal status of Bidder: *[attach copy]*  
 Place of registration: *[insert]*  
 Principal place of business: *[insert]*

1.2 Bidder shall provide 2 works of a nature and amount similar to the Works performed as Contractor over the last 5 years.

Project/Contract name and country	Name of client and contact person	Type of work performed and year of completion	Value of contract (national currency )
(a)			
(b)			

1.3 Proposed subcontracts and firms involved. Refer to General Conditions of Contract Clause 7.

Sections of the Works	Value of subcontract	Subcontractor (name and address)	Experience in similar work
(a)			
(b)			

*[Bidders have to ascertain that sub-contractors executing works are duly registered with the CIDB in accordance with CIDB Act 2008.]*

1.4 Name, address, and telephone, telex, and facsimile numbers of banks that may provide references if contacted by the Public Body.

**2. Additional**

**2.1** Bidders should provide any additional information Requirements requested in the Bidding Document.

## QUOTATION CHECKLIST

**Procurement Reference No: OMD/PUMPSET/08/23**

S.N	Description	Attached (please tick if submitted)
1	Bid Submission form	
2	Priced Bill of quantities	
3	Specifications and Compliance sheet	
4	Bid Securing declaration	
5	Qualification Information	
6	Programme of Works	
7	Origin of goods	

***Disclaimer:*** The list defined above is meant to assist the Bidder in submitting the relevant documents and shall not be a ground for the bidder to justify its non-submission of major documents for its quotation to be responsive. The onus remains on the Bidder to ascertain that it has submitted all the documents that have been requested and are needed for its submission to be complete and responsive.

# **Section III**

## **Statement of Requirements**

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**A. SCOPE OF WORKS, SPECIFICATIONS AND PERFORMANCE REQUIREMENTS**

**1. General**

**1.1. Brief description**

***Riviere du Rempart Small Scale Irrigation Project***

The Riviere du Rempart Small Scale Irrigation Project (SSIP) was implemented to cater for irrigation facilities for small planters. The project is located in the North of Mauritius along the right-hand side of the road B15 of Haute Rive going towards Riviere du Rempart.

The Riviere du Rempart SSIP constitutes a total area of about 400 Arpents of private land. The actual method of irrigation used is the low pressure semi-solid set sprinkler system whereby the planters have to shift only the sprinkler stand. The distribution laterals are laid in the fields of planters at regular intervals and are connected to the hydrant unit. The project is in operation since 1996 and is irrigated with river water which is pumped by three Centrifugal pumps, housed inside the Pumping Station located on one bank of the river at Haute Rive, Riviere du Rempart.

The three pumps are of the horizontal type and the make and duty points are as stated below:

- (i) Pump No.1 - Make: WEIR, Duty Point: 399 m<sup>3</sup>/hr @ 94m head, 160 kW (installed in 1996, pumpset has reached its lifetime and shall have to be replaced)
- (ii) Pump No.2 - Make: WEIR, Duty Point: 201 m<sup>3</sup>/hr @ 91m head, 76 kW - (installed in 1996, pumpset has reached its lifetime and shall have to be replaced)
- (iii) Pump No.3 - Make: Armstrong, Duty Point : 419 m<sup>3</sup>/hr @ 116m head, 200 kW (installed in 2016)

***Belle-Mare Small Scale Irrigation Project***

The Belle-Mare Small Scale Irrigation Project constitutes a total area of 217 ha where some 503 planters are benefitting from low pressure sprinkler method of irrigation. The infield laterals are laid along the ground surface and connected to the hydrant units.

Irrigation water is pumped from the Poste de Flacq River by means of four (4) pumpsets installed inside a pump house named the Providence Pumping Station. Each pumpset consists of two (2) stage centrifugal type pump, of make Kirloskar manufactured in India having vertical axles and model RKB 200/37V which is coupled with a 3-phase electric motor of make Crompton Greaves of rating 150 Kw.

The duty of each pumpset is 360 m<sup>3</sup>/hr x 75 m x 150 Kw.

The total approximate weight of one pumpset is 4 tons.

Normally, Irrigation is done with three (3) pumpset running at the same time while one (1) pumpset is being kept on stand-by.

The starting mode is the auto-transformer and each pumpset is provided with a separate auto-transformer of capacity 160 Kw.

The four (4) pumpset were installed in the year 2004/2005 under the IFAD Rehabilitation programme and are therefore in operation for about some Seventeen (17) years. As such, the pumpset are now nearing their lifetimes.

One of the pumpset namely pumpset No. 1 is out of order since 2019 and has been dismantled.

There is now an urgent need to replace the defective pumpset by a new one of same duty point.

The purpose of this procurement is to replace the following pumpsets:

**Pumpset to be supplied, installed, tested and commissioning under LOT A for Financial Year 2022-2023**

1. Pump No. 1 at Riviere du Rempart Pumping Station for Riviere du Rempart SSIP
2. Pump No. 1 at Providence Pumping Station for Belle Mare SSIP

**Pumpset to be supplied, installed, tested and commissioning under LOT B for Financial Year 2023-2024**

1. Pump No. 2 at Riviere du Rempart Pumping Station for Riviere du Rempart SSIP
2. Pump No. 3 at Providence Pumping Station for Belle Mare SSIP

**1.2. Scope of Works**

The works under **CONTRACT: OMD/PUMPSET/08/23** shall consist of, inter alia:

- (i) Disconnect all electrical connections from the main electrical Control Panel to all the pumpset which are to be replaced.
- (ii) Disconnect the defective pumpsets from the existing inlet and outlet pipeworks.
- (iii) Dismantle the pumpset and deliver same to our store at Plaine des Papayes including all the unserviceable items from the Riviere du Rempart and Providence Pumping Stations.
- (iv) Perform electrical check to the existing control panel, capacitor bank, lightning protection, power surge protection, earthing system before connecting to be pumpset.
- (v) Supply, install, test and commission electrical pumpset as requested under LOT A and LOT B respectively.
- (vi) Verification and Installation of dry running protections.
- (vii) Supply, install and test new manometers at outlet of each pump.
- (viii) Supply, connect and test all appropriate size electrical cables to connect electrical power from control panel to the pump motor c/w all accessories cable trays, trunking, conduit, fixation and support materials. (Provisional)
- (ix) Overall commissioning of the pumpsets.
- (x) Submit 3 set of copies of O&M manuals, electrical line diagram and As-Built drawings.
- (xi) Training on operation and maintenance of the pumpsets to the pump operators.
- (xii) The Bidder shall provide for all associated civil works required for the successful execution of the work. The Bidder shall take cognizance of the site of work and cater for any additional equipment required for the execution of the work.
- (xiii) Provide for any additional pipe, valves, fittings, and accessories in the assembly and connection of the new pumpset.

The intended completion period shall be **One Hundred and Twenty (120) calendar days** from the Start Date.

The whole of the works shall be carried out in strict accordance with the Drawings, Scope of Works, Statement of requirement; and Conditions of Contract.

### 1.3. Specifications

#### 1.3.1 Irrigation Centrifugal Surface Pumpset

The pumpset to be supplied, installed and tested shall have a best operating duty point as follows:

##### **LOT A**

1. Pump No.1 – Duty Point: 399 m<sup>3</sup>/hr @ 94m head, 160 kW for Riviere du Rempart Pumping Station. (Horizontal type)
2. Pump No. 1 – Duty point: 360 m<sup>3</sup>/hr @ 75m head, 150 kW for Providence Pumping Station. (Vertical Type)

##### **LOT B**

1. Pump No. 2 – Duty Point: 201 m<sup>3</sup>/hr @ 91m head, 76 Kw for Riviere du Rempart Pumping Station. (Horizontal type)
2. Pump No. 3 - Duty point: 360 m<sup>3</sup>/hr @ 75m head, 150 kW for Providence Pumping Station. (Vertical Type)

The pumpset shall draw in water from the sump constructed on the bank of the rivers through a suction pipe arrangement connected to a footvalve and strainer assembly.

The pumpset shall be installed inside the respective pumping stations.

The diameter of the existing suction pipes and the delivery pipes are as follows:

<b>S.n</b>	<b>Pump</b>	<b>Pumping Station</b>	<b>Suction Pipe Dia. (mm)</b>	<b>Delivery Pipe Dia. (mm)</b>
1	Pump No. 1	Riviere du Rempart	200	150
2	Pump No. 1	Providence	200	200
3	Pump No. 2	Riviere du Rempart	100	100
4	Pump No. 3	Providence	200	200

**General Description of Surface Pumpset**

The Bidder shall propose pumpset which are suitable for operation with the existing suction and outlet pipes arrangement.

The pumpset shall consist separately of 1 No. pump and 1 No. electric motor mounted on a common baseplate fitted with anti-vibration pad and their shafts connected together by a flexible coupling, so as to ensure that no vibration is transmitted from either unit to the other. This flexible coupling as well as the shafts of the pump and motor shall be covered with a proper shaft guard to ensure protection to pump operators and to other maintenance personnel.

The pumpset shall be fitted with renewable **neck ring** and with soft packing.

The pumpset shall be centrifugal and shall be of the single stage split casing type with flanged inlet and outlet so as to match the existing pipes and fitting arrangement on sites. The pumpset to be supplied for the Riviere du Rempart Pumping Station shall be of the **Horizontal** type and that for the Providence Pumping Station shall be of the **Vertical** type.

The pump shall have high reliability and be quiet while in operation. Inlet/outlet ports of pumps shall be compatible with the existing diameter of suction and delivery pipes respectively. The whole unit shall be self-priming and priming maintained after pump shut down. Appropriate bellow couplings and anti-vibration pads shall be provided in the installation.

The impeller shall be hydraulically thrust compensated and dynamically balanced. The impeller material for each pumpset shall be made **from stainless steel AISI 316 or of higher grade**.

The pump shaft shall be of **high tensile steel or a suitable stainless-steel grade**. The diameter shall be such as to keep distortion within acceptable limits.

The base plate assembly of the motor-pump unit shall be rigid and, if of welded construction, shall be stress-relieved. Substantial lugs fitted with jacking screws shall be provided for adjusting the alignment of the motor, shaft and pump assembly.

The pump casing shall be constructed of close-grained cast iron, with ribbing as necessary to ensure adequate strength and rigidity. **Tests performed on each pump at manufacturing and assembly stage shall include pressure testing of the casing up to 1.5 times the closed valve pressure developed by the pump for a minimum period of five (5) minutes.**

The pump shall be designed to facilitate maintenance and hand holes shall be provided where appropriate to allow **inspection of all internal parts**. It shall be possible to inspect bearings and seals without dismantling of the pump.

The bearing housing shall be manufactured from close-grained iron and lubrication of bearings shall be done with either oil or grease. **Bearings shall be of anti-friction type designed for at least 62,000 hours of operation.**

Where bearing lubrication is done by oil, appropriate means for filling and draining the oil shall be provided with a suitable means of level measurement.

Where bearing lubrication is done by grease, the filling shall be done through steel grease nipples and same shall be covered with a plastic/rubber cap.

A combined vacuum/pressure gauge shall be fitted to the suction port of the pump and a pressure gauge on the delivery port. The gauges shall be of glycerine type and shall be calibrated in bars.



In order to avoid priming and cavitation problems, the NPSH (required) of the pump should be such that it is less than or equal to the NPSH (available) on site. The NPSH of the pumpset shall be chosen accordingly.

### **Performance and Characteristics Curves**

The characteristic curves of the pump together with the NPSH curve, power curve and efficiency curve shall be provided by the Bidder at the time of Bidding, with a clear indication of duty range and the various conditions of operation. The pump efficiency at duty point shall be as close as possible to the best efficiency point (BEP) for the pump as indicated by the manufacturer. The following curves as a function of discharge shall be submitted and shall extend from zero flow to **130 % of duty flow**:

- a) Delivery Head,
- b) Efficiency, and
- c) Power input

The pump shall have head-delivery curves which rise continuously and monotonously to shut off. The pump shall be capable of operating under closed-valve conditions in the delivery mains for a minimum duration of five (5) minutes. **A flat pump curve would be preferred.**

Dry running of pumpset shall be controlled by means of appropriate water level electrodes or level float switches of the non-mercury type, installed in the river.

### **Performance Tests of Pump**

Guaranteed efficiency is required at the duty point. The combined Pump and Motor efficiencies shall be achieved through performance tests in conformity with **BS EN ISO 9906:2012**. **At Evaluation Stage**, consideration will be given to the **energy consumption by the electrical motor of the pump at required head** in the analysis of the offers.

### ***1.3.2 Electric Motors***

The electrical motor shall comply in all respect with the relevant parts of **BS EN 60034-1:2010, BS EN 60034-30-1:2014** or latest equivalent ISO Standard. The electrical motor shall be of **IE3 (High efficiency) class or higher**. The test methods and results of the efficiency values as defined in BS EN 60034-30-1: 2014 shall be **submitted at the bidding stage**.

The motor shall be fed by a **three-phase power supply of 400 V / 50 Hz**.

The motor shall be totally enclosed, air cooled, squirrel-cage type designed for **Auto-transformer/Star-Delta starting/VSD/soft-starter**. It shall be designed for 24 hours operation with frequent starts (min. 8 starts per hour) required when the pump is in normal operation.

The electrical insulation shall be to **BS EN 60085:2008, Class F** or latest equivalent standard. **The Bidder shall also submit full details of the methods being proposed to ensure adequate cooling of the motors at all times.**

The motor shall be fitted with locating type bearings and/or heavy-duty type thrust bearings at the non-drive end and roller type bearings at the drive end according to the type of motor offered, but all bearings shall be of adequate proportions and designs suitable for the particular application, and shall have ample capacity to allow the pump to operate for short periods with discharge valve closed. For lubrication by grease, the filling shall be done through steel grease nipples and same shall be covered with a plastic/rubber cap.

Motors of power rating greater or equal to 10 kW shall be fitted with **Temperature Sensitive Thermistor** embedded in the motor to control a winding over-temperature

relay mounted in the control panel. The motor shall have **at least one (1) thermistor for alarm and shutdown**. A winding over-temperature relay shall be provided with each pump set.

The pump input (shaft) power shall not overload the motor at any point on the pump performance characteristic curve and the pump operating range, within the limits of stable pump operation, as recommended by the manufacturer.

The motor shall be capable of delivering a **minimum of 10% and up to a maximum of 36% in excess of the maximum power absorbed** when the pump is operating against the specified duty head.

The motor shall be built of **high-grade components and materials** in accordance with the best practice for round the clock water pumping.

The power factor of the motor shall not be less than 0.8 at the duty points.

The motor shall be supplied with the following accessories:-

- (i) The necessary fixture accessories
- (ii) Lifting rings for motors weighing over 50 kg
- (iii) A name plate indicating the type of connections
- (iv) Over temperature protection by thermostatic trip out contacts

### ***1.3.3 Spare parts***

The Contractor shall supply all the necessary manufacturer's recommended spare parts for two years normal duty and shall quote for such items as listed in the Bill of Quantities:

The spare parts to be supplied shall include the following as listed below:-

<b>Item No.</b>	<b>Description</b>	<b>Quantity (Unit)</b>
1	Impeller	1 No. for each pump
2	Soft packing	1 roll for each pump
3	Gasket Kit and O-ring	2 Sets per pump
4	Neck Ring (if applicable)	1 No. for each pump
5	Bearing (DE/NDE) for Pump	2 Sets per pump
6	Bearing (DE/NDE) for Motor	2 Sets per pump

Any additional spare parts as recommended by the pump set manufacturer for two years of operation shall also be provided by the bidder. Any special tool required for dismantling of pump units proposed shall be quoted as an option in the offer.

**Technical details and documents to be submitted at Bidding Stage**

**Pump**

The Bidder shall provide the following technical details **at the bidding stage**:

- Pump and Motor Performance and Characteristic Curves of each pump set
- Motor make, Nominal Speed (rpm), rating, manufacturer and country of origin
- Details of motor electrical rating, starting and full load current under rated voltage and efficiency at duty point.
- Pump make, manufacturer and country of origin
- Dimensions and weight of each unit
- Foundation details
- Manufacturer's name, addresses, contact persons, email address, fax no.

### ***1.3.4 Testing and Commissioning***

The Contractor shall provide the methodology for testing of the pumpset.

Upon approval of the methodology, testing of the pumpset shall be performed and same approved by the Project Manager. All test results shall be included in the Operation and Maintenance Manual.

Commissioning of the whole works shall be done prior to issue of Taking Over Certificate.

### ***1.3.5 Maintenance During Guarantee Period***

The bidder shall carry out all necessary maintenance on the installations during the guarantee period. This shall include regular visits to ascertain the proper operation of the pumping station, attendance to breakdowns and replacement of parts as necessary.

## **1.4 Operations and Maintenance Manuals**

Two (2) sets hardcopy and One (1) set soft copy of Installation, Operation, Maintenance and Workshop manuals complete with spare parts catalogues shall be supplied for the pumps.

The workshop manual shall include dismantling and assembly procedure of the pump.

The spare parts catalogue shall comprise of the reference of all the spares with exploded view of the equipment and parts.

A test report for each pumpset from the manufacturer shall be submitted to the Irrigation Authority upon delivery of the pumps on sites. Insulation resistance and continuity tests shall be performed on the motor windings on delivery and the results shall be compared with manufacturer's test report

## **1.5 Warranty**

The Bidder shall warrant that the equipment and accessories supplied under the Contract are brand new, unused, of the most recent or current models and incorporate all recent improvements in design and materials unless provided otherwise in the Contract. The Bidder shall further warrant that the Goods supplied under this Contract shall have no defect arising from design, materials or workmanship (except insofar as the design or material is required by the Public Body's Specifications) or from any act or omission of the Bidder, that may develop under normal use of the supplied Goods in the conditions obtaining in the country of final destination.

This warranty shall remain valid for twelve (12) months after the equipment and accessories have been commissioned by the Successful Bidder and accepted by the Public Body.

The Public Body shall promptly notify the Successful Bidder in writing of any claims arising under this warranty period.

Upon receipt of such notice, the successful Bidder shall, within a maximum delay of two weeks, repair or replace the defective equipment and accessories or parts thereof, without costs to the Public Body other than, where applicable, the cost of inland delivery of the repaired or replaced equipment and accessories or parts from the port of entry to the final destination.

If the successful Bidder, having been notified, fails to remedy the defect(s) within a maximum delay of two weeks, the Public Body may proceed to take such remedial action as may be necessary, at the Successful Bidder's risk and expense and without prejudice to any other rights which the Public Body may have against the successful Bidder under the Contract.

## **1.6 Drawings of the works**

All the Drawings of the Works are attached herewith in the Bidding Documents. It shall be the responsibility of the Bidder to check any information therein prior to submitting

his bid and to start of works. Any modifications or assumptions made on these drawings shall be notified by the Bidder in the separate memorandum.

The Bidder shall submit with his bid any additional drawings which he has used for pricing his bid.

As-built drawings shall be supplied as specified hereinafter.

#### **1.7 Details of existing pipelines, CEB lines and other infrastructures**

The Contractor shall verify the presence of pipelines, electric cables, underground structures and other infrastructures prior to execution of works within immediate surroundings to the site, and execute works without disturbing and damaging any of these features. Any disturbance caused to such infrastructures shall be immediately notified to the Project Manager.

Prior to excavations, the Contractor shall dig out the number of trial pits he judges necessary for exact identification of location and depth of the existing buried pipes. He shall submit to the Project Manager for approval of a methodology for excavation so as not to disturb or damage the existing components, prior to execute work.

#### **1.8 Programme of the works**

- a. The whole of the works shall be completed within 180 calendar days from start date.
- b. The Contractor shall submit a programme of works to the Project Manager for approval within fourteen (14) days from the date of issue of the Letter of Acceptance.
- c. The Contractor shall during execution of the contract, revise the programme of works every fortnight and in addition as and when requested and directed by the Project Manager.
- d. The works shall be carried out according to the programme submitted by the Contractor and approved by the Project Manager. The Contractor shall take the following into consideration while preparing the Programme of Works:

- Pipeline will be closed for a maximum of 2 days on a particular site to allow for connection works.
- The Contractor shall ensure that track roads are not obstructed and shall remain accessible to planters and irrigation workers
- The Programme of works shall show all resources (labour, plant and equipment and cash flow) necessary to plan the weekly and monthly progress between the commencement and completion dates. Additionally, it shall show the timing, order of procedure and general method for carrying out the works, with timing for mobilisation of plant and equipment and for the purchase/ordering of goods for different stages of works.
- The critical path with all activities involved therein shall clearly be shown.
- The Programme of Works shall also take due regards of the time required for drawings approval, testing and inspection at the works, freight and delivery to the storage area.

### **1.9 Regulations, Standards and Workmanship**

Except where otherwise specified, all materials to be supplied under the contract shall conform to the requirements of the relevant and latest standards issued by the International Standard Organisation and the workmanship shall conform to the requirements of the relevant and latest British Standard Codes of Practice issued by the British Standard Institution. Other equivalent national standard specifications may be used in the absence, or in the place of a relevant ISO or BSCP standard, at the sole discretion of the Project Manager and with his approval. The standards of workmanship and finish shall be uniform throughout the whole contract and shall be approved by the Project Manager. The standards mentioned herein are issued by the Organisations listed in table 1 where the abbreviations used are defined.



All materials and workmanship not fully specified herein or covered by the standards mentioned before shall be of such kind as is used in first class work. The Project Manager shall determine whether all or any of the materials offered for use in the works are suitable for the purpose for which they are intended and the Project Manager's decision in that respect shall be final.

The Contractor shall supply at his own cost and shall permanently keep on sites all the standard specifications and Codes of Practice. These documents shall be available at all times for inspection and use by the Project Manager's Representative and shall revert to the Contractor at the end of the Contract.

A list of these standards shall be supplied in the Separate Memorandum of the Bidder.

**Table 1: List of standards**

Name and Address	Abbreviation
International Standard Organisation Code Postale 56 1211 GENEVA 20, Switzerland	ISO
Mauritius Standard Bureau MOKA, Mauritius	MS
British Standard Institution 389 Chiswick High Road GB- London W4 4 AL	BS BSCP
Association Française de Normalisation 23, Rue Notre Dame des Victoires 75002 - PARIS, France	AFNOR
Deutsches Institut für Normung Benth Vertrich Strasse 1 BERLIN 30, West Germany	DIN
American Water Works Association 6666 West Quincy Avenue DENVER CO 80197, USA	AWWA
American Society for Testing Materials 1916, Race Street PHILADELPHIA PA 19103, USA	ASTM

Name and Address	Abbreviation
International Electrotechnical Commission Boite Postale 56 1211 GENEVA 20, Switzerland	IEC
Standard ComiteEuropeen de Normalisation Rue de Stassart, 36 B 1050 Bruxelles	CEN
Normes Francaise, AFNOR Tour Europe, F92049 Paris- La Defense FRANCE	NFC
Union Technique de L'Electricite 33, Ave. du General Leclerc BP 23-92262 Fontenay-aux-Roses – CEDEX	UTE
European Norm ON-CEN, PO Box 130, A-1021 Wien AUSTRIA	EN
Indian Standard Bureau of Indian Standards ManakBhavan, 9 Bahadur Shah Zafar Marg New Delhi-110002 INDIA	ISI
American Petroleum Institute American Society of Mechanical Project Managers American Welding Society American National Standards Institute 1819 L Street NW WashingtonDC20036, USA	API, ASME AWS ANSI

The performance of the equipment supplied under the Contract shall be guaranteed in accordance with:

- (i) BS EN ISO 9906:2012 – Rotodynamic Pumps: Hydraulic performance and acceptance tests, Grades 1,2 & 3 or equivalent.

Mechanical installations shall be carried out to good standards of workmanship and all equipment, materials and fittings shall be new and according to specifications.

All other standards to be used to ensure conformity of mechanical equipment installation are as follows:

- (i) BS EN 60034-1:2010 – Rotating electrical machines. Rating and performance
- (ii) BS 5000-3:2006 – Rotating electrical machines of particular types or particular applications. Generators to be driven by reciprocating internal combustion engines. Requirements for resistance to vibration.
- (iii) BS EN 60085:2008 – Electrical insulation. Thermal evaluation and designation.
- (iv) BS 7889:2012. Electric cables. Thermosetting insulated, non-armoured cables with a voltage of 600/1000v, for fixed installations.
- (v) BS EN ISO 9906:2012- Rotodynamic pumps: Hydraulic performance acceptance tests. Grade 1,2 and 3
- (vi) BS ISO 3046-4:2009 – Reciprocating internal combustion engines, Performance speed governing
- (vii) BS EN 12285-2:2005- Workshop fabricated steel tanks horizontal cylindrical single skin and double skin tanks for the aboveground storage of flammable and non-flammable water polluting liquids.
- (viii) BS EN 10255:2004 – Non-alloy steel tubes suitable for welding and threading. Technical delivery conditions.
- (ix) BS 7671:2008+A1:2011- Requirements for electrical installations. IET wiring regulations. Seventeenth edition
- (x) BS EN 1092- 1:2007+A1:2013 – Flanges and their joints. Circular flanges for pipes, valves, fittings and accessories, PN designated cast steel flanges.
- (xi) BS EN 1092 – 2:1997 – Flanges and their joints. Circular flanges for pipes, valves, fittings and accessories, PN designated cast iron flanges.
- (xii) BS EN 14341:2006 – Industrial valves. Steel check valves
- (xiii) BS EN 12334:2001 – Industrial valves. Cast iron valves

### **1.10 Quality of materials**

All goods to be supplied under this contract (pipes, control valves, filtration system, jointing materials, nuts, bolts, gaskets & other fittings) shall be suitable for irrigation water purposes. The quality of materials and goods shall be of first grade and best quality.

All goods supply shall be new, unused, free from any defects and conforming to BS, EN, ISO or other equivalent standards and shall be approved by the Project Manager. Inferior or low-grade supplies shall be rejected by the Project Manager.

Bidder shall submit a complete catalogue information, descriptive literature, specifications and technical data for pipes, fittings, Pumpset and control valves proposed in their Bids to enable the Employer to access their proposal. The Bidder shall be specific as to the country of origin and manufacturing firm of the items intended to supply under this Procurement.

### **1.11 Plant and equipment**

Contractor shall provide and install all necessary plant and equipment (mechanical and otherwise) for all other trades and allow for altering, adapting and maintaining them as necessary for efficient and expeditious execution of the works and at or before completion clear same from the site and make all good, to the entire satisfaction of the Project Manager.

In addition to what has already been specified, all Plant and Equipment shall be designed to provide adequate protection against the entry of vermin and dust and to minimise fire risk and consequential fire damage.

All parts which can be worn or damaged by dust shall be totally enclosed in dust proof housings.

All equipment shall operate without excessive vibration and with minimum of noise.

All similar items of plant and equipment and their components together with spare parts shall be made from the same material and shall be fully interchangeable.

All manually operated plants and equipment not located inside a building shall be provided with facilities for making it tamperproof. This is in addition to any requirements of the specification for securing plant under operational conditions.

**1.12 Patent Rights**

The Bidder shall enclose in his bid a statement from the equipment manufacturer that the Bidder is authorised to supply and install the goods in Mauritius.

The successful Bidder shall indemnify the Public Body against any third party claims of infringement of patent, trademark or industrial design rights arising from use of the Goods or any part thereof in the Public Body's country.

Moreover, the successful Bidder may be requested to submit a certificate of conformity for any material and equipment to be supplied which is equivalent to the existing ones.

The Public Body shall not be held responsible for any failure by the successful Bidder with respect to non-suitability of quoted parts and the Bidder shall, in case of non-conformity of the parts, replace them with the conforming ones at no additional cost.

## **2. The Sites**

### **2.1. Site**

The locations of the sites are indicated in Drawing No. OMD/PUMPSET/08/23/01 and No. OMD/PUMPSET/08/23/02 respectively.

### **2.2. Inspection of site**

The availability of data and drawings do not relieve the Contractor of his responsibility to inspect the Site for further investigations required for execution of the Works.

The Contractor is recommended to acquaint himself with the site locations. He shall assess the presence of all visible existing services, structures or obstacles, rock piles and ranges, trees, steep slopes, conditions of track roads, etc. The Contractor shall ascertain that the equipment he intends to propose is perfectly adapted to operate fully and satisfactorily under the topographical conditions of the site. He shall take into consideration all the above factors while pricing in the Bill of Quantities.

### **2.3. Access to site**

- The Contractor shall give notice to the Employer prior to shipment and delivery of equipment and supplies to Site. The Employer shall grant possession of site or part of it to the Contractor as specified in Conditions of Contract and directed by the Project Manager taking into consideration the programme of work.
- The Contractor shall give notice to the Project manager prior to commence work.
- The Contractor shall be responsible for the reinstatement of existing roads if same were disturbed/damage at respective site and shall also be responsible for safe and easy passage of vehicles on the existing track roads.

**2.4. Clearance of site**

Site clearance shall be carried out over the areas to be occupied by the works and for working space and shall consist of removal and carting away of all unserviceable materials, debris, trees, sugar cane bushes and other vegetation and the grubbing out of all roots and also rocks and boulders. Topsoil so removed shall be kept aside for reinstatement.

**2.5. Site to be tidy**

The site shall be maintained in a neat, tidy and healthy condition, and the Contractor shall remove all waste, debris and unwanted materials and other litter from site upon completion of works.

**2.6. Safety on site**

The Contractor shall adhere to all rules and regulations regarding health and safety of personnel as directed by the OSHA 2005 & regulations and the Irrigation Authority's Health and safety officer. The successful bidder shall take all necessary steps to ensure that the works are done in an orderly manner and that safety precautions are enforced to avoid accidents to the personnel of the successful bidder and to other parties working on Site.

**2.7. First aid outfit**

The Contractor shall provide and maintain on Site in readily available positions near the sites of work, adequate first aid outfit and have experienced first aid man available for attending minor accidents. Fire extinguishers shall also be kept on site.

**2.8. Reinstatement of sites, tracks and estate roads**

Upon completion of Works the successful bidder shall reinstate the Sites, Tracks and Estate roads in a condition not less satisfactory than they were prior to commencement of work.

**2.9. Maintenance of services and structures**

The Contractor shall ascertain the location of all watercourses, sewers, drains, water pipes, electricity, telecommunication cables, other services and structures which may be encountered during the construction of the Works. He shall temporarily support or divert and subsequently reinstate all such services and structures as necessary and to the satisfaction of the Project Manager.

As soon as any such service or structure is encountered on, over, under, in or through the Site during the performance of the Contract, the Contractor shall make a record of the location and detailed description of such service or structure and shall send the same forthwith to the Project Manager.

Where permanent diversion or support of such service or structure is rendered necessary as the unavoidable result of the construction of the Works in accordance with the Contract, the Project Manager - after consultation with the Employer will instruct the Contractor as to the diversion or support to be provided and the Contractor shall be paid the costs thereof in accordance with Clause 40 of the General Conditions of Contract.

**2.10. Pipes, fittings, irrigation equipment and store yard**

All pipes, fittings, equipment and other materials to be used in temporary or permanent works shall be delivered from ships or local suppliers to a store yard approved by the Project Manager. No equipment shall be stored directly on site of works without approval from the Project Manager. The programme of delivery of these pipes, fittings, control



valves and equipment to site shall be supplied by the Contractor in his separate memorandum.

The Contractor shall make his own arrangements for all land, store yards, stores, workshops, offices, etc. and for all services in connection therewith. The storage of the fittings and irrigation equipment shall be to the satisfaction of the Project Manager. The Project shall have access to the store yard to inspect the all pipes, control valves, fittings, pumps and equipment by the Project Manager prior to acceptance.

At time of delivery and acceptance, the equipment to be incorporated in the Works shall be inspected by the Contractor who shall thereafter be responsible for their storage, stock control and safe keeping. The Employer or the Project Manager shall be in no way responsible for breakages or losses of equipment and such items shall be replaced or repaired by the Contractor to the satisfaction of the Project Manager at no cost to the Employer.

The Contractor shall keep structured records on all items available in the store, i.e date of shipment, date of delivery, date of issue to be incorporated in Works, quantity used/left in stock, quantity damaged, etc. Such records shall be made available to the Project Manager on a regular basis.

**2.11. Contractor's staff, communication, offices etc.**

a. General

The Contractor shall advise the Project Manager at which of his offices any notices may be served.

b. Language of Correspondence and Records

All communications between the Contractor, the Project Manager and the Employer shall be in the English language. All books, time sheets, records, notes, drawings, documents, specifications and manufacturers' literature etc. shall be in the English language.

If any document is in a language other than English a certified translation to English by an approved translator shall be submitted to the Project Manager or his Representative.

c. Contractor's Duty Staff & Offices

The Site Agent of the Contractor shall be permanently on the Site during normal working hours and immediately available at all other times. He shall be delegated full authority to act upon instructions given by the Project Manager or his authorised staff and shall be fluent in the spoken and written English language.

The Contractor shall provide at its own cost and maintain at the site, offices for the use of his representative and to which written instructions by the Project Manager can be delivered. Any instructions delivered to such offices shall be deemed to have been delivered to the Contractor.

d. Public Relations

The Contractor shall designate within his site organisation competent staff whose responsibility shall be to ensure good public relations.

The Contractor shall provide and maintain suitable and sufficient shelters and mess rooms for his workmen and supervisory staff.

The Contractor shall provide sufficient closets or latrines and washing facilities to the satisfaction of the relevant authority. They shall be properly screened and maintained in a clean and sanitary state at all times.

The mess rooms, closets and latrines shall be located in positions to be approved by the Project Manager. The Contractor shall be responsible for making all arrangements for the disposal of waste from mess rooms, closets and latrines.

The Contractor shall satisfy the Project Manager or his representative that all his personnel working on the site are medically fit.

**2.12. Inspections by project manager during defects liability period**

The Project Manager will give the Contractor due notice of his intention to carry out any inspections during the Defects Liability Period and the Contractor shall thereupon arrange for an authorised representative acceptable to the Employer to be present at the times and dates named by the Project Manager. This representative shall render all necessary assistance and take note of all matters and things to which his attentions is directed by the Project Manager.

**2.13. Progress photograph**

The Contractor shall provide progress photographs, illustrating each stage of the work being effected to the Project Manager. Photos shall be colored and of minimum size A6 (105mm\*148mm). Photos are to be supplied in hardcopy and soft copy in USB pen drive. The location, date when taken and the direction in which the camera was facing shall be inscribed on the back of each photograph. The photographs shall be submitted to the Project Manager in an album.

**2.14. Notice of operation**

The Contractor shall give full and complete written notice of all important operations to the Project Manager to make such arrangements as the Project Manager may consider necessary for the inspection of works and for any other purpose. The Contractor shall not start any important operation without the written approval of the Project Manager.

**2.15. Progress meetings**

The Contractor's Contract Manager shall attend regular progress meetings on Site which will be convened by the Project Manager. The Contractor shall also attend any other meetings requested by the Project Manager.

## **2.16. As-built drawings**

The Contractor shall supply copies of the as built drawings for the project for:

- The new pumpset and allied equipment installed;
- Other drawings as requested by the Project Manager.

The number of copies and date by which “as built” drawings are to be submitted by the Contractor are as follows:

Three (3) hardcopies, duly approved by the Project Manager, upon completion of the project. One set of final as built drawings shall also be submitted on USB pen drive in AutoCAD drawing format.

## **2.17. Conditions of site and wayleave**

Before carrying out work on site, the site shall be inspected by the Contractor in conjunction with the Project Manager to establish its general condition which shall be agreed and recorded in writing, and where in the opinion of the Project Manager it is deemed necessary, by means of photography.

Any damage caused as a result of the Contractor’s operation to existing plant and equipment beyond the permitted working area mentioned above shall be made good (site reinstatement, crop compensation, and other damages) at the Contractor own expense within two weeks after receipt of the Project Manager’s instruction.

## **3. Pipes, Control Valves, Pumpset, Fittings and Pipework**

### **3.1. General description**

In this Section "Goods" refers to pipes, control valves, pumpset and pipe fittings. All goods to be supplied shall be suitable for waterworks purposes in the conditions prevailing in Mauritius and particularly in the location of the works, for the conveyance of water. All

pipes, fittings and control valves shall have a pressure rating of 16 bars unless otherwise specified.

Alternative bids are permitted and alternative pipe material offered should be equivalent to the Original Bid requirement. Equivalent means similar quality, durability and reliability. This means that the Manufacturer of alternative material should show that his material should have the same levels of quality, durability and reliability as the item specified.

The manufacturing process should have a quality control and assurance program which is ISO 9001. The manufacturing of goods, which fails to meet these criteria will lead to a non-responsive bid and shall no longer be taken into consideration.

In order to better understand our requirement all bidders are requested to attend a pre-bid meeting/site visit which shall be fixed by the Irrigation Authority during the bidding stage.

**In addition, the Bidder shall submit a complete original catalogue, descriptive literature, specifications and technical data for pipes, control valves, fittings and Pumpset proposed in their Bids to enable the Employer to assess their proposal. The Bidder shall be specific as to the country of origin and manufacturing firm of the items intended to supply under this Procurement.**

### **3.2. Periods for delivery**

In order to comply with the requirements of the installation programme, the Contractor shall arrange his delivery programme to meet the stage delivery periods stated in the Programme of Works or Program of Shipment/Delivery calculated from the date of the Letter of Acceptance.

The Contractor may be required to concentrate his earliest deliveries in order to meet the programme for installation and due flexibility should therefore be allowed for in manufacturing.

**3.3. Approval of drawings**

The Contractor shall submit to the Project Manager for approval within 7 days of the Project Manager's order to commence the Works detailed drawings of the Goods and a general arrangement of a typical installation, including critical dimensions for associated civil works. They are to be accompanied, if required, by calculations and explanations to show that they comply with all requirements of these Specifications.

Two weeks shall be allowed for approval by the Project Manager following receipt of drawings. Alteration to approved drawings shall only be made with the written consent of the Project Manager.

**3.4. Installation, Operation and maintenance manuals**

The Contractor shall supply to the Project Manager with the material, plant or/and equipment, all the manuals and drawings describing the recommended procedures for their assemblies, dismantling, installation and operation. These documents shall give the dimensions, weight and space required for the operation and maintenance of the said plant and equipment. A draft of these documents shall first of all be submitted for approval by the Project Manager. After approval by the Project Manager, the Contractor shall submit within two (2) weeks two (2) copies of the approved documents suitably bound under hard cover and one (1) final set of the document shall also be submitted on USB pen drive to the Project Manager.

**3.5. Inspection and testing at works**

Details of the type of manufacturing process shall be submitted for the Project Manager's approval. Independently of the tests to be made on the constituent materials and on the Goods in accordance with the provisions of the Specification the Project Manager will have the right to ask that factory checks be made concerning either the ways in which materials are used or on the manufacturing processes such as casting, founding, cooling,

annealing, burring, welding, riveting, centrifuging, machining, drilling of flanges or any other process.

In this respect, the Contractor shall authorise the Project Manager to carry out the corresponding inspections at the various stages of manufacture.

The Project Manager reserves the right to inspect all or part of the stages of manufacture of components at any Sub-Contractors factory under the same conditions as those applied for inspection at the Contractor's factory.

All Goods shall be tested at works in accordance with relevant standards under this Specification.

All Goods shall be subject to inspection prior to packing for shipment. Such inspection shall include visual inspection, compliance with the Specification, checking of test results as required by the Specification and appropriate Standard or other superior internationally recognized standard and witness testing as required. An inspection of packing and marking of all items may also be undertaken prior to shipment.

For all tests and inspections, the Contractor shall also provide the Project Manager prior to dispatch with test and inspection certificates from an Independent Inspection Agency approved by the Project Manager. The test and inspection certificates shall pertain to actual witness of test and physical inspection by the Agency on the particular consignment. Inspection by the Independent Inspection Agency shall not, however, relieve the manufacturer of his responsibility to furnish material and perform work in accordance with this specification and the relevant standards.

For the items tested, inspected and found to be satisfactory a Project Manager's approval will be issued allowing the Contractor to proceed with arrangements to deliver the materials.

The Contractor shall furnish the Project Manager with a manufacturer's certificate in respect of every consignment of the goods confirming that all items of goods comprising

the consignment comply in all respects with the specified standard. The original and one copy of such manufacturer's certificate shall be delivered to the Project Manager not later than 7 days prior to the intended date of delivery of the Goods to the storage area.

### **3.6. Marking**

Except where expressly agreed between the Contractor and the Project Manager all components of the Goods shall be marked in a clear and lasting manner with the following information:

- Symbol of factory where component was manufactured;
- Date of manufacture
- Nominal diameter, pressure class in metric unit;
- Symbol designating quality of material;
- Direction of flow (where applicable).

### **3.7. Packing, transportation and handling**

All materials and goods are to be properly packed and clearly marked:

**OMD/PUMPSET/08/23.**

All sensitive materials such as gaskets etc., shall be fully protected by means of a moisture-excluding coating or a drying agent or a plastic sealant or plastic covers and/or wooden crates as appropriate to the approval of the Project Manager.

The Contractor shall provide all necessary means of protecting the Goods during loading, transit, unloading and re-handling and delivery. The measures adopted by the supplier at the port of shipment, at the port of unloading and for the transport to the site of work shall be to the approval of the Project Manager. Likewise, the methods adopted by the civil works Contractor on site will be subject to the approval of the Project Manager. No unprotected hooks or wire slings will be permitted. Any damages cause due to transportation and handling shall be made rejected and replaced with new one at the Contractor's expenses.



All packing shall be suitable for unpacking and repacking during inspection and for storing the Goods at the site in the open air at the Contractor's storage area.

All flange connections shall be fitted with protective covers. Nuts, bolts and washers shall be properly labelled and packed in cases. Sealing gaskets shall be fully protected against moisture and properly labelled and packed in cases.

All spare parts which are ordered shall be delivered with the main order and shall be adequately labelled, protected and packed in a suitable container or containers complete with three copies of a detailed inventory.

The Contractor shall supply all necessary materials and equipment for making good, where instructed by the Project Manager, any damage to coatings of pipes, fittings and control valves. In the event of any damage, the Contractor shall be liable for the cost of repairs or replacement and the cost of any delays. The Project Manager shall determine whether the damage shall be repaired or replaced.

### **3.8. Design, Workmanship and Material**

#### **a. Design**

The Contractor shall ensure that the Goods comply with the duties stated in this Specification, to the Project Manager's satisfaction and in accordance with modern practice and it shall be such as will facilitate inspection, cleaning, maintenance and repair and ensure satisfactory operation under all conditions.

#### **b. Standards of Workmanship**

The standard of workmanship shall be of the best quality and to the satisfaction of the Project Manager and shall comply with the requirements of the standards or codes of practices issued by any recognized organisations.

The Contractor may propose other internationally recognised codes of practice or regulations equivalent to those specified for approval by the Project Manager. Such approval to these alternative standards must be obtained prior to start work under this

Contract. Two copies of such alternative standards are to be supplied in English to the Project Manager when required.

c. Materials

All materials used in the manufacture of the Goods shall be approved by the Project Manager.

All materials shall be new and of first-class quality, free from imperfections and selected for long life and minimum maintenance. Particular attention shall be paid to the prevention of corrosion either due to the proximity of dissimilar metals or due to severe ambient conditions. All parts shall be corrosion resistant or adequately protected against corrosion.

They shall have no modifying effect whatsoever on the physical, chemical bacteriological or organoleptical qualities of the water normally conveyed in the system under consideration, either by reason of the materials construction or leaching from protective coating and painting system. All materials shall be such as have been proved under working conditions to be the most suitable for the purpose for which they are used.

Low grade goods shall be rejected. All goods supply shall be new, free from any defects and conforming to BS, EN, ISO or equivalent standards and shall be approved by the Project Manager.

The manufacturing process should have a quality control and assurance program which is ISO 9001 certificate and same shall be submitted to the Project Manager.

Materials shall also meet the following conditions:

- Materials shall be of the best quality and design.
- They shall be for long time durability with a minimum maintenance;
- They shall be suitable for conveyance of raw or treated water under pressure;
- They shall be watertight under all operation and testing pressure prescribe by respective standards; and

- They shall be capable of withstanding without damage all stresses that will be induced during handling, fixing, testing and operation.

The Contractor shall supply the following information for each nominal diameter of Control valves:

- Nominal bore (DN)
- Flange to flange length of valve
- Weight of valve
- Nominal pressure (PN)
- Typical detailed drawings, including cross sections for each diameter.

The Contractor shall state the conditions of storage required for all couplings. Restrictions regarding temperature, humidity, orientation etc. shall also be stated.

### **3.9. Reliability of equipment**

The Goods shall be so manufactured as to ensure the highest standards of operational reliability. All Goods shall be capable for long life with a minimum of maintenance and to meet the following conditions:

- Materials shall be of the best quality and design.
- They shall be for long time durability with a minimum maintenance;
- They shall be suitable for the conveyance of raw or treated water under pressure;
- They shall be capable of withstanding without damage all stresses that will be induced during handling, testing and operation;
- They shall be watertight under all operating and testing pressure prescribed by the respective Standard;
- They shall have long-term resistance to all external factors by virtue of the nature of the materials used in their manufacture as far as water action is concerned and, in a more general manner, the surrounding environment;

**3.10. Pipes general**

The Contractor shall supply the following information for each nominal diameter of pipe viz Ductile Iron (DI), Unplasticised Polyvinyl chloride pipe (UPVC) and Galvanised Steel Pipes.

- a. External diameter
- b. Internal diameter
- c. Overall length per unit
- d. Effective length per unit
- e. Unit weight
- f. Thickness

**3.11. Fittings general**

Pipe fittings shall be to the diameters and classes indicated in the Bill of Quantities and in accordance with the specified standards. Note that the pressure and flowrates provided in bill of quantities will be subjected to a variation of  $\pm 10\%$ .

The Contractor shall supply the following information for each nominal diameter of fittings:

- a. External diameter
- b. Internal diameter
- c. Overall length per unit
- d. Effective length per unit
- e. Weight
- f. Thickness

**3.12. Gate valves**

Gate valves shall conform to relevant clauses of BS 5163-1, and BS EN 1074-1:2000 and BS EN 1074-2:2000 or BS EN 1171:2015 or other equivalent standards. Gate valve shall

also conform to BS EN 1092-1:2018 for flanges dimension and drills and to BS EN 558:2017 for face to face (flange to flange) length. Also, it shall comply with BS 12266-1 for pressure test.

Unless otherwise specified by the Project Manager, all Gate valves shall be doubled flanged, non-rising spindle type and be of Wedge type. The wedge shall be clear of the water way when in the fully open position. Unless otherwise specified Gate valves DN 400 and above shall be metal seated and gate valves of diameter less than DN 400 shall be resilient type.

The valves shall have inside screw spindles and shall close clockwise. The spindle shall be shouldered to allow repacking of the gland whilst the pipeline remains in service. The spindle (stem) shall be made of stainless steel X20Cr13 or higher grade stainless steel or bronze of gun metal. Also, they shall withstand a nominal pressure 16 bars and shall have a low operating torque and be easily actuated.

Gate valves body and bonnet shall be of ductile iron or cast iron. The wedge (disc) shall be solid of ductile iron or stainless steel. The wedge facing ring and body seats shall be made of stainless steel or alternatively of bronze of gun metal. The stem nut shall be made of bronze of gun metal or equivalent copper alloy.

The extension spindles shall be equipped with square headed cap for all sizes of valves. Bypass of gate valves shall be supplied with hand wheel for opening and closing.

The valves to be installed in chambers shall be supplied with either a cast iron or malleable iron hand wheel.

All Gate Valves shall be coated with a protective coating, fusion bonded epoxy having minimum thickness of 250 microns or equivalent coating, for maximum corrosion protection.

Note that flanged to flanged length of gate valve to be supplied and installed shall be such as to fit inside existing chamber.

### **3.13. Air valve**

Air release valves/air valves shall have a pressure rating of 16 bar and conform to BS EN 1074-4 or equivalent standards and be either

- *Single orifice /one way air valves (single function) which automatically release air from a pressure pipeline to the atmosphere during normal operation, or*
- *Double orifice/ two way air valves (triple function) which release large volume of air during pipe filling, intake large volume of air into the pipe during emptying or in case of pipe burst and automatically release air from a pressure pipeline to the atmosphere during normal operation, as specified in the Bill of Quantities.*

Single and Double orifice air valves shall be supplied with surge protection system (non-slam/anti-slam) resulting from sudden filling of the drained air pocket by the flow water.

All air valves shall have a low operating pressure that is less than 0.5 bar.

The body shall be made of ductile iron or cast iron and the float(s) shall be of plastic (ABS, HDPE, polypropylene, etc.) or stainless steel or steel coated with EPDM rubber.

Air Valves shall be coated with a protective coating, fusion bonded epoxy having minimum thickness of 250 microns or equivalent coating, for maximum corrosion protection.

Air valves shall be flanged and conform to BS EN 1092-1:2018 for flange dimensions and drills. Air valves shall be mounted on an isolating valve (gate valve) as specified to allow safe and easy dismantling during maintenance.

The Contractor shall indicate in writing to the Project Manager the manufacturer's recommended maximum pipe diameter on which each size of air valve can be mounted.

### **3.14. Pressure control valve/ pressure regulating valve**

The Pressure Control valves shall be a downstream pressure stabiliser and piston actuated type for size above DN 350 unless otherwise specified. It shall automatically reduce the upstream pressure to a preset but adjustable downstream pressure so that the

downstream pressure is maintained during operation whatever the variations of the upstream pressure above the preset value and whatever the variation in flow rate between zero flow to the maximum flow rate.

The range of the downstream pressures of the Pressure Control valve shall be adjustable as specified in Bill of Quantities.

The maximum pressure variation in the regulated downstream pressure shall not exceed 10% of the preset regulated pressure.

The Valve shall be fitted with a drain plug and with two pressure gauges (glycerin type manometer), one upstream and one downstream of the Pressure Control Valve. These manometers shall be mounted through three-way valves.

Pressure control valves body of shall be of ductile iron, bronze cast-iron, cast iron or gun metal. PCV shall be flanged and conform to BS EN 1092-1:2018 for flanges dimension and drills.

All Pressure relief valve shall be coated with a protective coating, fusion bonded epoxy having minimum thickness of 250 microns or equivalent coating, for maximum corrosion protection.

### **3.15. Non-return valves/check valve**

Non-return valves shall be double-flanged and made of a corrosion resistant material. They must be designed and manufactured to prevent the return of fluid in a direction opposite to the normal flow direction.

The non-return valves shall be water-tight when closed and, when opened, the fluid shall flow through the valve without turbulence. The operation shall be silent. The Non-return valve shall be swing type unless otherwise specified.

### **3.16. Flexible couplings and flange adaptor**

The Contractor shall supply the following information for each nominal diameter of flexible coupling and flange adaptor:

- Nominal bore (or bores in the case of stepped coupling)
- Coupling length
- Weight
- Nominal pressure
- Typical detailed drawings, including cross sections for each diameter of offered couplings.

The Contractor shall state the conditions of storage required for all couplings and flange adaptors. Restrictions regarding temperature, humidity, orientation etc. shall also be stated.

Flexible couplings, straight or steeped coupling and flange adaptor shall be made of ductile iron.

Couplings and flange adaptors shall be coated with a protective coating, fusion bonded epoxy having minimum thickness of 250 microns or equivalent coating, for maximum corrosion protection.

The bolts of the coupling and flange adaptors shall be of either galvanised or stainless steel. Contractor shall assume full responsibility for compatibility of coupling/flange adaptor with existing pipe. Coupling and flange adaptors shall withstand a nominal pressure of 16 bar. Flexible couplings shall be supplied without a locating stud.

Stepped couplings shall be suitable for connecting difference types of pipes.

Flanged adaptors shall be suitable for connecting PN 10, PN 16 or PN 25 drilled flanges to BS 4504 to ductile iron or steel pipes as indicated in the Bill of Quantities.

### **3.17 Bolts, nuts, washers and gaskets**

New and unused bolts, nuts and gaskets are to be supplied for the replacement and installation of control valve under this contract.



All bolts, nuts and washer for flange connection shall be of Grade A-2 stainless steel unless otherwise specified or directed by the Project Manager. Bolts and nuts shall be hexagonal. All bolts and nuts size for connections shall be in accordance with BS EN 1092-1:2018.

The tightening of the bolts shall be carried out in the crisscross sequence and to the torque recommended by the manufacturer. A torque wrench shall always be used and in no case shall excessive tightening be exerted on any nuts or bolts.

The successful bidder shall list all bolts with respect to their grade and diameter which shall be used for the purpose of the work on each valve and fitting and same should be duly checked and endorsed by the Project Manager.

Gaskets shall be made of reinforced type EPDM rubber, in accordance with BS EN681-1 and duly certified as suitable for raw water supply (irrigation water), by one of the International regulations or as recommended by the manufacturer of particular valve and fitting.

**3.18. Manometer**

Manometers shall be male threaded and of glycerine type with the indicator graduated in 'bar' or combination of 'bar' and 'psi' with intervals of 0.2 or 0.5 and shall be have at least 0 to 20 bars reading unless otherwise specified.

**3.19. Other proposed valves and fittings**

The Bidder shall furnish suitable element and fittings acceptable to the Project Manager and complying with norms EN, ISO or equivalent standards, to ensure compatibility of piping system with valves. Ancillaries shall withstand a nominal pressure of 16 bars and be of the best quality material and design.

**3.20. Flanges & bolting for pipes, valves and fittings**

Flanges and bolting for pipes, valves and fittings shall all be to BS EN 1092-1:2018 or alternatively to AFNOR NF E 29-201 or ISO 2084 or to other standard to the approval of

the Project Manager, provided that they are each compatible with the other for the purposes of jointing like-sized components and are such that corrosion by galvanic action shall be avoided. The rating and test pressure of the flanges shall not be less than the rating and test pressure of the pipeline specified.

### **3.21. Cutting pipes**

All pipes shall be cut with an approved mechanical pipe cutter and in conformity with the pipe manufacturer's recommendations. The edges of the cut shall be clean, true and square. The use of an oxyacetylene flame cutter will not be permitted in any circumstances. The edges of the cut together with those parts of the pipes from which the coating has been removed shall be given two coats of bituminous paint and the internal lining repaired, if damaged, to the approval of the Project Manager. When the cut pipe is to be inserted in a "Tyton" type joint it shall be bevelled for 10mm at 30° to pipe axis to remove sharp or rough edges.

### **3.22. Proprietary joints and couplings**

Proprietary joints and couplings shall be assembled in accordance with the manufacturer's instructions. The Contractor shall be responsible for obtaining such copies of the manufacturer's instructions as he requires, at his own expense.

The Contractor shall be responsible for obtaining all the necessary special tools, lubricants and appliances necessary for making the joints.

Where pipes are laid above ground and jointed with bolted flexible couplings the nuts bolts and gaskets shall be protected against vandalism by sheathing with an approved heat-shrink moulding as manufactured by Raychem of Swindon UK or similar approved.

### **3.23. Grouting in ironwork & pipes**

All brackets, anchor bolts and other ironwork for which holes have been boxed out or left in the concrete of a structure shall be carefully grouted into their correct positions in all

particulars. The grouting in shall be carried out with cement and sand grout in such a manner that there shall be no apparent difference in the texture or colour throughout the face or seepage of water either between the iron work and set grout or between the set grout and the surrounding structures.

The above instructions shall apply also to the building in of pipes except that the class of concrete used for that part of the structure shall be used in lieu of cement grout.

#### **3.24. Fixing valves**

Valves and other fittings shall be securely fixed and where required extension spindles and headstocks shall be properly aligned and fixed in vertical position and valve caps shall be fixed securely using the locking nut. They shall be tested for ease of operation and water tightness. Any damaged protective coating shall be made good and they shall be left clean in all respects.

#### **3.25. Thrust blocks**

Concrete thrust blocks shall be formed at bends, tees and valves as directed by the Project Manager. The additional excavation shall be made after the bends, etc. have been jointed and the concrete shall then be placed with all possible speed. The back of supports and blocks shall abut on to solid ground with all loose material being removed before concreting.

The concrete used for thrust shall be Grade C20 or as shown on the Drawings and after placing shall be kept in view for not less than six hours. No pressure shall be applied in any section of main until the concrete has had at least three day's curing.

Flexible joints shall not normally be cast into thrust blocks. Where the size of thrust block does not make this possible, additional flexible joint shall be provided no greater than half the pipe diameter beyond each face of the block.

**3.26. Support blocks**

Where control valves are placed on support block, the concrete used for support blocks shall be of Grade C20. After pouring of fresh concrete, the latter shall be kept in view for not less than six hours. Where new concrete is to be cast and place on existing support block, Contractor shall use an approved high-grade bonding agent prior of placing new concrete. The method of application of the bonding agent shall be applied as per manufacturer's guideline. Existing concrete surfaces shall be clean from wax, grease, oil, dust, loose concrete, etc. prior to apply bonding agent.

**B. SPECIFICATION AND COMPLIANCE SHEET**

**Procurement Reference Number: OMD/PUMPSET/08/23**

Item No.	Specifications and Performance Required	Compliance of specifications and Performance Offered	Details of Non-Compliance/Deviation (if applicable)
	<b>A</b>	<b>B</b>	<b>C</b>
1.	<p>Supply, installation, testing and commissioning of centrifugal surface pumpset as follows:</p> <p><b><u>LOT A -</u></b></p> <p>1. <b>Bill No. 1:</b> Pump No. 1 at Riviere du Rempart Pumping Station for Riviere du Rempart SSIP</p> <p>2. <b>Bill No. 2:</b> Pump No. 1 at Providence Pumping Station for Belle- Mare SSIP</p> <p><b><u>LOT B</u></b></p> <p>1. <b>Bill No. 3:</b> Pump No. 2 at Riviere du Rempart Pumping Station for Riviere du Rempart SSIP</p> <p>2. <b>Bill No. 4:</b> Pump No. 3 at Providence Pumping Station for Belle- Mare SSIP</p>		

**Specification and Compliance Sheet Authorized By:**

Name:		Signature:	
Position:		Date:	
Authorized for and on behalf of:		Company:	

**Section IV:  
General Conditions of Contract and  
Particular Conditions of Contract**

Any resulting contract shall be placed by means of a Letter of Acceptance and shall be subject to the General Conditions of Contract (GCC), (Ref:W/GCC10/12-21), for the Procurement of Works (available on website [ppo.govmu.org](http://ppo.govmu.org)) except where modified by the Particular Conditions of Contract below.

## Particular Conditions of Contract

Procurement Reference Number: **OMD/PUMPSET/08/23**

The clause numbers given in the first column correspond to the relevant clause number of the General Conditions of Contract.

<b>A. General</b>	
<b>GCC 1.1 (o)</b>	The Defects Liability Period is 12 months from the Completion Date.
<b>GCC 1.1 (r)</b>	The Employer is:  Irrigation Authority 5 <sup>th</sup> Fon Sing Building 12 Edith Cavell Street Port Louis  The Authorised representative is Mr. G. SEETAH who is also the General Manager
<b>GCC 1.1 (v)</b>	The Intended Completion Date for the whole of the Works shall be <b>One hundred and Twenty (120) calendar days</b> calculated from the start date.  The Start date shall be 7 days from the date of issue of the Order to Commence works to be issued by the Project Manager
<b>GCC 1.1 (y)</b>	The Project Manager shall be a representative of the Irrigation Authority
<b>GCC 1.1 (aa)</b>	The Sites are located at Riviere du Rempart and Providence (Post de Flacq) respectively and is defined in drawings No. <b>OMD/PUMPSET/08/23/01</b> and <b>OMD/PUMPSET/08/23/01</b> respectively.
<b>GCC 1.1 (dd)</b>	“The Start Date shall be seven (7) days from the issue of Order to Commence works to be issued by the Project Manager
<b>GCC 1.1 (hh)</b>	The Scope of Works under Contract <b>OMD/PUMPSET/08/23</b> shall consist of viz.:  (i) Disconnect all electrical connections from the main electrical Control Panel to all the pumpset which are to be replaced.

	<ul style="list-style-type: none"> <li>(ii) Disconnect the defective pumpsets from the existing inlet and outlet pipeworks.</li> <li>(iii) Dismantle the pumpset and deliver same to our store at Plaine des Papayes including all the unserviceable items from the Riviere du Rempart and Providence Pumping Stations.</li> <li>(iv) Perform electrical check to the existing control panel, capacitor bank, lightning protection, power surge protection, earthing system before connecting to be pumpset.</li> <li>(v) Supply, install, test and commission electrical pumpset as requested under LOT A and LOT B respectively.</li> <li>(vi) Verification and Installation of dry running protections.</li> <li>(vii) Supply, install and test new manometers at outlet of each pump.</li> <li>(viii) Supply, connect and test all appropriate size electrical cables to connect electrical power from control panel to the pump motor c/w all accessories cable trays, trunking, conduit, fixation and support materials. (Provisional)</li> <li>(ix) Overall commissioning of the pumpsets.</li> <li>(x) Submit 3 set of copies of O&amp;M manuals, electrical line diagram and As-Built drawings.</li> <li>(xi) Training on operation and maintenance of the pumpsets to the pump operators.</li> <li>(xii) The Bidder shall include the cost for all associated civil works required for the successful execution of the work. The Bidder shall take cognizance of the site of work and cater for any additional equipment required for the execution of the work.</li> <li>(xiii) Provide for any additional pipe, valves, fittings, and accessories in the assembly and connection of the new pumpset.</li> </ul> <p>The completion period shall be <b>One hundred and Twenty (120) calendar days</b> from the Start Date.</p> <p>The whole of the works shall be carried out in strict accordance with the Drawings, Scope of Works; Statement of Requirements; and Conditions of Contract.</p>
<b>GCC 2.2</b>	Sectional Completions are not applicable to this Contract
<b>GCC 2.3(i)</b>	<p>The following documents also form part of the Contract:</p> <p>1) Pre-award correspondences</p>



	<p>2) Post- award Submissions:</p> <p>(a) Performance Security</p> <p>(b) Insurance policies</p> <p>(c) Joint Venture Agreement (if any)</p> <p>(d) Programme of Works</p> <p>3) Technical Documents including all catalogues and brochure of control valves supplied under this Contract</p> <p>4) Any other document submitted by the Bidder which the Employer considered to be necessary for inclusion in the Contract</p>
<b>GCC 3.1</b>	<p>The language of the contract is English</p> <p>The law and regulations that apply to the Contract are those of Mauritius.</p>
<b>GCC 4.1</b>	<p>The Project Manager shall obtain specific approval from the Employer before carrying out any of his duties under the Contract which in the Project Manager's opinion will cause the amount finally due under the Contract to exceed the Contract Price or will give entitlement to extension of time. This requirement shall be waived in an emergency affecting safety of personnel or the Works or adjacent property.</p>
<b>GCC 5.1</b>	<p>The Project Manager may not delegate any of his duties and responsibilities without the approval of the Employer.</p>
<b>GCC 6</b>	<p>Any notice shall be sent to the following addresses:</p> <p>The General Manager, <b>Irrigation Authority</b>, 5<sup>th</sup> Floor Fon Sing Building, 12 Edith Cavell Street Port Louis.</p> <p>For the Contractor, the address shall be as given on the first page of the Letter of Acceptance and the contact name shall be _____.</p>
<b>GCC 8.1</b>	<p>Schedule of other contractors is not applicable.</p>
<b>GCC 9.1</b>	<p>To add under Key Personnel:</p> <p>(i). One Contract Manager, holding at least a Degree in Mechanical, Electromechanical or Building Services Engineering from a recognised institution. He shall have at least 5 years experience in</p>

	<p>Mechanical or Electromechanical engineering works or Building Services Engineering works and shall be registered with the Council of Registered Professional Engineer of Mauritius.</p> <p>(ii). Site agent holding at least a Degree in Mechanical or Electromechanical engineering works or Building Services Engineering works from a recognised institution and shall be registered with the Council of Registered Professional Engineer of Mauritius. He shall have at least 3 years post registration experience in Mechanical or Electromechanical engineering works or Building Services Engineering works.</p> <p>(iii). One foreman having at least 3 years of experience in pipe laying works, plumbing works and installation of water works.</p> <p>(iv). At least one qualified plumber/pipe fitter having a minimum 3 years of experience related to installation of water works.</p>
<p><b>GCC 13.1</b></p>	<p>Except for the cover mentioned in (d)(i) hereunder, the other insurance covers shall be in the joint names of the Contractor and the Employer and the minimum insurance amounts shall be:</p> <p>(a) for the Works, Plant and Materials: <b>Contract Price plus 15%</b></p> <p>(b) for loss or damage to Equipment: <b>Cost of equipment plus 15% of its value</b></p> <p>(c) for loss or damage to property (except the Works, Plant, Materials, and Equipment) in connection with Contract: <b>MUR 1,000,000.00 (One Million Rupees)</b></p> <p>(d) for personal injury or death:</p> <p>(i) of the Contractor's employees: As per Law of Mauritius</p> <p>(ii) of other people: <b>MUR 2,000,000 (Two Million Rupees)</b>. This cover shall be in the joint name of the two parties covering any third party and extended to the site representatives of the Irrigation Authority.</p>

	<p>(e) for loss or damage to materials on-site and for which payment have been included in the Interim Payment Certificate, where applicable.</p> <p>The Contractor shall choose to take the insurance covers indicated above as separate covers or a combination of the Contractor's All Risks coupled with the Employer's liability and First Loss Burglary, after approval of the Employer. All insurance covers shall be of nil or the minimum possible deductibles at sole expense of the contractor.</p> <p>All insurance covers shall be valid from commencement of works until the end of the defects liability period and shall be approved by the Project Manager.</p>
<b>GCC 14.1</b>	<p>Site Investigation Reports are:</p> <p>There are no Site Investigation Reports available for this project. Bidders are however advised to visit the site prior to submission of bid. They should acquaint themselves with the nature of the site, extent of the work, means of access, general nature of the soil and all other matters which may influence preparation and execution of their bid. All costs incidental thereof shall be at the Bidder's own expense.</p> <p>No claim due to ignorance of these factors as mentioned in the preceding paragraph shall be entertained from the contractor.</p>
<b>GCC 16.1</b>	The intended completion date shall be <b>One hundred and Twenty (120)</b> calendar days from the Start Date.
<b>GCC 20.1</b>	The Site Possession Date shall be stated by the Project Manager in the order to commence work and based on the Programme of Works to be approved by the Project Manager as stated in GCC 25.1.
<b>GCC 23.1 &amp; GCC 23.2</b>	Appointing Authority for the Adjudicator: <b>No Adjudicator shall be appointed for this Contract.</b>
<b>GCC 24.</b>	<p>No Adjudicator shall be appointed under the contract and arbitration shall not apply. If any dispute arises between the Employer and the Contractor in connection with or arising out of the Contract, the parties shall seek to resolve any such dispute by amicable agreement.</p> <p>If the parties fail to resolve such dispute by amicable agreement, within 14 days after one party has notified the other in writing of the dispute, then the dispute shall be referred to court by either party.</p>

<b>B. Time Control</b>	
<b>GCC 25.1</b>	The Contractor shall submit for approval a Programme for the Works within 7 days from the date of the Letter of Acceptance.
<b>GCC 25.3</b>	Program updates shall be required and the period between Program updates is fourteen (14) days. The amount to be withheld for late submission of an updated Program is <b>MUR 1,000</b> per day delayed.
<b>C. Quality Control</b>	
<b>GCC 33.1</b>	The Defects Liability Period is 365 calendar days calculated from the date of completion of the works certified by the Project Manager in accordance with Clause 53.
<b>GCC 34.1</b>	Delete sub-clause 34.1 and replace by the following:  Should any defect arise during the contractual period and up to the end of the Defects Liability Period and the Contractor fails to correct the Defect within the time specified in the Project Manager's notice, this shall constitute a breach of the Contractor's obligations under the contract. The Project Manager shall assess the cost of having the defect corrected and recover the money from the Performance Security.
<b>GCC 37.1</b>	To add:  Prior to issue of any Variation Order (VO) involving cost implication, the Project Manager shall assess the variation and seek the approval of the Employer.
<b>GCC 37.2</b>	To add:  The Project Manager shall assess all quotations and submit recommendation to Employer for approval prior to issue of the VO.
<b>GCC 39.7</b>	Payment shall be made as per progress of works without payment for materials on site.
<b>D. Cost Control</b>	
<b>GCC 40.1</b>	Replace second sentence "The Employer shall pay the Contractor the amounts certified by the Project Manager within 21 days of the date of each certificate with supporting documents from the Contractor" by

	<p>“The Project Manager shall certify the amount after verification within fourteen (14) days from the receipt of an invoice supported by an interim payment application from the Contractor and the Employer shall pay the Contractor for the amount certified by the Project Manager within 56 days of receipt of the certified interim payment certificate from the Project Manager.”</p> <p>To add:</p> <p>Minimum amount of Interim Payment shall be MUR 500,000.</p>
<b>GCC 41.1 (l)</b>	<p>The term “exceptionally adverse weather conditions” is hereby defined as any one of the following events:</p> <p>(i) 100 mm rainfall or above recorded in one day of the nearest rain station;</p> <p>(ii) An official declaration of ‘Torrential Rain’ by meteorological Department of Mauritius; and</p> <p>(iii) Cyclone warning Class II or above.</p>
<b>GCC 43.1</b>	The currency of the Employer’s country is: <b>Mauritian Rupees.</b>
<b>GCC 44.1</b>	The Contract is not subject to price adjustment. It shall be a fixed price which shall not revised or adjusted for any fluctuations in the cost of inputs.
<b>GCC 45.1</b>	<p>10% of the amount shall be retained from any <del>payment in respect of the</del> value of work certified. Half of the retention money will be released after formal taking over of the Works and the remaining shall be released after the Defect Liability Period subject to the Contractor making good all defects.</p> <p><b><i>The Limit of Retention Money shall be 5% of Contract Price.</i></b></p>
<b>GCC 46.1</b>	<p>The liquidated damages for the whole of the Works shall be MUR 5,000 per calendar day beyond the Intended Completion Date.</p> <p>The maximum amount of liquidated damages for the whole of the Works is 10% of the Contract Price.</p>
<b>GCC 47.1</b>	The Bonus for the whole of the Works is not applicable.
<b>GCC 48.1</b>	The Advance Payments shall be: 15 % of the Contract Price excluding VAT and shall be paid to the Contractor within 14 days after signature of the Contract and submission of the Advance Payment security by the contractor no later than 7 days from the signature of the Contract.
<b>GCC 49.1</b>	The Performance Security amount is 10% of Contract price excluding VAT.

<b>E. Finishing the Contract</b>	
<b>GCC 56</b>	<p>The date by which operating and maintenance manuals are required is two weeks before the intended completion date. The date by which “as built” drawings are required is two weeks before the intended completion date.</p> <p>“As built” drawings shall be worked out by the Contractor and submitted for approval by the Project Manager in case of changes to drawings of the bidding document, failing which these drawings shall be drawn by the Employer at the cost of Rs 1000 per drawing which will be deducted from the final payment to the contractor.</p>
<b>GCC 57.2 (g)</b>	The maximum number of days shall be computed based on the maximum amount of liquidated damages for the whole of the Works.
<b>GCC 59.1</b>	The percentage to apply to the value of the work not completed, representing the Employer’s additional cost for completing the Works, is 25%.

# **Section V**

## **Contract Forms**

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**PERFORMANCE SECURITY**

.....*Bank/Insurance Company's Name and Address of Issuing Branch or Office*.....

**Beneficiary:** .....*Name and Address of Public Body*.....

**Date**.....

**PERFORMANCE GUARANTEE No.:** .....

We have been informed that .....*[name of the Contractor]* ..... (hereinafter called "the Contractor") has entered into Contract No.....*[reference number of the Contract]* ..... dated..... with you, for the execution of .....*[name of Contract and brief description of Works]* .....(hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance security is required.

At the request of the Contractor, we ..... *[name of Bank/Insurance Company]* .....hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of ..... *[amount in figures (amount in words)]* ..... such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire and returned to us not later than twenty- one days from the date of issuance of the Defects Liability Certificate, calculated based on a copy of such Certificate which shall be provided to us, or on the.....day of ....., ....., whichever occurs first. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

.....**Seal of bank/Insurance Guarantee and**

**Signature(s)**.....

**ADVANCE PAYMENT SECURITY**

*[Bank’s/ Insurance Company’s Name, and Address of Issuing Branch or Office]*

**Beneficiary:** ..... *[Name and Address of Employer]* .....

**Date:**.....

**Advance Payment Guarantee No.:** .....

We have been informed that . . . . *[name of the Contractor]* . . . . (hereinafter called “the Contractor”) has entered into Contract No. . . . . *[reference number of the Contract]* . . . . dated . . . . . with you, for the execution of . . . . . *[name of contract and brief description of Works]* . . . . (hereinafter called “the Contract”).

Furthermore, we understand that, according to the Conditions of the Contract, an advance payment in the sum . . . . . *[name of the currency and amount in figures]*<sup>1</sup>. . . . . (. . . . . *[amount in words]* . . . . . ) is to be made against an advance payment guarantee.

At the request of the Contractor, we . . . . . *[name of the Bank/Insurance Company]* . . . . . hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of . . . . . *[name of the currency and amount in figures]* \*. . . . . (. . . . . *[amount in words]* . . . . . ) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation under the Contract because the Contractor used the advance payment for purposes other than the costs of mobilization in respect of the Works.

It is a condition for any claim and payment under this guarantee to be made that the advance payment referred to above must have been received by the Contractor on its account number . . . . . *[Contractor’s account number]* . . . . . at . . . . . *[name and address of the Bank/Insurance Company]* . . . . .

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Contractor as indicated in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that eighty (80) percent of the Contract Price has been certified for payment, or on the . . . day of . . . . . , . . . . .<sup>2</sup>, whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

..... *[Seal of Bank/Insurance Company and Signature(s)]* .....

**CONTRACT AGREEMENT**

THIS AGREEMENT made the ..... of ..... *[Date]*, between ..... *[Name of employer]* (Hereinafter “the Employer”), of the one part, and ..... *[Name of the Contractor]* (Hereinafter “the Contractor”), of the other part:

WHEREAS the Employer desires that the Works known as..... *[Name of the Contract]* should be executed by the Contractor, and has accepted a Bid by the Contractor for the execution and completion of these Works and the remedying of any defects therein,

The Employer and the Contractor agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all the other Contract documents.
  - a) The Letter of Acceptance
  - b) The Bid
  - c) The Addenda Nos.....(Insert Addenda numbers if any)
  - d) The Appendix to the General Conditions of Contract
  - e) The General Conditions of Contract;
  - f) The Specifications
  - g) The Drawings; and
  - h) The Completed Schedules
3. In consideration of the payments to be made by the Employer to the Contractor as indicated in this Agreement, the Contractor hereby covenants with the Employer to execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of Mauritius on the day, month and year indicated above.

**Signed by:**

.....

For and on behalf of the Employer

**Signed by:**

.....

For and on behalf of the Contractor

**In the presence of:**

.....

Witness, Name, Signature, Address, Date

**In the presence of**

.....

Witness, Name, Signature, Address, Date

**Section VI**  
**Bill of Quantities**

## Supply, Installation, Testing and Commissioning of Centrifugal Surface Pumpset

Procurement Reference No: OMD/PUMPSET/08/23

### SUMMARY OF BILL OF QUANTITIES

S.N	General Summary	Amount
<b>LOT A</b>		
1	Preliminaries for <b>LOT A</b> (To include costs for mobilization, demobilization, Insurance, Securities, etc..)	
2	<b>Bill No. 1:</b> Supply, Installation, Testing and Commissioning of Centrifugal Surface pumpset to replace Pump No. 1 at Riviere du Rempart Pumping Station.	
3	<b>Bill No. 2:</b> Supply, Installation, Testing and Commissioning of Centrifugal Surface pumpset to replace Pump No. 1 at Providence Pumping Station.	
<b>Subtotal (LOT A)</b>		
<b>VAT @15%</b>		
<b>Total (LOT A)</b>		

S.N	General Summary	Amount
<b>LOT B</b>		
1	Preliminaries for <b>LOT B</b> (To include costs for mobilization, demobilization, Insurance, Securities, etc..)	
2	<b>Bill No. 3:</b> Supply, Installation, Testing and Commissioning of Centrifugal Surface pumpset to replace Pump No. 2 at Riviere du Rempart Pumping Station.	
3	<b>Bill No. 4:</b> Supply, Installation, Testing and Commissioning of Centrifugal Surface pumpset to replace Pump No. 3 at Providence Pumping Station.	
<b>Subtotal (LOT B)</b>		
<b>VAT @15%</b>		
<b>Total (LOT B)</b>		

<b>Total (Lot A + LOT B)</b> <b>Including VAT @15%</b> <b>(carried forward to Bid Submission Form)</b>	
--	--

## Supply, Installation, Testing and Commissioning of Centrifugal Surface pumpset

Procurement Reference No: OMD/PUMPSET/08/23

### LOT A

**Bill No. 1: Supply, Installation, Testing and Commissioning of Centrifugal Surface pumpset to replace Pump No. 1 at Riviere du Rempart Pumping Station.**

Item	Description	Unit	Qty	Rate (MUR)	Amount (MUR)
<b>1</b>	<b>Supply, Installation, Testing and Commissioning of Centrifugal Surface pumpset to replace Pump No. 1 at Riviere du Rempart Pumping Station.</b>				
1.1	Disconnect all electrical connections from the main electrical Control Panel to the pumpset which needs to be replaced.	Sum	1		
1.2	Disconnect pumpset No. 1 from the existing inlet and outlet pipeworks.	Sum	1		
1.3	Dismantle pumpset No. 1 and deliver same and including all the unserviceable items to our store at Plaine des Papayes from the Riviere du Rempart pumping Station.	Sum.	1		
1.4	Perform electrical check and testing to the existing control panel, capacitor bank, lightning protection, power surge protection, dry running protection system, earthing system before connecting to the new pumpset.				
	Report on the rehabilitation work that needs to be done, if any.	Sum.	1		
1.5	Supply, install, test and commission of 1 No. electric <b>horizontal</b> type centrifugal surface pumpset of duty point 399 m <sup>3</sup> /hr at a total manometric head of 94 m, 160 Kw, complete with electric motor as specified to replace Pump No. 1 at Riviere du Rempart Pumping Station.	No.	1		
	Bidder to include for all the transition pieces, pipe modification works, manometers, fittings and accessories.				
	<b>TOTAL C/F</b>				

Item	Description	Unit	Qty	Rate (MUR)	Amount (MUR)
	<b>TOTAL B/F</b>				
1.6	All associated civil and metal fabrication works to be undertaken during the installation of pump such as refurbishment and casting of concrete support block, demolition of thrust block and upgrading work on the floor of the pump room to accommodate the new pumpset.	Sum	1		
1.7	Supply the following spares parts as specified for the pumpset:				
	(i) Impeller	No.	1		
	(ii) Soft Packing	Roll	1		
	(iii) Gasket Kit and O-Rings	Set.	2		
	(iv) Neck Ring (if applicable)	No.	1		
	(v) Bearing (DE/NDE) for Pump	Set.	2		
	(vi) Bearing (DE/NDE) for Motor	Set.	2		
1.8	Submit progress photograph as specified	Lot	1		
1.9	Submit O&M manuals, workshop manuals as specified.	Lot	1		
1.10	Submit As-Built drawing as specified.	Lot	1		
1.11	Provision for replacement of existing defective gate valve, non-return, bellow-couplings, flanged adaptors, footvalves, etc...	Prov. Sum			125,000
1.12	Provision for labelling of all Electrical components in Control Panel	Prov. Sum			20,000
	<b>TOTAL C/F TO BILL No. 1 OF SUMMARY OF BOQ</b>				



**LOT A****Bill No. 2: Supply, Installation, Testing and Commissioning of Centrifugal Surface pumpset to replace Pump No. 1 at Providence Pumping Station.**

Item	Description	Unit	Qty	Rate (MUR)	Amount (MUR)
<b>1</b>	<b>Supply, Installation, Testing and Commissioning of Centrifugal Surface pumpset to replace Pump No. 1 at Providence Pumping Station.</b>				
1.1	Disconnect all electrical connections from the main electrical Control Panel to the pumpset which needs to be replaced.	Sum	1		
1.2	Disconnect pumpset No. 1 from the existing inlet and outlet pipeworks.	Sum	1		
1.3	Dismantle pumpset No. 1 and deliver same and including all the unserviceable items to our store at Plaine des Papayes from the Providence pumping Station.	Sum.	1		
1.4	Perform electrical check and testing to the existing control panel, capacitor bank, lightning protection, power surge protection, dry running protection system, earthing system before connecting to the new pumpset.				
	Report on the rehabilitation work that needs to be done, if any.	Sum.	1		
1.5	Supply, install, test and commission of 1 No. electric <b>vertical</b> type centrifugal surface pumpset of duty point 360 m <sup>3</sup> /hr at a total manometric head of 75 m, 150 Kw, complete with electric motor as specified to replace Pump No. 1 at Providence Pumping Station.	No.	1		
	Bidder to include for all the transition pieces, pipe modification works, fittings and accessories.				
1.6	All associated civil and metal fabrication works to be undertaken during the installation of pump such as refurbishment and casting of concrete support block, demolition of thrust block and upgrading work on the floor of the pump room to accommodate the new pumpset.	Sum	1		
	<b>TOTAL C/F</b>				

Item	Description	Unit	Qty	Rate (MUR)	Amount (MUR)
	<b>TOTAL B/F</b>				
1.7	Supply the following spares parts as specified for the pumpset:				
	(i) Impeller	No.	1		
	(ii) Soft Packing	Roll	1		
	(iii) Gasket Kit and O-Rings	Set.	2		
	(iv) Neck Ring (if applicable)	No.	1		
	(v) Bearing (DE/NDE) for Pump	Set	2		
	(vi) Bearing (DE/NDE) for Motor	Set	2		
1.8	Submit progress photograph as specified	Lot	1		
1.9	Submit O&M manuals, workshop manuals as specified.	Lot	1		
1.10	Submit As-Built drawing as specified.	Lot	1		
1.11	Provision for replacement of existing gate valve, non-return, bellow-couplings, flanged adaptors, footvalves, etc...	Prov. Sum			125,000
1.12	Provision for labelling of all Electrical components in Control Panel	Prov. Sum			20,000
	<b>TOTAL C/F TO BILL No. 2 OF SUMMARY OF BOQ</b>				

**LOT B****Bill No. 3: Supply, Installation, Testing and Commissioning of Centrifugal Surface pumpset to replace Pump No. 2 at Riviere du Rempart Pumping Station.**

Item	Description	Unit	Qty	Rate (MUR)	Amount (MUR)
<b>1</b>	<b>Supply, Installation, Testing and Commissioning of Centrifugal Surface pumpset to replace Pump No. 2 at Riviere du Rempart Pumping Station.</b>				
1.1	Disconnect all electrical connections from the main electrical Control Panel to the pumpset which needs to be replaced.	Sum	1		
1.2	Disconnect pumpset No.2 from the existing inlet and outlet pipeworks.	Sum	1		
1.3	Dismantle pumpset No.2 and deliver same and including all the unserviceable items to our store at Plaine des Papayes from the Riviere du Rempart pumping Station.	Sum.	1		
1.4	Perform electrical check and testing to the existing control panel, capacitor bank, lightning protection, power surge protection, dry running protection system, earthing system before connecting to the new pumpset.				
	Report on the rehabilitation work that needs to be done, if any.	Sum.	1		
1.5	Supply, install, test and commission of 1 No. electric <b>horizontal</b> type centrifugal surface pumpset of duty point 201 m <sup>3</sup> /hr at a total manometric head of 91 m, 76 Kw, complete with electric motor as specified to replace Pump No. 1 at Riviere du Rempart Station.	No.	1		
	Bidder to include for all the transition pieces, pipe modification works, fittings and accessories.				
1.6	All associated civil and metal fabrication works to be undertaken during the installation of pump such as refurbishment and casting of concrete support block, demolition of thrust block and upgrading work on the floor of the pump room to accommodate the new pumpset.	Sum	1		
	<b>TOTAL C/F</b>				

Item	Description	Unit	Qty	Rate (MUR)	Amount (MUR)
	<b>TOTAL B/F</b>				
1.7	Supply the following spares parts as specified for the pumpset:  (i) Impeller (ii) Soft Packing (iii) Gasket Kit and O-Rings (iv) Neck Ring (if applicable) (v) Bearing (DE/NDE) for Pump (vi) Bearing (DE/NDE) for Motor	No. Roll Set. No. Set. Set.	1 1 2 1 2 2		
1.8	Submit progress photograph as specified	Lot	1		
1.9	Submit O&M manuals, workshop manuals as specified.	Lot	1		
1.10	Submit As-Built drawing as specified.	Lot	1		
1.11	Provision for replacement of existing gate valve, non-return, bellow-couplings, flanged adaptors, footvalves, etc...	Prov. Sum			125,000
	<b>TOTAL C/F TO BILL No. 3 OF SUMMARY OF BOQ</b>				

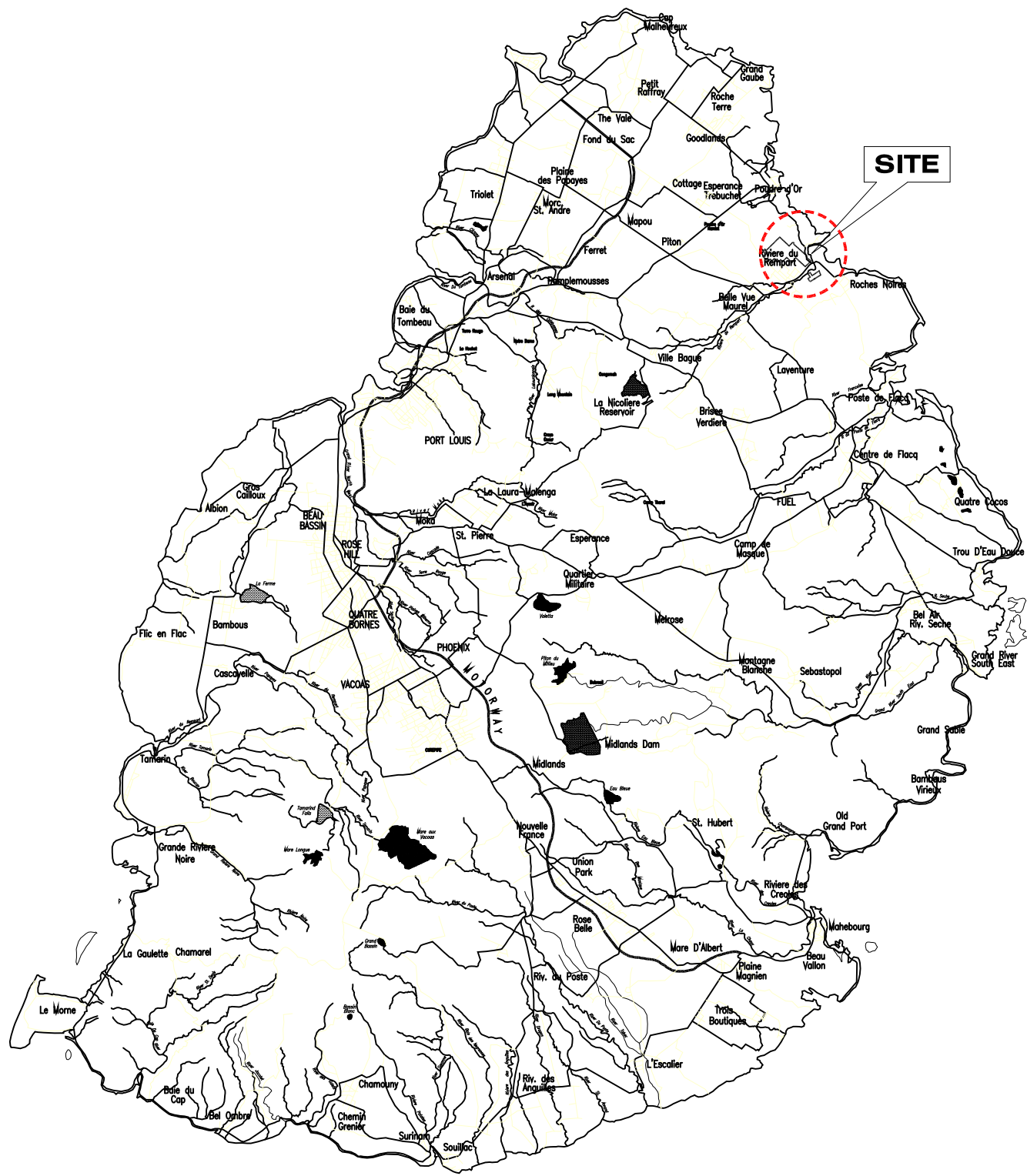
**LOT B****Bill No. 4 : Supply, Installation, Testing and Commissioning of Centrifugal Surface pumpset to replace Pump No. 3 at Providence Pumping Station.**

Item	Description	Unit	Qty	Rate (MUR)	Amount (MUR)
<b>1</b>	<b>Supply, Installation, Testing and Commissioning of Centrifugal Surface pumpset to replace Pump No. 3 at Providence Pumping Station.</b>				
1.1	Disconnect all electrical connections from the main electrical Control Panel to the pumpset which needs to be replaced.	Sum	1		
1.2	Disconnect pumpset No. 3 from the existing inlet and outlet pipeworks.	Sum	1		
1.3	Dismantle pumpset No. 3 and deliver same and including all the unserviceable items to our store at Plaine des Papayes from the Providence pumping Station.	Sum.	1		
1.4	Perform electrical check and testing to the existing control panel, capacitor bank, lightning protection, power surge protection, dry running protection system, earthing system before connecting to the new pumpset.				
	Report on the rehabilitation work that needs to be done, if any.	Sum.	1		
1.5	Supply, install, test and commission of 1 No. electric <b>vertical</b> type centrifugal surface pumpset of duty point 360 m <sup>3</sup> /hr at a total manometric head of 75 m, 150 Kw, complete with electric motor as specified to replace Pump No. 1 at Providence Pumping Station.	No.	1		
	Bidder to include for all the transition pieces, pipe modification works, fittings and accessories.				
1.6	All associated civil and metal fabrication works to be undertaken during the installation of pump such as refurbishment and casting of concrete support block, demolition of thrust block and upgrading work on the floor of the pump room to accommodate the new pumpset.	Sum	1		
	<b>TOTAL C/F</b>				

Item	Description	Unit	Qty	Rate (MUR)	Amount (MUR)
	<b>TOTAL B/F</b>				
1.7	Supply the following spares parts as specified for the pumpset:				
	(i) Impeller	No.	1		
	(ii) Soft Packing	Roll	1		
	(iii) Gasket Kit and O-Rings	Set.	2		
	(iv) Neck Ring (if applicable)	No.	1		
	(v) Bearing (DE/NDE) for Pump	Set.	2		
	(vi) Bearing (DE/NDE) for Motor	Set.	2		
1.8	Submit progress photograph as specified	Lot	1		
1.09	Submit O&M manuals, workshop manuals as specified.	Lot	1		
1.10	Submit As-Built drawing as specified.	Lot	1		
1.11	Provision for replacement of existing gate valve, non-return, bellow-couplings, flanged adaptors, footvalves, etc...	Prov. Sum			125,000
	<b>TOTAL C/F TO BILL No. 4 OF SUMMARY OF BOQ</b>				



# REPUBLIC OF MAURITIUS



N.T.S



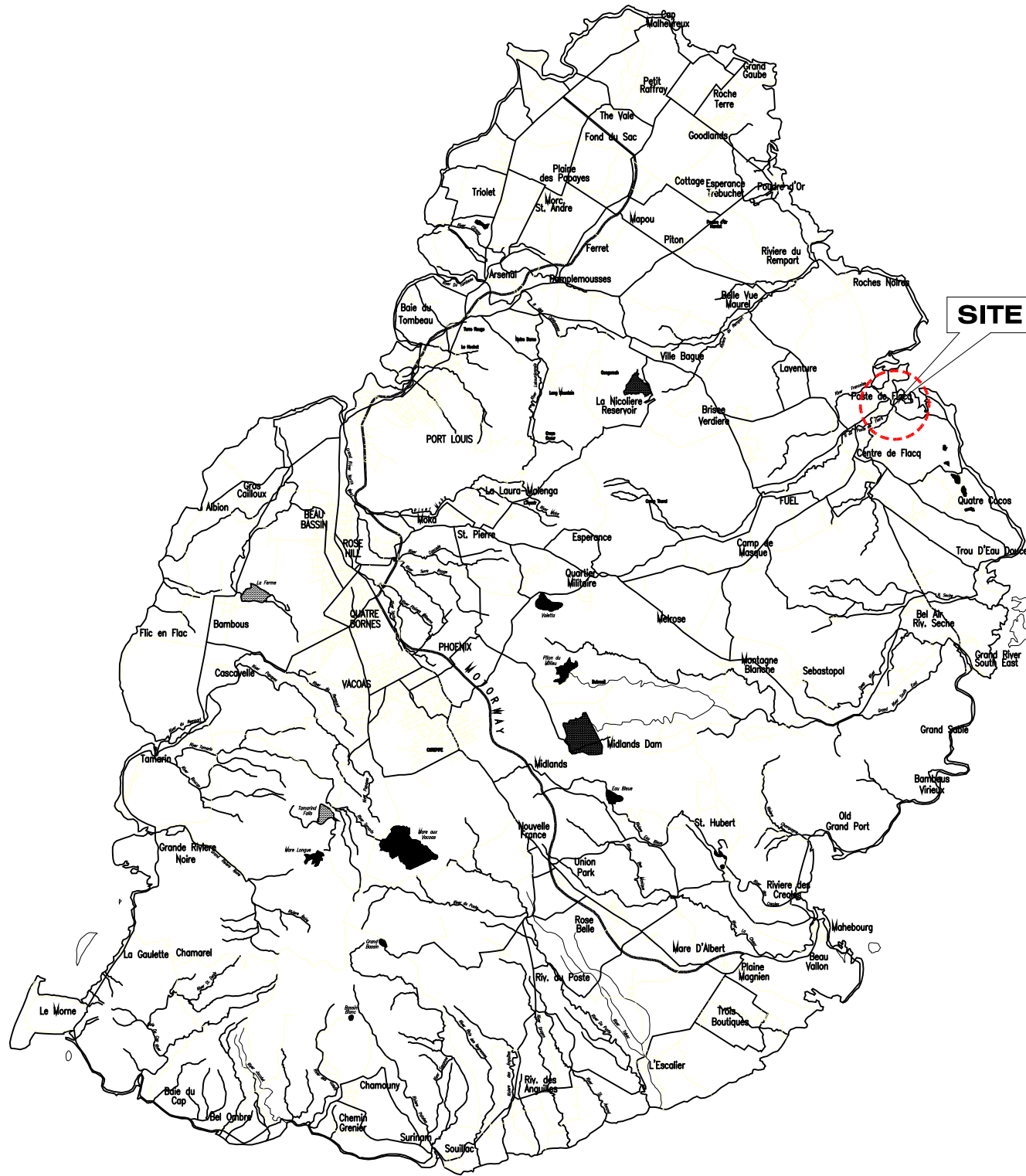
**IRRIGATION AUTHORITY**  
 SUPPLY, INSTALLATION, TESTING AND  
 COMMISSIONING OF CENTRIFUGAL SURFACE PUMPSET  
 PROCUREMENT REFERENCE NO: OMD/PUMPSET/08/23

TITLE	CONTEXT / LOCATION PLAN AT RIVIERE DU REMPART PUMPING STATION	
DRG No.	<b>OMD/PUMPSET/08/23/01</b>	ISSUE

MARK	REVISION	DATE	DRAWN : W.R (S.T.D.O)	DESIGNED : B.S	PROJECT
			SCALE : 1:25,000	SURVEYED :	
			DATE : March 2023	CHECKED : B.S	
			FILE NAME : Context Location Plan ...	APPROVED : B.S	



# REPUBLIC OF MAURITIUS



**SITE**

**N.T.S**



**Providence Pumping Station**

**IRRIGATION AUTHORITY**  
 SUPPLY, INSTALLATION, TESTING AND  
 COMMISSIONING OF CENTRIFUGAL SURFACE PUMPSET  
 PROCUREMENT REFERENCE NO: OMD/PUMPSET/08/23

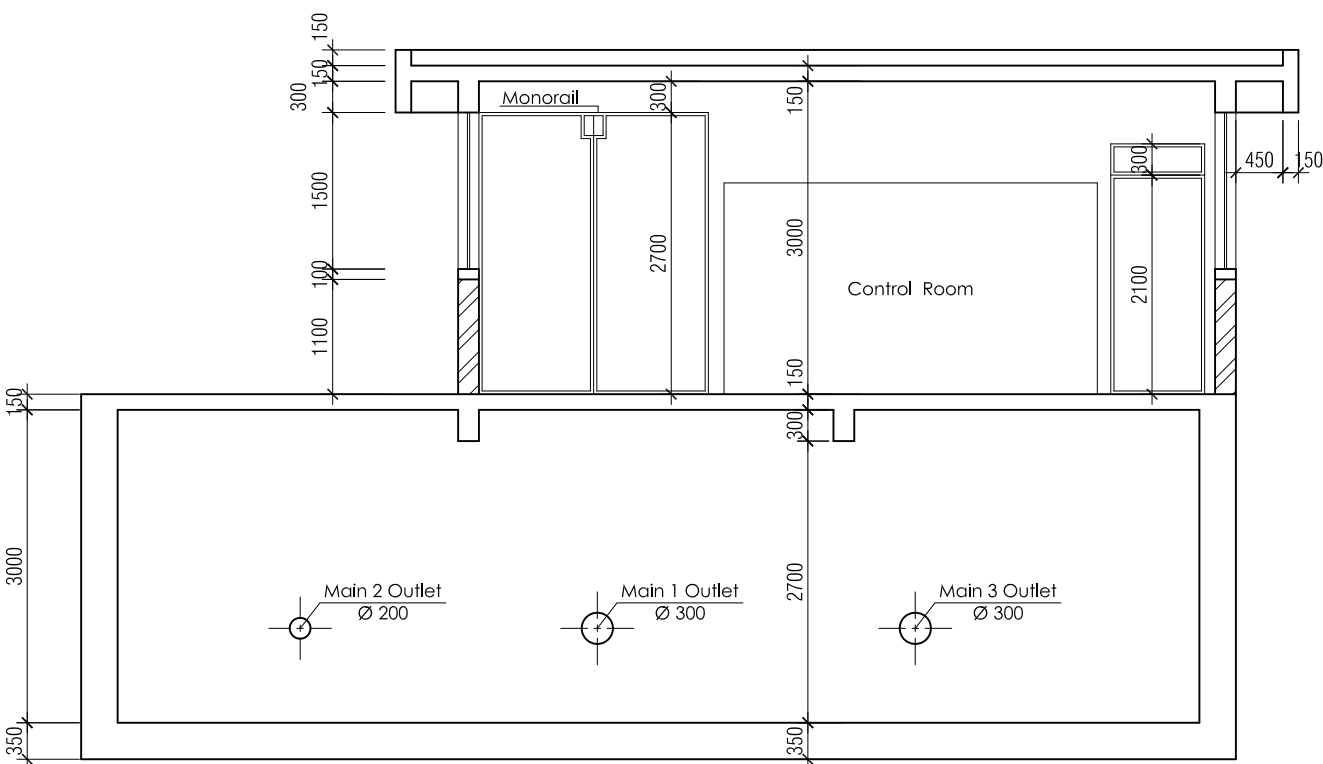
TITLE	CONTEXT / LOCATION PLAN AT PROVIDENCE PUMPING STATION	
DRG No.	<b>OMD/PUMPSET/08/23/02</b>	ISSUE

MARK	REVISION	DATE	DRAWN : W.R (S.T.D.O)	DESIGNED : B.S	PROJECT
			SCALE : 1:25,000	SURVEYED :	
			DATE : March 2023	CHECKED : B.S	
			FILE NAME : Context Location Plan ...	APPROVED : B.S	

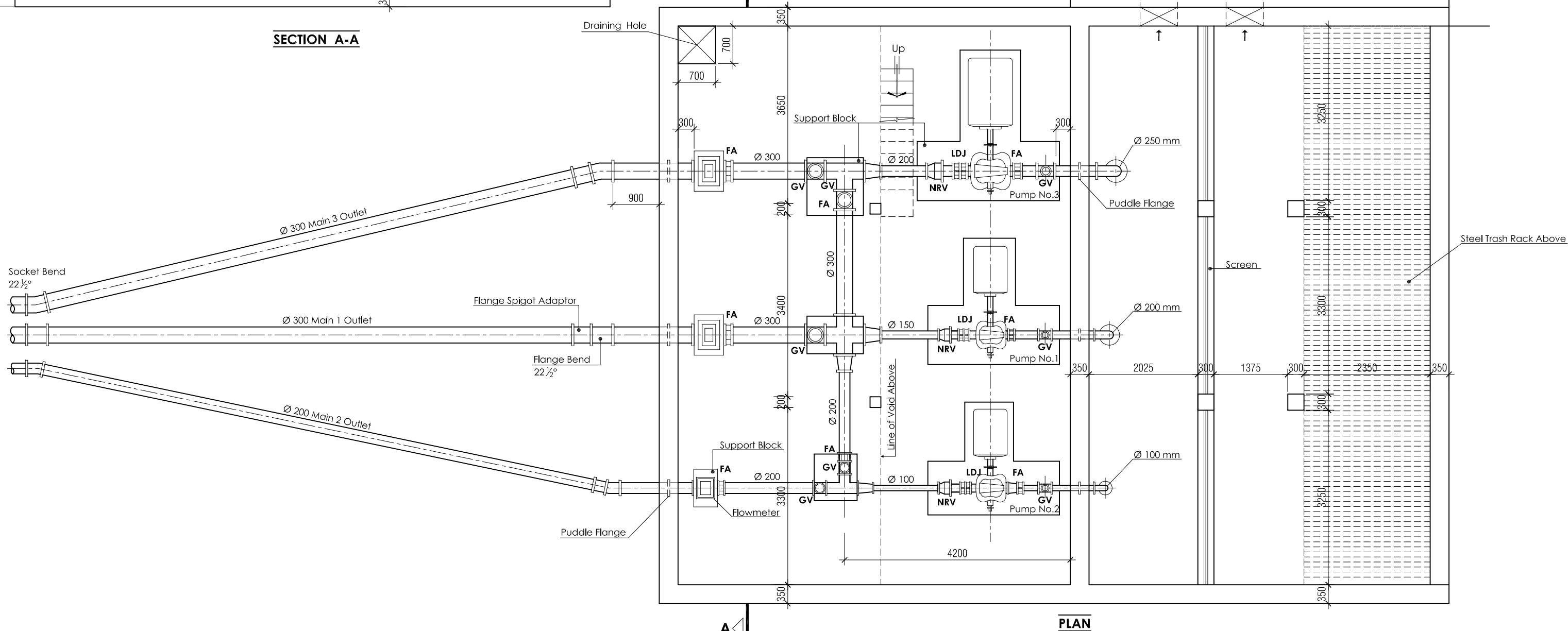


**LEGEND**

- LDJ** Lock Dismantling Joint
- FA** Flange Adaptor
- GV** Gate Valve
- NRV** Non-Return Valve



**SECTION A-A**



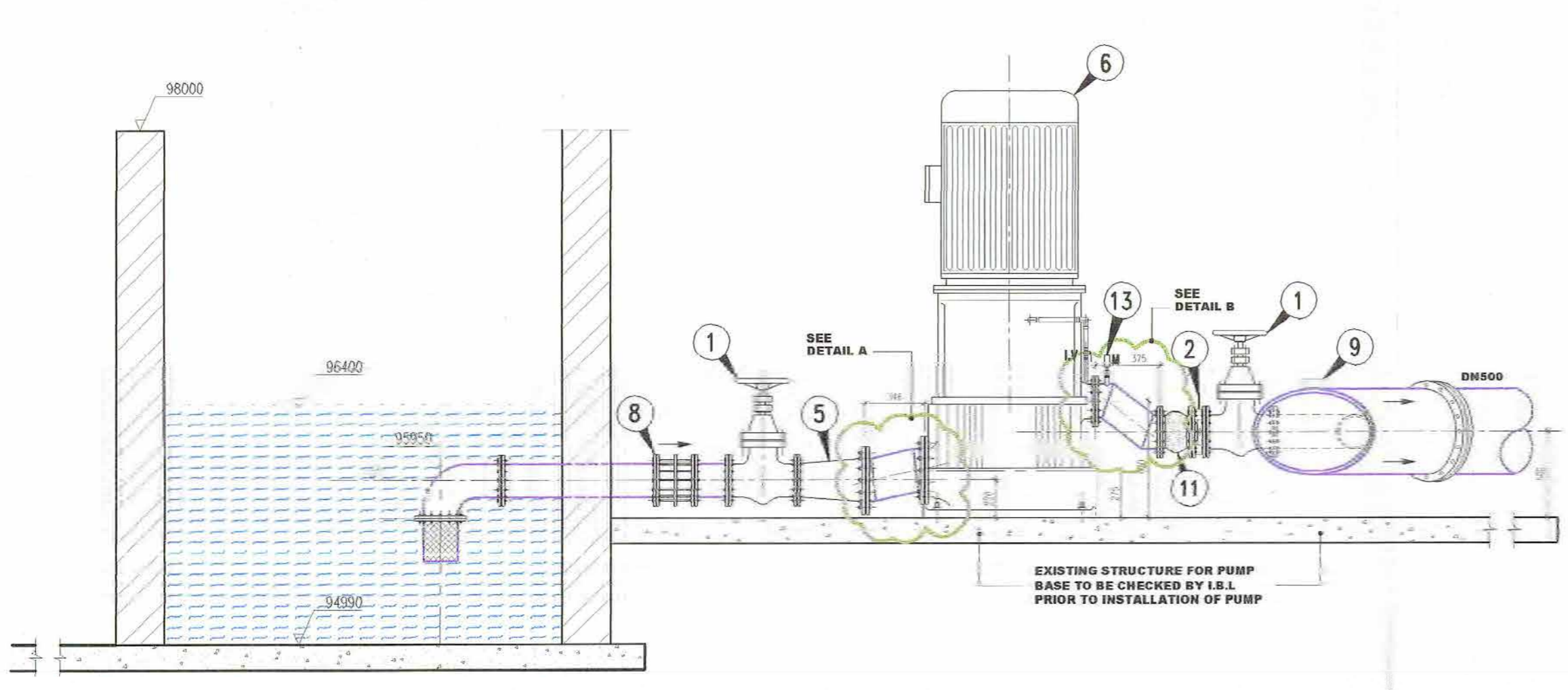
**PLAN**

MARK	REVISION	DATE	DRAWN : W.R (S.T.D.O)	DESIGNED : B.S
			SCALE : 1:75	SURVEYED :
			DATE : March 2023	CHECKED : B.S
			FILE NAME : Riv du Rem...	APPROVED : B.S

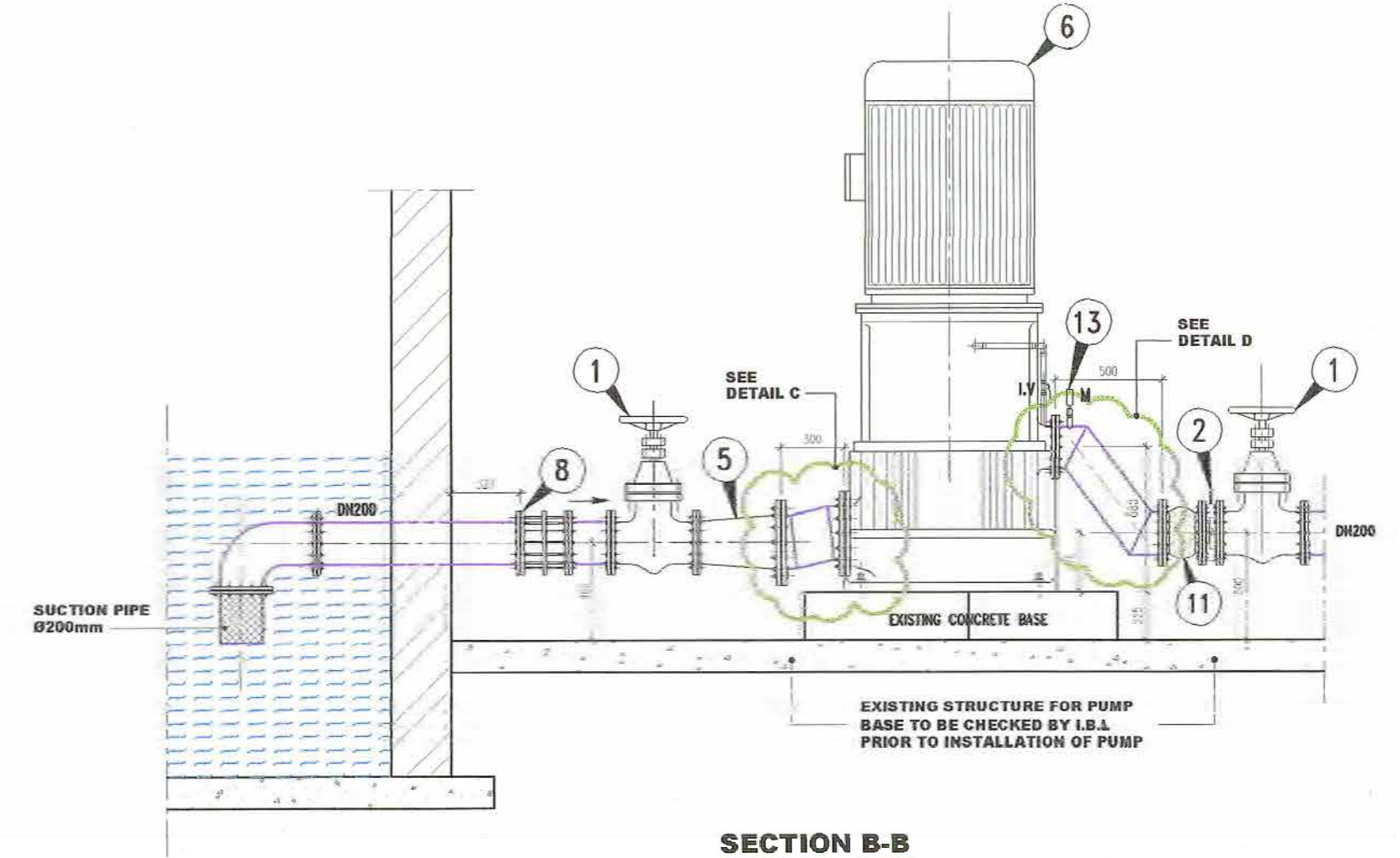
**IRRIGATION AUTHORITY**  
 SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF CENTRIFUGAL SURFACE PUMPSET  
PROCUREMENT REFERENCE NO: OMD/PUMPSET/08/23

TITLE	<b>Existing Pumping Station Layout at Rivière du Rempart</b>	
DRG No.	<b>OMD/PUMPSET/08/23/03</b>	ISSUE

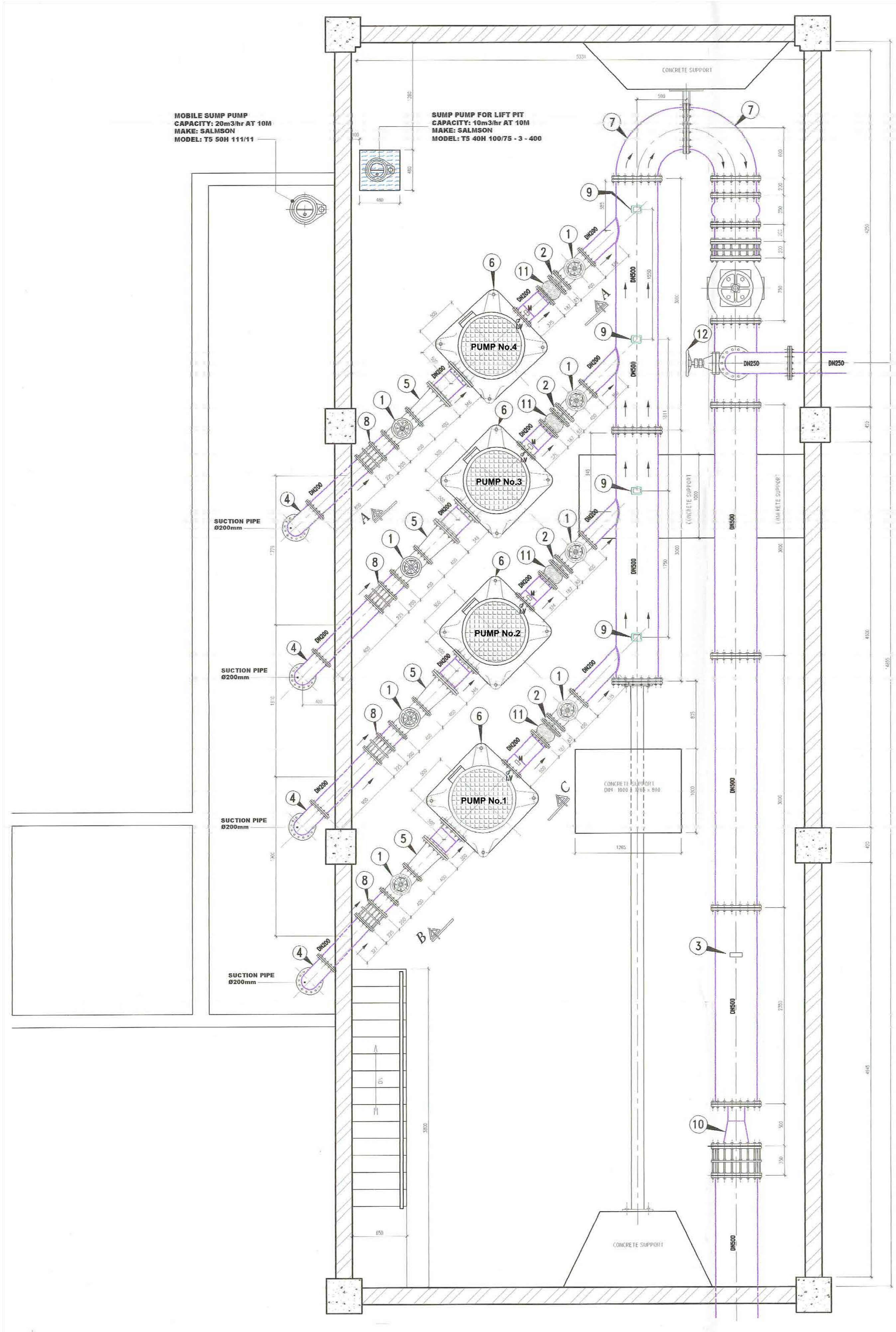
Project		Table				
SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF CENTRIFUGAL SURFACE PUMPSET		Existing Pumping Station Layout at Providence				
PROCUREMENT REFERENCE NO: OMD/PUMPSET/08/23		Drig No.	File Name	Issue		
		OMD/PUMPSET/08/23/04	Supply Inst...			
Designed by	Checked by	Approved by	Drawn by	Date	Scale	
B.S	B.S	B.S	W.R	MAR 2023	N.T.S	
Rev	Revision note				Date	Done By
1						



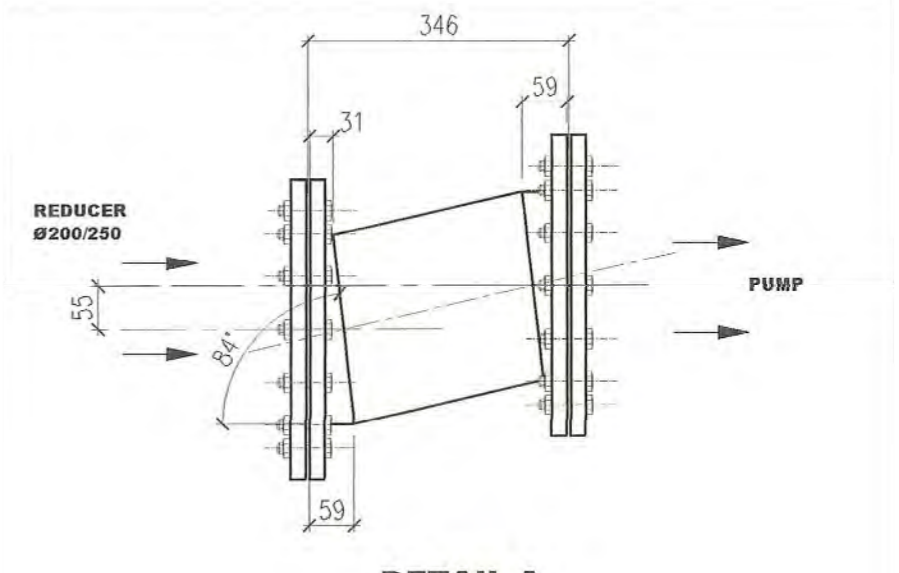
**SECTION A-A**  
SCALE 1:30



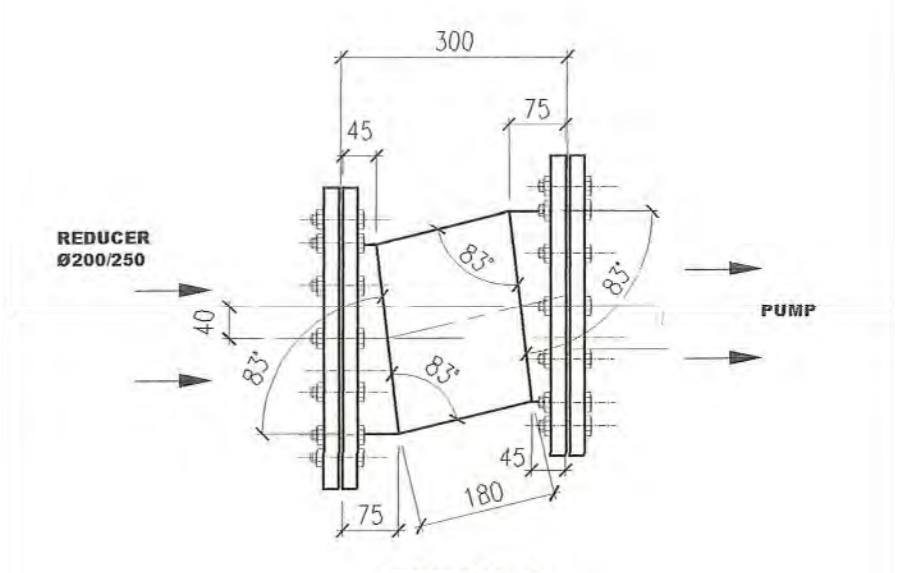
**SECTION B-B**  
SCALE 1:30



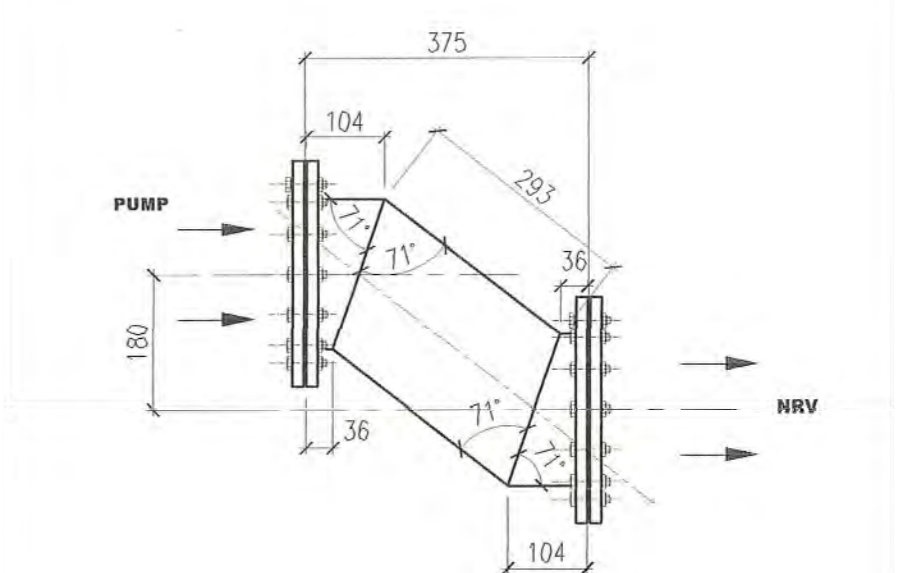
**PLAN VIEW @ 2320mm HIGH LEVEL**



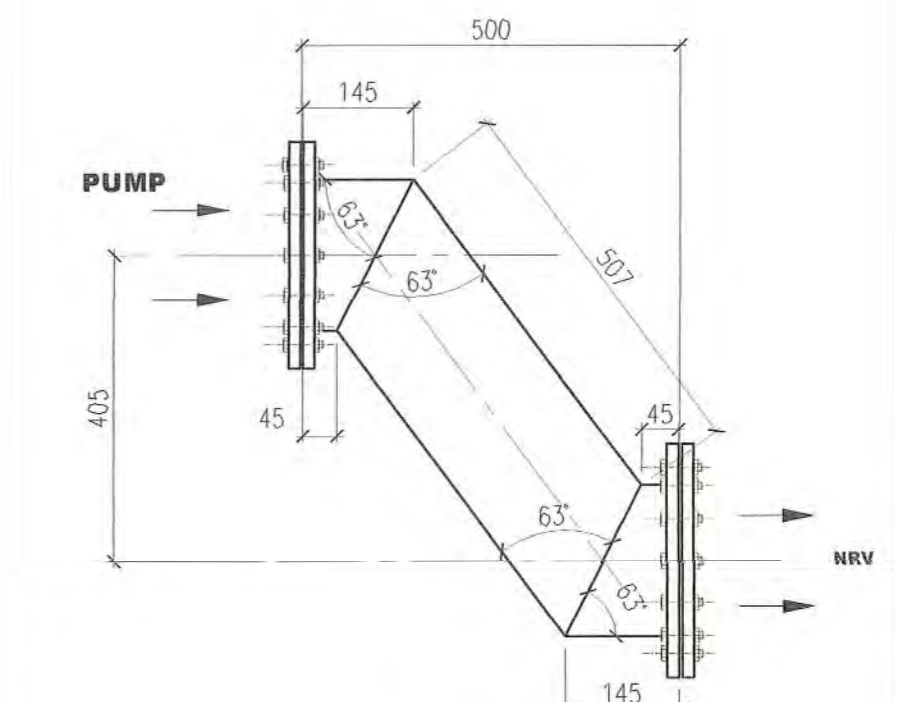
**DETAIL A**  
SCALE 1:10  
\*CONNECTION PIECE Ø250mm ON SUCTION SIDE FROM REDUCER TO PUMP\*



**DETAIL C**  
SCALE 1:10  
\*CONNECTION PIECE Ø250mm DN SUCTION SIDE FROM REDUCER TO PUMP\*



**DETAIL B**  
SCALE 1:10  
\*CONNECTION PIECE Ø200mm ON DELIVERY SIDE FROM PUMP TO NRV\*



**DETAIL D**  
SCALE 1:10  
\*CONNECTION PIECE Ø200mm ON DELIVERY SIDE FROM PUMP TO NRV\*

LEGEND	
1	ISOLATING VALVE - DN 200
2	NON RETURN VALVE - DN 200 SANDWICH TYPE
3	PRESSURE INDICATOR
4	ELBOW - DN 200
5	REDUCER - 200/250
6	PUMP RKBV 200/37.2 STG. CAPACITY: 380 m <sup>3</sup> /hr AT 75 M MODEL: RKB 200/37
7	ELBOW - DN 500
8	ASSEMBLY JOINT DN 200
9	PRESSURE SWITCH
10	EXISTING FLOW METER
11	FLEXIBLE CONNECTION - DN 200
12	ISOLATING VALVE - DN 250
13	MANOMETER (0-10 bar)