C1.1: Form of Offer & Acceptance

Offer

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract for the procurement of:

Supply And Install Fresh Water For Fire System At Island View Terminal 1.

The tenderer, identified in the Offer signature block, has examined the documents listed in the Tender Data and addenda thereto as listed in the Returnable Schedules, and by submitting this Offer has accepted the Conditions of Tender.

By the representative of the tenderer, deemed to be duly authorised, signing this part of this Form of Offer and Acceptance the tenderer offers to perform all of the obligations and liabilities of the *Contractor* under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the *conditions of contract* identified in the Contract Data.

The offered total of the Prices exclusive of VAT is	**R**
Value Added Tax @ 15% is	**R**
The offered total of the Prices inclusive of VAT is	**R**
(in words)	

This Offer may be accepted by the Employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document including the Schedule of Deviations (if any) to the tenderer before the end of the period of validity stated in the Tender Data, or other period as agreed, whereupon the tenderer becomes the party named as the *Contractor* in the *conditions of contract* identified in the Contract Data.

Signature(s) .....

Name(s) .....

Capacity .....

For the tenderer: .....

(Insert name and address of organisation)

Name & signature of witness ..... Date .....

Tenderer's CIDB registration number: .....

Acceptance

By signing this part of this Form of Offer and Acceptance, the *Employer* identified below accepts the tenderer's Offer. In consideration thereof, the *Employer* shall pay the *Contractor* the amount due in accordance with the *conditions of contract* identified in the Contract Data. Acceptance of the tenderer's Offer shall form an agreement between the *Employer* and the tenderer upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract, are contained in:

Part C1	Agreements and Contract Data, (which includes this Form of Offer and Acceptance)
Part C2	Pricing Data
Part C3	Scope of Work: Works Information
Part C4	Site Information

and drawings and documents (or parts thereof), which may be incorporated by reference into the above listed Parts.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Returnable Schedules as well as any changes to the terms of the Offer agreed by the tenderer and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Form of Offer and Acceptance. No amendments to or deviations from said documents are valid unless contained in this Schedule.

The tenderer shall within two weeks of receiving a completed copy of this agreement, including the Schedule of Deviations (if any), contact the Employer's agent (whose details are given in the Contract Data) to arrange the delivery of any securities, bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the *conditions of contract* identified in the Contract Data at, or just after, the date this agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one fully completed original copy of this document, including the Schedule of Deviations (if any).

Unless the tenderer (now *Contractor*) within five working days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the Parties.

Signature(s)		
Name(s)		
Capacity		
for the Employer	Transnet SOC Ltd	
	(Insert name and address of organisation)	
Name & signature of witness		Date

Schedule of Deviations

Note:

1. To be completed by the Employer prior to award of contract. This part of the Offer & Acceptance would not be required if the contract has been developed by negotiation between the Parties and is not the result of a process of competitive tendering.
2. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender.
3. A tenderer's covering letter must not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid be the subject of agreement reached during the process of Offer and Acceptance, the outcome of such agreement shall be recorded here and the final draft of the contract documents shall be revised to incorporate the effect of it.

No.	Subject	Details
1		
2		
3		

By the duly authorised representatives signing this Schedule of Deviations below, the Employer and the tenderer agree to and accept this Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules, as well as any confirmation, clarification or changes to the terms of the Offer agreed by the tenderer and the Employer during this process of Offer and Acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the tenderer of a completed signed copy of this Form shall have any meaning or effect in the contract between the parties arising from this Agreement.

	For the tenderer:	**For the Employer**
Signature	.....	.....
Name	.....	.....
Capacity	.....	.....
On behalf of	*(Insert name and address of organisation)*	Transnet SOC Ltd
Name & signature of witness	.....	.....
Date	.....	.....

C1.2 Contract Data

Part one - Data provided by the *Employer*

Clause	Statement	Data
1	**General**	
	The *conditions of contract* are the core clauses and the clauses for main Option	
		B: Priced contract with bill of quantities
	dispute resolution Option	**W1: Dispute resolution procedure**
	and secondary Options	
		X2 Changes in the law
		X3: Multiple currencies
		X7: Delay damages
		X18: Limitation of liability
		Z: *Additional conditions of contract*
	of the NEC3 Engineering and Construction Contract June 2005 (amended June 2006 and April 2013)	
10.1	The *Employer* is:	**Transnet SOC Ltd (Registration No. 1990/000900/30)**
	Address	Registered address: **Transnet Corporate Centre** **138 Eloff Street** **Braamfontein** **Johannesburg** **2000**
	Having elected its Contractual Address for the purposes of this contract as:	**Transnet Pipelines** **202 Anton Lembede** **Durban** **4001**

10.1	The *Project Manager* is: (Name)	**Sello Molekoa**
	Address	**202 Anton Lembede, Durban**
	Tel	**TBA**
	e-mail	**TBA**
11.2(13)	The *works* are	**SUPPLY AND INSTALL FRESH WATER FOR FIRE SYSTEM AT ISLAND VIEW TERMINAL 1.**
11.2(14)	The following matters will be included in the Risk Register	**None**
11.2(15)	The *boundaries of the site* are	**As stated in Part C4.1."Description of the Site and it surroundings"**
11.2(16)	The Site Information is in	**Part C4**
11.2(19)	The Works Information is in	**Part C3**
12.2	The *law of the contract* is the law of	**the Republic of South Africa subject to the jurisdiction of the Courts of South Africa.**
13.1	The *language of this contract* is	**English**
13.3	The *period for reply* is	**1 week**
2	**The *Contractor*'s main responsibilities**	**No additional data is required for this section of the *conditions of contract*.**
3	**Time**	
11.2(3)	The *completion date* for the whole of the *works* is	**30 April 2024**
30.1	The *access dates* are	**Part of the Site** **Date** **1 TBA**
31.1	The *Contractor* is to submit a first programme for acceptance within	**2 weeks of the Contract Date.**
31.2	The *starting date* is	**06 November 2023**
32.2	The *Contractor* submits revised programmes at intervals no longer than	**2 weeks.**

35.1	The *Employer* is not willing to take over the *works* before the Completion Date.	
4	**Testing and Defects**	
42.2	The *defects date* is	**26 (twenty six) weeks after Completion of the whole of the *works*.**
43.2	The *defect correction period* is	**2 weeks**
5	**Payment**	
50.1	The *assessment interval* is monthly on the	**25th (twenty fifth) day of each successive month.**
51.1	The *currency of this contract* is the	**South African Rand.**
51.2	The period within which payments are made is	**Payment will be effected on or before the last day of the month following the month during which a valid Tax Invoice and Statement were received.**
51.4	The *interest rate* is	**the prime lending rate of Standard Bank of South Africa.**
6	**Compensation events**	
60.1(13)	The *weather measurements* to be recorded for each calendar month are,	**the cumulative rainfall (mm)** **the number of days with rainfall more than 10 mm** **the number of days with minimum air temperature less than 0 degrees Celsius** **the number of days with snow lying at 08:00 hours South African Time**
	The place where weather is to be recorded (on the Site) is:	**The *Contractor*'s Site establishment area**

	The *weather data* are the records of past *weather measurements* for each calendar month which were recorded at:	**The closest weather station to the Contractor's Site establishment area**
	and which are available from:	**South African Weather Service 012 367 6023 or info3@weathersa.co.za.**
7	**Title**	**No additional data is required for this section of the *conditions of contract*.**
8	**Risks and insurance**	
84.1	The *Employer* provides these insurances from the Insurance Table	
	1 Insurance against:	**Loss of or damage to the *works*, Plant and Materials is as stated in the Insurance policy for Contract Works/ Public Liability.**
	Cover / indemnity:	**to the extent as stated in the insurance policy for Contract Works / Public Liability**
	The deductibles are:	**as stated in the insurance policy for Contract Works / Public Liability**
	2 Insurance against:	**Loss of or damage to property (except the *works*, Plant and Materials & Equipment) and liability for bodily injury to or death of a person (not an employee of the *Contractor)* arising out of or in connection with the performance of the Contract as stated in the insurance policy for Contract Works / Public Liability**
	Cover / indemnity	**Is to the extent as stated in the insurance policy for Contract Works / Public Liability**
	The deductibles are	**as stated in the insurance policy for Contract Works / Public Liability**
	3 Insurance against:	**Loss of or damage to Equipment (Temporary Works only) as stated in the insurance policy for contract Works and Public Liability**

		Cover / indemnity	**Is to the extent as stated in the insurance policy for Contract Works / Public Liability**
		The deductibles are:	**As stated in the insurance policy for Contract Works / Public Liability**
	4	Insurance against:	**Contract Works SASRIA insurance subject to the terms, exceptions and conditions of the SASRIA coupon**
		Cover / indemnity	**Cover / indemnity is to the extent provided by the SASRIA coupon**
		The deductibles are	**The deductibles are, in respect of each and every theft claim, 0,1% of the contract value subject to a minimum of R2,500 and a maximum of R25,000.**
		Note:	**The deductibles for the insurance as stated above are listed in the document titled "Certificate of Insurance: Transnet (SOC) Limited Principal Controlled Insurance."**
84.1		The minimum limit of indemnity for insurance in respect of death of or bodily injury to employees of the *Contractor* arising out of and in the course of their employment in connection with this contract for any one event is	**The *Contractor* must comply at a minimum with the provisions of the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 as amended.**
		The *Contractor* provides these additional Insurances	**1 Where the contract requires that the design of any part of the *works* shall be provided by the *Contractor* the *Contractor* shall satisfy the *Employer* that professional indemnity insurance cover in connection therewith has been affected**

2 **Where the contract involves manufacture, and/or fabrication of Plant & Materials, components or other goods to be incorporated into the *works* at premises other than the site, the *Contractor* shall satisfy the *Employer* that such plant & materials, components or other goods for incorporation in the *works* are adequately insured during manufacture and/or fabrication and transportation to the site.**

3 **Should the *Employer* have an insurable interest in such items during manufacture, and/or fabrication, such interest shall be noted by endorsement to the *Contractor's* policies of insurance as well as those of any sub-contractor**

4 **Motor Vehicle Liability Insurance comprising (as a minimum) "Balance of Third Party" Risks including Passenger and Unauthorised Passenger Liability indemnity with a minimum indemnity limit of R 5 000 000**

5 **Protection and Indemnity Insurance in respect of all marine craft or vessels utilised in performance of the Works extended for Specialist Operations with a minimum indemnity limit of R 20,000,000**

6 **The insurance coverage referred to in 1, 2, 3, 4, and 5 above shall be obtained from an insurer(s) in terms of an insurance policy approved by the *Employer*. The *Contractor* shall arrange with the insurer to submit to the *Project Manager* the original and the duplicate original of the policy or policies of insurance and the receipts for payment of current premiums, together with a certificate from the insurer or insurance broker concerned, confirming that the policy or policies provide the full coverage as required. The original policy will be returned to the *Contractor.***

84.2	The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the works, Plant, Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the *Contractor*) caused by activity in connection with this contract for any one event is	**Whatever the *Contractor* requires in addition to the amount of insurance taken out by the *Employer* for the same risk.**
84.2	The insurance against loss of or damage to the works, Plant and Materials as stated in the insurance policy for contract works and public liability selected from:	**Principal Controlled Insurance policy for Contract**
9	**Termination**	**There is no additional Contract Data required for this section of the *conditions of contract*.**
10	**Data for main Option clause**	
B	**Priced contract with Bill of Quantities**	**No additional data is required for this Option.**
60.6	The *method of measurement* is	**The Bill of Quantities have been measured in accordance with SANS 1200 unless indicated otherwise.**
11	**Data for Option W1**	
W1.1	The *Adjudicator* is	**Both parties will agree as and when a dispute arises. If the parties cannot reach an agreement on the *Adjudicator*, the Chairman of the Association of Arbitrators will appoint an *Adjudicator*.**
W1.2(3)	The *Adjudicator nominating body* is:	**The Chairman of the Association of Arbitrators (Southern Africa)**
	If no *Adjudicator nominating body* is entered, it is:	**the Association of Arbitrators (Southern Africa)**
W1.4(2)	The *tribunal* is:	**Arbitration**

W1.4(5)	The *arbitration procedure* is	**The Rules for the Conduct of Arbitrations of the Association of Arbitrators (Southern Africa)**
	The place where arbitration is to be held is	**Durban, South Africa**
	The person or organisation who will choose an arbitrator - if the Parties cannot agree a choice or - if the arbitration procedure does not state who selects an arbitrator, is	**The Chairman of the Association of Arbitrators (Southern Africa)**
12	**Data for secondary Option clauses**	
X2	**Changes in the law**	**No additional data is required for this Option**
X7	**Delay damages**	
X7.1	Delay damages for Completion of the whole of the *works* are	**R500 per day**
X18	**Limitation of liability**	

X18.1	The *Contractor*'s liability to the *Employer* for indirect or consequential loss is limited to:	**Nil**
X18.2	For any one event, the *Contractor's* liability to the *Employer* for loss of or damage to the *Employer's* property is limited to:	**The deductible of the relevant insurance policy**
X18.3	The *Contractor's* liability for Defects due to his design which are not listed on the Defects Certificate is limited to:	**The cost of correcting the Defect**
X18.4	The *Contractor's* total liability to the *Employer* for all matters arising under or in connection with this contract, other than excluded matters, is limited to:	**The Total of the Prices**
X18.5	The *end of liability date* is	**2 years after Completion of the whole of the *works***

Z	***Additional conditions of contract* are*:***

Z1 Additional clauses relating to Joint Venture

Z1.1 Insert the additional core clause 27.5

27.5. In the instance that the *Contractor* is a joint venture, the *Contractor* shall provide the *Employer* with a certified copy of its signed joint venture agreement, and in the instance that the joint venture is an 'Incorporated Joint Venture,' the Memorandum of Incorporation, within 4 (four) weeks of the Contract Date.
The Joint Venture agreement shall contain but not be limited to the following:

- **A brief description of the Contract and the Deliverables;**
- **The name, physical address, communications addresses and domicilium citandi et executandi of each of the constituents and of the Joint Venture;**
- **The constituent's interests;**
- **A schedule of the insurance policies, sureties, indemnities and guarantees which must be taken out by the Joint Venture and by the individual constituents;**
- **Details of an internal dispute resolution procedure;**
- **Written confirmation by all of the constituents:**
  - **i. of their joint and several liabilities to the *Employer* to Provide the Works;**
  - **ii. identification of the lead partner in the joint venture confirming the authority of the lead partner to bind the joint venture through the *Contractor's* representative;**
  - **iii. Identification of the roles and responsibilities of the**

constituents to provide the Works.

- **Financial requirements for the Joint Venture:**

iv. the working capital requirements for the Joint Venture and the extent to which and manner whereby this will be provided and/or guaranteed by the constituents from time to time;

v. the names of the auditors and others, if any, who will provide auditing and accounting services to the Joint Venture.

Z1.2		**Insert additional core clause 27.6** **27.6. The *Contractor* shall not alter its composition or legal status of the Joint Venture without the prior approval of the *Employer.***
Z2	**Additional obligations in respect of Termination**	
Z2.1		**The following will be included under core clause 91.1:** **In the second main bullet, after the word 'partnership' add 'joint venture whether incorporate or otherwise (including any constituent of the joint venture)' and** **Under the second main bullet, insert the following additional bullets after the last sub-bullet:** • **commenced business rescue proceedings (R22)** • **repudiated this Contract (R23)**

Z2.2	**Termination Table**	**The following will be included under core clause 90.2 Termination Table as follows:** **Amend "A reason other than R1 – R21" to "A reason other than R1 – R23"**
Z2.3		**Amend "R1 – R15 or R18" to "R1 – R15, R18, R22 or R23."**
Z3	**Right Reserved by the *Employer* to Conduct Vetting through SSA**	
Z3.1		**The *Employer* reserves the right to conduct vetting through State Security Agency (SSA) for security clearances of any *Contractor* who has access to National Key Points for the following without limitations:** **1. Confidential – this clearance is based on any information which may be used by malicious, opposing or hostile elements to harm the objectives and functions of an organ of state.** **2. Secret – clearance is based on any information which may be used by malicious, opposing or hostile elements to disrupt the objectives and functions of an organ of state.** **3. Top Secret – this clearance is based on information which may be used by malicious, opposing or hostile elements to neutralise the objectives and functions of an organ of state.**
Z4	**Additional Clause Relating to Collusion in the Construction Industry**	
Z4.1		**The contract award is made without prejudice to any rights the *Employer* may have to take appropriate action later with regard to any declared tender rigging including blacklisting.**

Z5	**Protection of Personal Information Act**	
Z5.1		**The *Employer* and the *Contractor* are required to process information obtained for the duration of the Agreement in a manner that is aligned to the Protection of Personal Information Act.**

C1.2 Contract Data

Part two - Data provided by the *Contractor*

The tendering *Contractor* is advised to read both the NEC3 Engineering and Construction Contract - June 2005 (with amendments June 2006 and April 2013) and the relevant parts of its Guidance Notes (ECC3-GN) in order to understand the implications of this Data which the tenderer is required to complete. An example of the completed Data is provided on pages 156 to 158 of the ECC3 Guidance Notes.

Completion of the data in full, according to Options chosen, is essential to create a complete contract.

Clause	Statement	Data
10.1	The *Contractor* is (Name):	
	Address	
	Tel No.	
	Fax No.	
11.2(8)	The *direct fee percentage* is	**%**
	The *subcontracted fee percentage* is	**%**
11.2(18)	The *working areas* are the Site and	
24.1	The *Contractor's* key persons are:	
	1 Name:	
	Job:	
	Responsibilities:	
	Qualifications:	
	Experience:	
	2 Name:	
	Job	
	Responsibilities:	
	Qualifications:	
	Experience:	

		CV's (and further key persons data including CVs) are appended to Tender Schedule entitled .		
11.2(14)	The following matters will be included in the Risk Register			
31.1	The programme identified in the Contract Data is			
B	**Priced contract with bill of quantities**			
11.2(21)	The *bill of quantities* is in			
11.2(31)	The tendered total of the Prices is	(in figures) (in words), excluding VAT		
	Data for Schedules of Cost Components	*Note "SCC" means Schedule of Cost Components starting on page 60 of ECC, and "SSCC" means Shorter Schedule of Cost Components starting on page 63 of ECC.*		
B	**Priced contract with bill of quantities**	**Data for the Shorter Schedule of Cost Components**		
41 in SSCC	The percentage for people overheads is:	**%**		
21 in SSCC	The published list of Equipment is the last edition of the list published by			
	The percentage for adjustment for Equipment in the published list is	**%** (state plus or minus)		
22 in SSCC	The rates of other Equipment are:	**Equipment**	**Size or capacity**	**Rate**

61 in SSCC	The hourly rates for Defined Cost of design outside the Working Areas are	**Category of employee**	**Hourly rate**
62 in SSCC	The percentage for design overheads is	**%**	
63 in SSCC	The categories of design employees whose travelling expenses to and from the Working Areas are included in Defined Cost are:		

PART 2: PRICING DATA

Document reference	Title	No of pages
C2.1	Pricing instructions: Option A	2
C2.2	Activity Schedule	2

C2.1 Pricing Instructions: Option A

1. The *conditions of contract*

1.1. How the contract prices work and assesses it for progress payments

Clause 11 in NEC3 Engineering and Construction Contract, June 2005, (with amendments June 2006 and April 2013) (ECC) Option A states:

Identified and defined terms	11 11.2	(20) The Activity Schedule is the *activity schedule* unless later changed in accordance with this contract. (22) Defined Cost is the cost of the components in the Shorter Schedule of Cost Components whether work is subcontracted or not excluding the cost of preparing quotations for compensation events. (27) The Price for Work Done to Date is the total of the Prices for • each group of completed activities and • each completed activity which is not in a group A completed activity is one which is without Defects which would either delay or be covered by immediately following work. (30) The Prices are the lump sums for each of the activities on the Activity Schedule unless later changed in accordance with this contract.

1.2. Measurement and Payment

1.2.1 The Activity Schedule provides the basis of all valuations of the Price for Work Done to Date, payments in multiple currencies, price adjustments for inflation and general progress monitoring.

1.2.2 The amount due at each assessment date is based on **completed activities and/or milestones** as indicated on the Activity Schedule.

1.2.3 The Activity Schedule work breakdown structure provided by the *Contractor* is based on the Activity Schedule provided by the *Employer*. The activities listed by the *Employer* are the minimum activities acceptable and identify the specific activities which are required to achieve Completion. The activity schedule work breakdown structure is compiled to the satisfaction of the *Project Manager* with any additions and/or amendments deemed necessary.

1.2.4 The *Contractor's* detailed Activity Schedule summates back to the Activity Schedule provided by the *Employer* and is in sufficient detail to monitor completion of activities related to the Accepted Programme in order that payment of completed activities may be assessed.

1.2.5 The short descriptions in the Activity Schedule are for identification purposes only. All work described in the Works Information is deemed included in the activities.

1.2.6 The Activity Schedule is integrated with the Prices, Accepted Programme and where required the forecast rate of payment schedule.

1.2.7 Activities in multiple currencies are separately identified on both the Activity Schedule and the Accepted Programme for each currency.

1.2.8 The tendered total of the prices as stated in the Contract Data is obtained from the Activity Schedule summary. The tendered total of the prices includes for all direct and indirect costs, overheads, profits, risks, liabilities and obligations relative to the Contract.

C2.2 Activity Schedule

The Tenderer details his Activity Schedule below or makes reference to his Activity Schedule and attaches it to this schedule.

The details given below serve as guidelines only and the Tenderer may split or combine the activities to suit his particular methods.

CONTRACT No:	**TPL/2023/04/0003/28144/RFQ**				
Project	**Island View Terminal 1 Fresh Water for Fire System Testing Purposes.**				
IVW					
Item no.	***DESCRIPTION***	*UNIT*	*QTY*	*RATE*	*AMOUNT*
1	**P&G's**	*Sum*	*1*		
2	**IVW Clean Water Project: CIVIL WORKS**				
2.1	Supply and Install New Plinth Foundation	*Sum*	*1*		
2.2	Supply and Install Concrete Plinth	*Sum*	*1*		
2.3	Supply and Install Inside Wall Pipe Support	*Sum*	*1*		
2.4	Supply and Install Outside Pipe Supports	*Sum*	*1*		
2.5	Supply and Install Miscellaneous Activities x 3 Broken Plinths	*Sum*	*1*		
3	**IVW Clean Water Project: Electrical Works**				
3.1	Design, Supply, and Install Soft Starter Motor control with thermistor input connections	*Sum*	*1*		
3.2	Metal work modifications	*Sum*	*1*		
3.3	Supply and Install Power cable (blue stripe)	*Sum*	*1*		
3.4	Supply and Install Remote Start/Stop Station and Control cable (blue stripe)	*Sum*	*1*		
3.5	Supply and Install Racking and bonding	*Sum*	*1*		
3.6	Connections, Termination and Commissioning	*Sum*	*1*		
4	**IVW Clean Water Project: Instrumentation**				
4.1	Supply and install a Level Switch (50-LS183)	*sum*	*1*		
4.2	Supply and install a mechanical tank level indicator (50-LS183)	*Sum*	*1*		

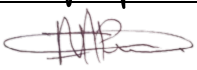
4.3	Supply and install a flow switch (50-FS181)	*Sum*	*1*		
4.4	Pressure indicator (50-PI186)	*Sum*	*1*		
4.5	Supply and install cabling for Instrumentation	*Sum*	*1*		
5	**Testing, commissioning, handover, electrical COC, As built documentation**	*Sum*	*1*		
6	**Total Price to be carried over to the Form of Offer & Acceptance**	*Sum*	*1*		
				Total (Exc. VAT)	

Document Title:
SCOPE OF SERVICES

Project Title:
Island View Terminal Fresh Water for Fire system: **Supply and installation of Electrical, Civil and Instrumentation works.**

REVISION 08: FOR APPROVAL

DOCUMENT PREPARATION

	Name	Title	Signature	Date
Compiled by	Sello Molekoa	Mechanical Specialist		22.03.2023
	Craig Mcconnachie			
Reviewed By	Sibongiseni Cebekhulu	Civil Eng Technician		22/03/2023
	Vincent George	Electrical Specialist		23/03/2023
	Moshohli Pilusa	MC&I Specialist		23/03/2023

DOCUMENT APPROVAL

	Name	Title	Signature	Date
Approved By	Thershni Pillay	Principal Mechanical Engineer		23/3/2023

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1. Project Objectives

To supply and install civil, electrical and instrumentation works for the fresh water for fire system at the Island View Terminal located within the Cutler Complex in Durban. Installation of mechanical piping in conjunction with the mechanical work which will be completed in-house by Transnet Pipeline personnel.

2. Executive overview

TPL Intends to install a freshwater system connection to the existing fire system at the Island View Terminal.

3. Abbreviations

The following abbreviations are used in this document:

Table 1: Abbreviation

Abbreviation	Meaning given to the abbreviation
PPE	Personal Protective Equipment
SANS	South African National Standard
TPL	Transnet Pipelines
IVW	Island View Terminal
MPa	Mega Pascal Pressure Unit
mm	Millimetre (Distance unit)
m	Meter (Distance Unit)
kW	Kilo Watt (Power Unit)
HYSD	High Yielding Strength Deformed
LV	Lower Voltage
MCC	Motor/Master Control Centre
MC&I	Metering Control and Instrumentation
SCADA	Supervisory Control and Data Acquisition
CoC	Certificate of Compliance
P&ID	Piping and Instrumentation Diagram

4. Compulsory Brief Site Meeting – Transnet Pipelines Island View Terminal 1.

The site brief meeting on the TBA (To be Announced) Island View Terminal 1 and Full PPE is compulsory to attend the meeting.

Address: Corner of Trinidad Road and Taiwan Road.

5. Description of Civil works

The Contractor allows for the civil preparation activities at the facilities as detailed herewith. Preparation activities are required to ready the facilities for the installation of mechanical equipment and the subsequent piping.

5.1. Pump Plinth Foundation:

Refer to drawing:*TM1 Clean Water Project – PL122542*

5.1.1. Scrabbling of existing slab surface according to the coverage of the Pump plinth.
5.1.2. Drill-in the Y12 SC 37/20 vertical reinforcement with SikaAnchorfix – 3030 epoxy/ HILTI Epoxy.
5.1.3. Supply and apply Stoncor pro – struct616/ or Sikadur – 32N as a bonding between old concrete and new concrete.
5.1.4. Supply and install rebar details Y12 SC 60, 28 & 29 (See attached drawing)
5.1.5. Holding down Stud: FIS-A-ANCHOR RODS Drilled Min 80 mm into existing slab and fixed using FIS-EM Injection mortar.
5.1.6. Supply, assemble the formwork and Cast-in situ concrete - 35 MPa concrete to wall extensions (2.6 x 1.6 x 0.4).
5.1.7. Supply and apply shims and non-shrink grouts, the SikaGrout – 214, 30mm thick between steel plate and concrete base.
5.1.8. Concrete chamfers on edges should be 20mm x 20mm chamfers**.**
5.1.9. Install and secure the skit base with required cushion pads and secure with six nuts M8.8 or similar into a FIS-A-ANCHOR RODS/ Stud drilled Min 80 mm into existing slab.

5.2. Concrete Plinths (300mm * 300 mm) x 3

Refer to drawing: ***TM1 Clean Water Project – PL122542***

5.2.1. Scrabbling of existing slab surface according to the coverage of the Plinths.

5.2.2. Drill-in the Y12 SC 37 vertical reinforcement with SikaAnchorfix – 3030 epoxy/ HILTI Epoxy.

5.2.3. Supply and apply Stoncor pro – struct616/ or Sikadur – 32N as a bonding between old concrete and new concrete.

5.2.4. Supply and install rebar details Y08 SC 60 (See attached drawing)

5.2.5. Holding down Stud: FIS-A-ANCHOR RODS Drilled Min 80 mm into existing slab and fixed using FIS-EM Injection mortar.

5.2.6. Supply, assemble the formwork and Cast-in situ concrete - 35 MPa concrete to wall extensions (0.3 x 0.3 x 0.25).

5.2.7. Supply and apply shims and non-shrink grouts, the SikaGrout – 214, 30mm thick between steel plate and concrete base.

5.2.8. Concrete chamfers on edges should be 20mm x 20mm chamfers.

5.2.9. Install and secure the 300 x 300 x 12mm thick baseplates that is welded to the vertical support steel members with required heights of varying between 0.5m - 1.6m high and secure the pipes with U-Bolts or similar.

5.3. Roof Hanging Support x 3

5.3.1. Supply, weld, install and secure angle iron in L-shaped or similar type as per current site hangers.

5.4. Outside Pipe Support

5.4.1. Surface preparation - scribbling surface of wall surface and fix mosaic as its original state.

5.4.2. Pipe supports for 2m intervals from interception of Portable Water. 30 supports over 60 m section similar type as per current site hangers.

5.5. Miscellaneous Activities x 3 Broken Plinths

Refer to drawing: ***TM1 Clean Water Project – PL121681***

5.5.1. Break-out the old plinths to the founding level of the floor slab

5.5.2. Drill-in the Y16 SC 20 vertical reinforcement with SikaAnchorfix – 3030 epoxy. Supply and apply Stoncor pro – struct616/ or Sikadur – 32N as a bonding between old concrete and new concrete.

5.5.3. Supply and install rebar details Y16 SC 60 and Y12 SC 38 (See attached drawing)

5.5.4. Holding down Stud: FIS-A-ANCHOR RODS Drilled Min 80 mm into existing slab and fixed using FIS-EM Injection mortar. M8.8

5.5.5. Supply, assemble the formwork and pure 35Mpa concrete (0.55 x 0.55 x 0.25) to cast the plinths

5.5.6. Supply and apply the non-shrink grout, the SikaGrout – 214. 30mm below steel plate

5.5.7. Reconnect the vertical pipe support by arch welding method and fix the steel plate to the anchored stud and secure with M8.8 or similar nuts.

5.5.8. Supply and painting of the vertical water pipe support members

6. Electrical Scope of Works.

6.1. The contractor shall be responsible for the design of, procurement, supply, installation, testing and commissioning of the electrical works.

6.2. All works must follow the applicable SANS codes, Transnet Pipelines specifications and OHS ACT.

6.3. SANS CODES and LEGISLATIVE

Table 2: SANS CODE & Legislative

SANS 10142-1	Wiring of a Premises low voltage installations
OHS Act	Occupational Health and Safety Regulations

6.4. TRANSNET PIPELINES SPECIFICATIONS – ***These TPL Specifications can be made available upon request from the Tenderers.***

Table 3: Transnet Pipeline Specifications

PL100	Drawing Standards
PL101	Plant Equipment Tag Numbering Standard
PL102	Equipment, Instrument & Electrical Symbology Standard
PL103	General Drawing Standard
PL666	Electrical Design Criteria
PL631	LV Switchgear and Distribution Boards
PL727	Cable, Racking, Trenching and Earthing Installation Codes of Practice

6.5. The works are for the power supply and reticulation requirements of the 110kW motor installed in the fire pump house at IVW terminal.

6.6. A soft starter (with thermistor input connections) motor control is required and must be matched with identical components as per current site installations. Typical drawings are provided for reference.

6.7. All metal work modifications on the LV MCC buckets must be of acceptable Siemens standards.

6.8. Cabling to be done

6.8.1. LV power cable 70mm sq. 4 core copper ECC SWA blue stripe

6.8.2. Thermistor control cable shall be 2.5mm sq. 4 core ECC SWA

6.8.3. The length of cabling approx. 70m, must be confirmed on site by the contractor.

6.8.4. A remote start stop station shall be supplied and installed close to the motor.

6.8.5. A 2.5 mm sq. 4 core cable shall be installed for the control thereof from the motor to the starter in the LV MCC

6.9. Stainless steel racking (to match existing) shall be installed in the pump house of approx. 10m.

6.10. Equipotential bonding shall be provided by bonding the pump skid frame to the nearest earth bar in the fire pump house with a 50mm sq. earth cable of approx. 15m.

6.11. The contractor shall use on the existing LV MCC – LV01 spare buckets 16F3 & 16F4, for the soft starter motor control, install all cables and terminate as per TPL standards.

6.12. The contractor is required to provide new labels on the panel as per TPL standard.

6.13. The contractor is required for the commissioning of the complete motor starter. installation.

6.14. The contractor shall provide a CoC for this installation as per SANS 10142-1 with all supporting documentation.

6.15. The contractor shall provide all as build drawings and equipment owner's manuals as part of documentation.

7. MC&I Scope of work.

7.1. SCADA

All instruments to be installed shall not be interfaced with SCADA system.

7.2. Instrumentation

*Note*All the instruments shall conform to TPL approved data sheets or specifications and installed according to P&ID no 268358-J-TM1-FP-PD-07001(15) for Tank no 50-T183(B). This information is available upon request.*

7.2.1. Level Switch (50-LS183)

7.2.1.1. The level switch shall be installed to protect the pump for low levels of the clean water tank.

7.2.1.2. The contractor shall align with Electrical team for the wiring and electrical ratings.

7.2.2. Mechanical Tank Level Indicator (50-LI183)

7.2.2.1. The tank level indicator shall utilize a target and gauge board to indicate tank level on the side of the tank.

7.2.3. Flow Switch (50-FS181)

7.2.3.1. The flow switch shall be installed to protect the pump when there is no flow.

7.2.3.2. The contractor shall align with Electrical team for the wiring and electrical ratings.

7.2.4. Pressure Indicator (50-PI186)

7.2.4.1. The indicator shall be installed to indicate the pressure readings of the water inside the pipeline.

7.3. Cabling

7.3.1. The cabling for the instruments shall conforms to TPL standards as per PL727.

7.3.2. All cables shall be labelled with tags according to TPL approved tag naming standards as per PL101.

7.4. Drawings

7.4.1. All drawings shall conform to PL100 & PL103

8. Appendix

8.1. Civil Drawings and numbering

8.1.1. TM1 Clean Water Project – PL122542

8.1.2. Proposed Clean Water Piping - PL122552

8.1.3. TM1 Fire Pump House Plinth – PL161681

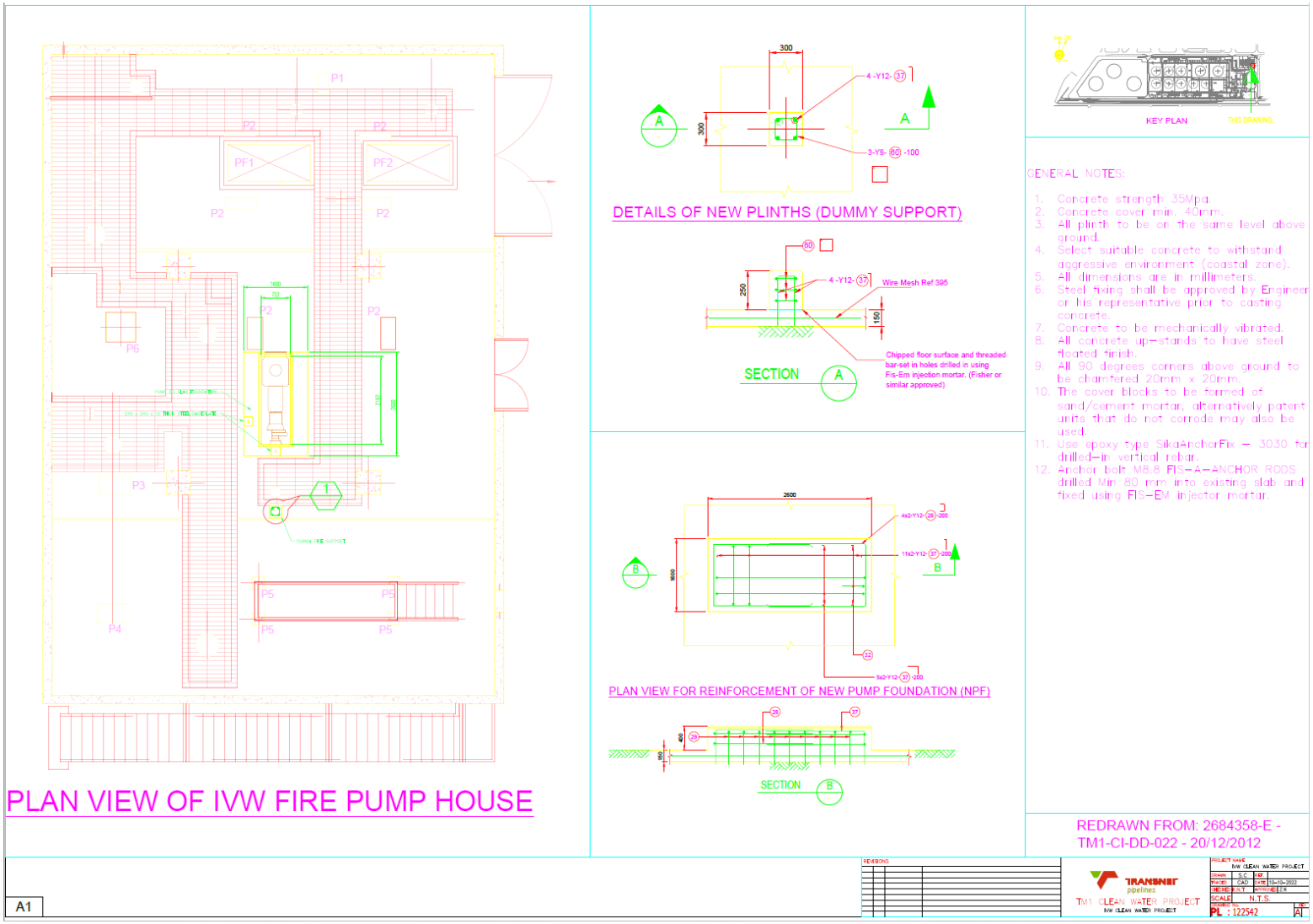


Figure 1:TM1 Clean Water Project – PL122542

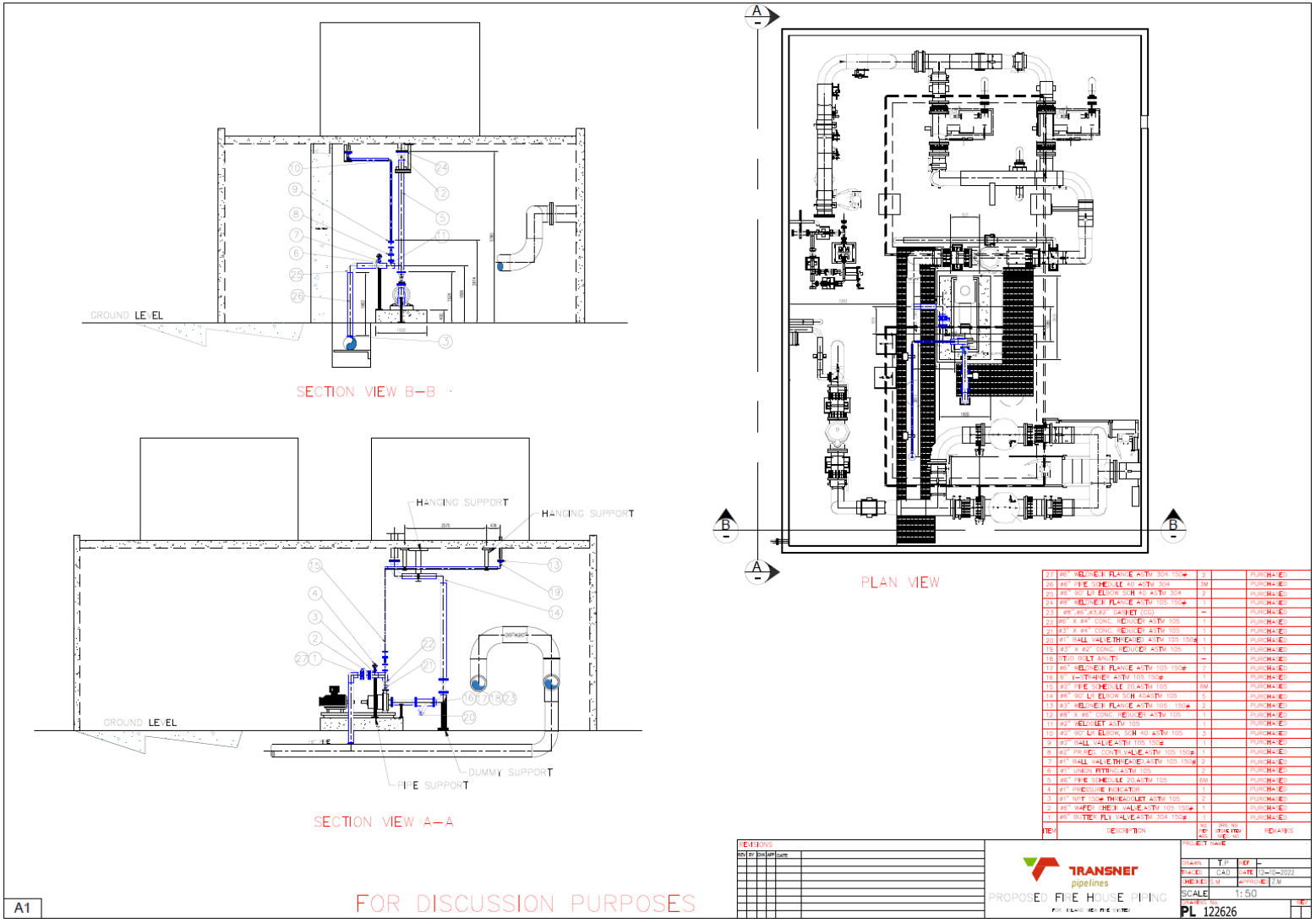


Figure 2:Proposed Clean Water Piping-PL122552

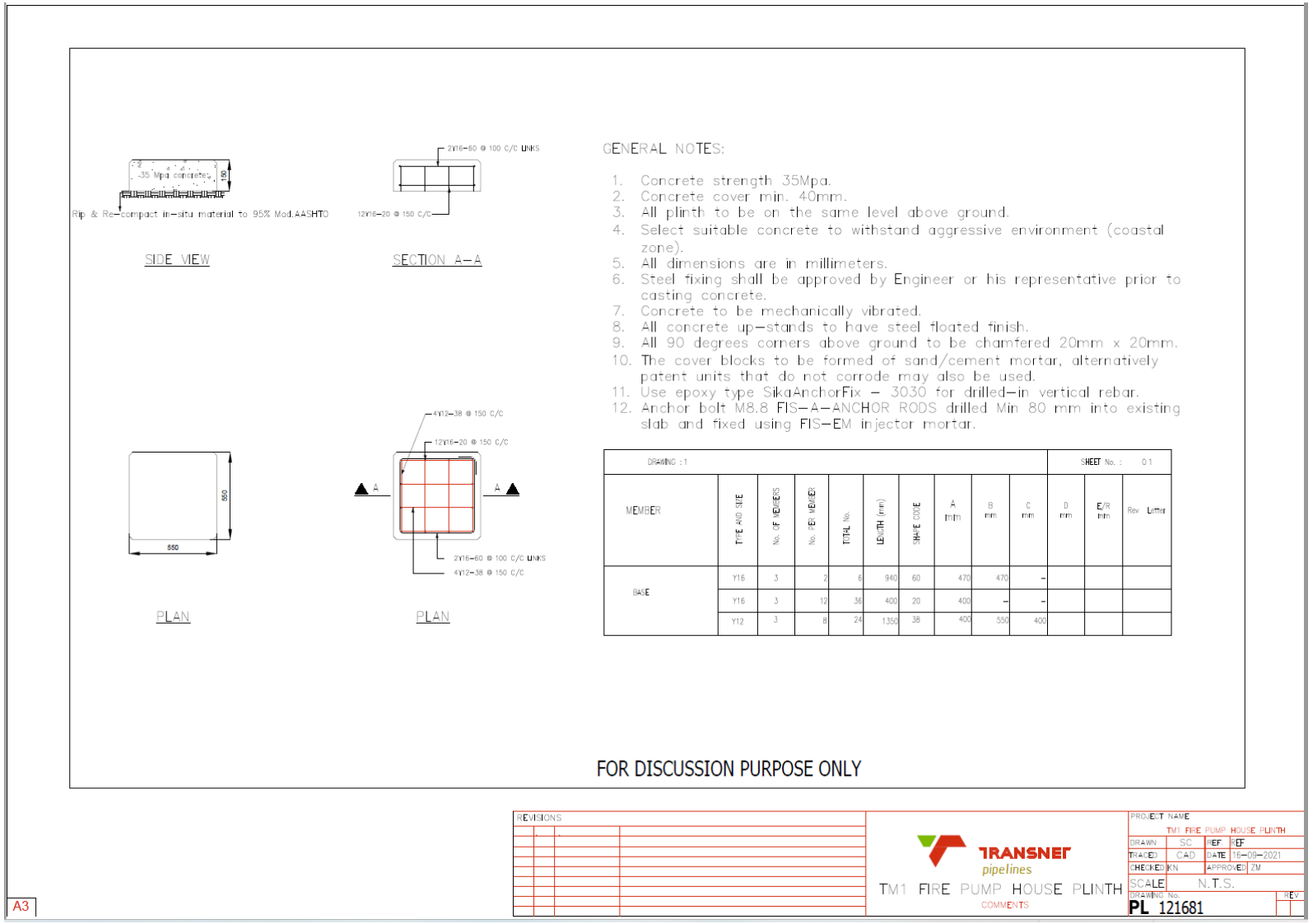


Figure 3:TM1 Clean Water Project – PL121681

8.2. Electrical Drawings and numbers

8.2.1. Island View Fire Pump typical X41 G.A - PL122614

8.2.2. IVW Fire Pump House Typical Starter Schematic- PL122609

8.2.3. IVW Electric Motor Datasheet

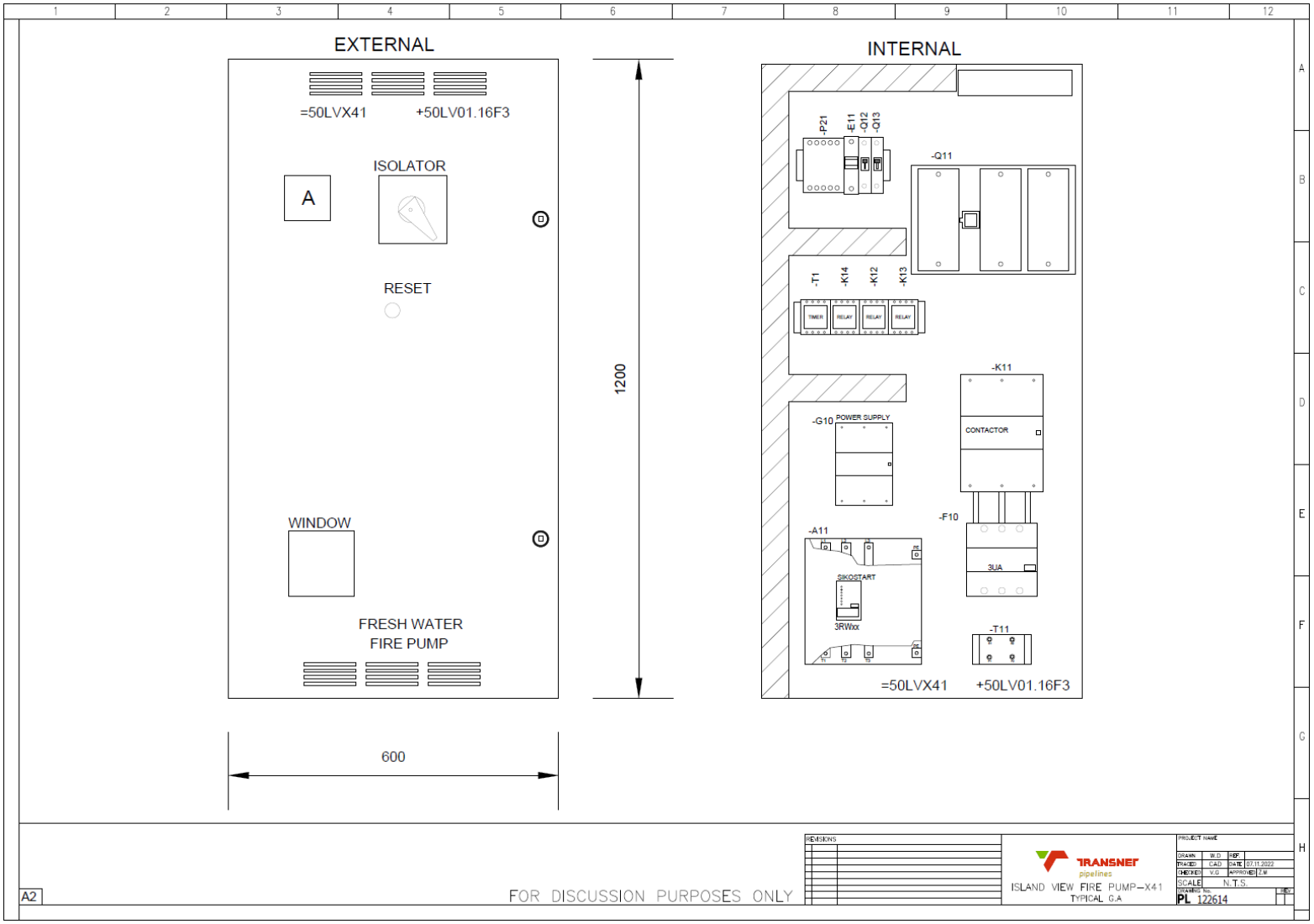


Figure 4:IVW Fire Pump -X41 typical G. A- PL122614

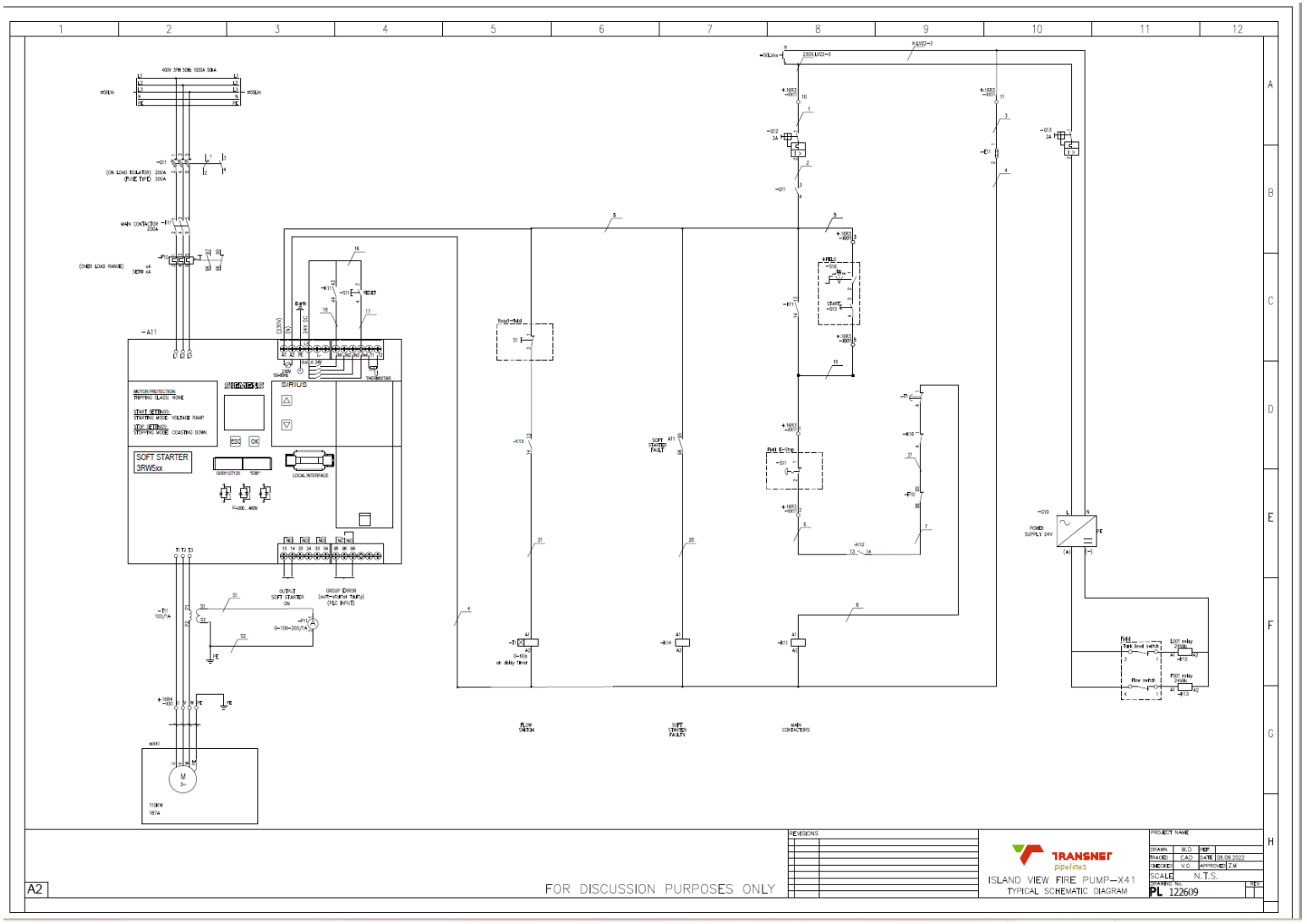
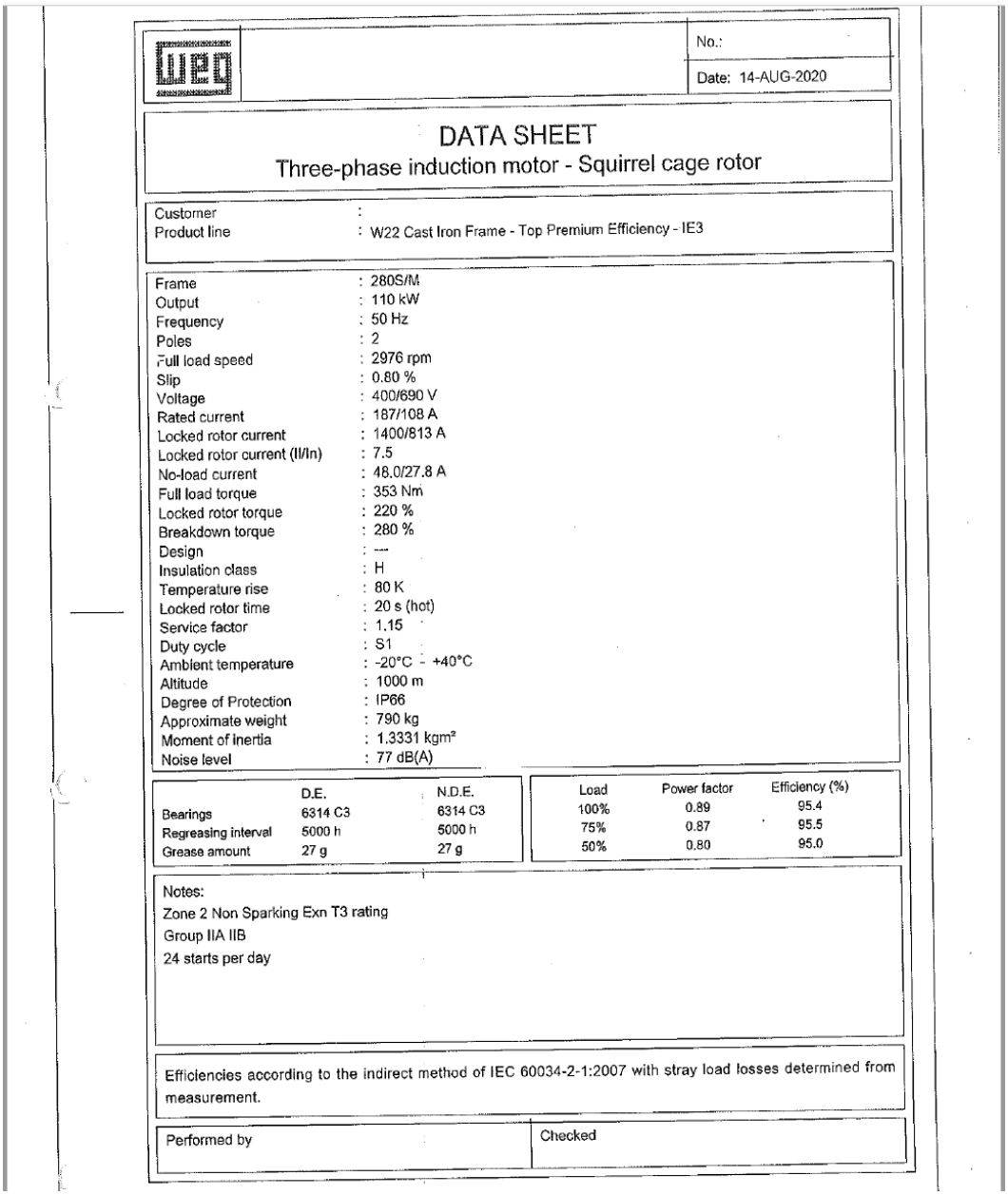


Figure 5:IVW Fire Pump House Typical Starter Schematic-PL122609



No.:

Date: 14-AUG-2020

DATA SHEET

Three-phase induction motor - Squirrel cage rotor

Customer	:
Product line	: W22 Cast Iron Frame - Top Premium Efficiency - IE3

Frame	: 280S/M
Output	: 110 kW
Frequency	: 50 Hz
Poles	: 2
Full load speed	: 2976 rpm
Slip	: 0.80 %
Voltage	: 400/690 V
Rated current	: 187/108 A
Locked rotor current	: 1400/813 A
Locked rotor current (Il/In)	: 7.5
No-load current	: 48.0/27.8 A
Full load torque	: 353 Nm
Locked rotor torque	: 220 %
Breakdown torque	: 280 %
Design	: ---
Insulation class	: H
Temperature rise	: 80 K
Locked rotor time	: 20 s (hot)
Service factor	: 1.15
Duty cycle	: S1
Ambient temperature	: -20°C - +40°C
Altitude	: 1000 m
Degree of Protection	: IP66
Approximate weight	: 790 kg
Moment of inertia	: 1.3331 kgm²
Noise level	: 77 dB(A)

	D.E.	N.D.E.
Bearings	6314 C3	6314 C3
Regreasing interval	5000 h	5000 h
Grease amount	27 g	27 g

Load	Power factor	Efficiency (%)
100%	0.89	95.4
75%	0.87	95.5
50%	0.80	95.0

Notes:
Zone 2 Non Sparking Exn T3 rating
Group IIA IIB
24 starts per day

Efficiencies according to the indirect method of IEC 60034-2-1:2007 with stray load losses determined from measurement.

Performed by	Checked

Figure 6:Electric Motor Datasheet

8.3. Mechanical drawings and number

8.3.1. Proposal Fresh Water P&ID - PL121494

8.3.2. Proposal Municipal Water P&ID – PL 122438

8.3.3. Proposed Clean Water Intake – PL122552

8.3.4. Howick Pump GA

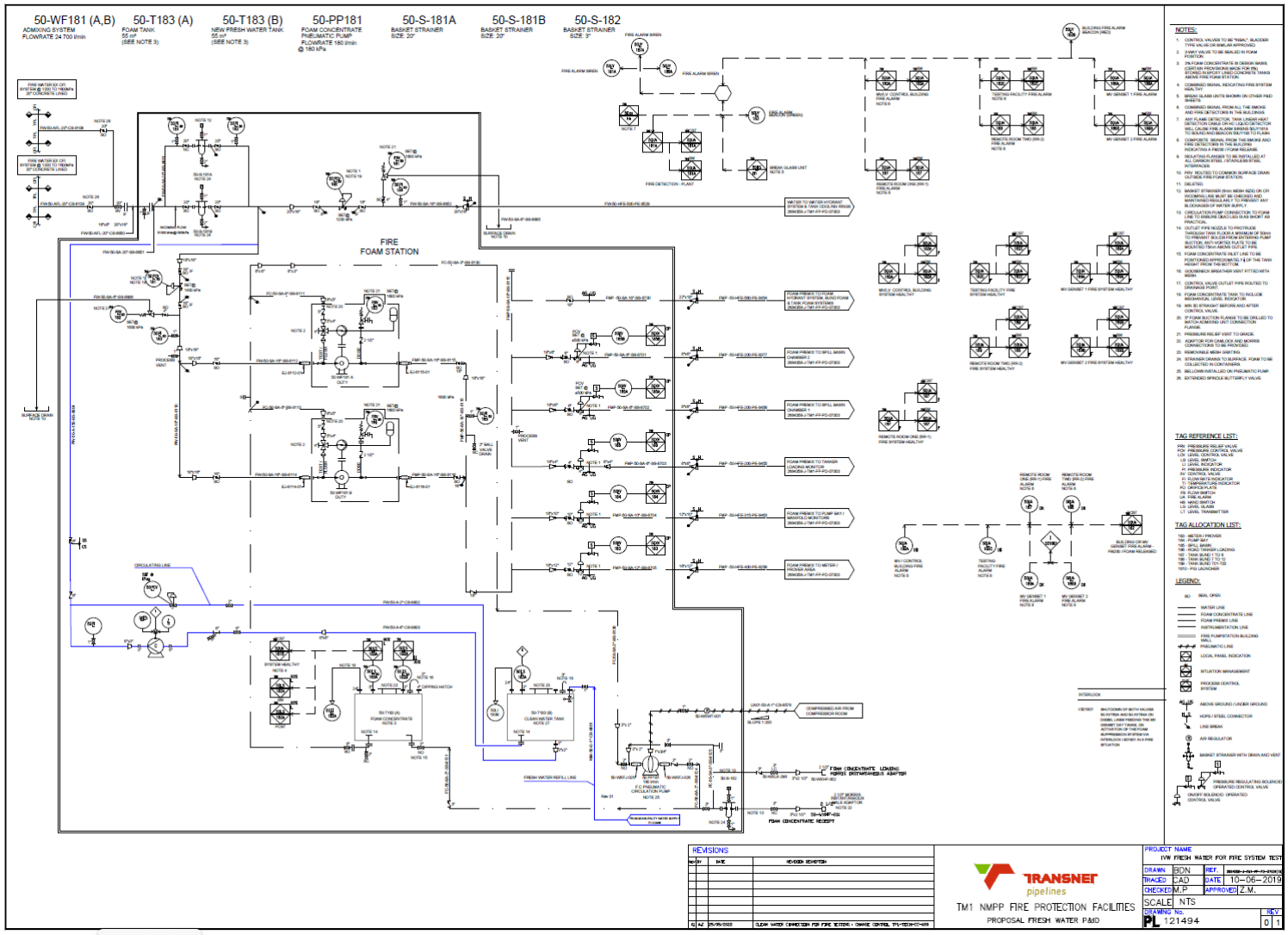


Figure 7:PROPOSAL FRESH WATER P&ID - PL121494

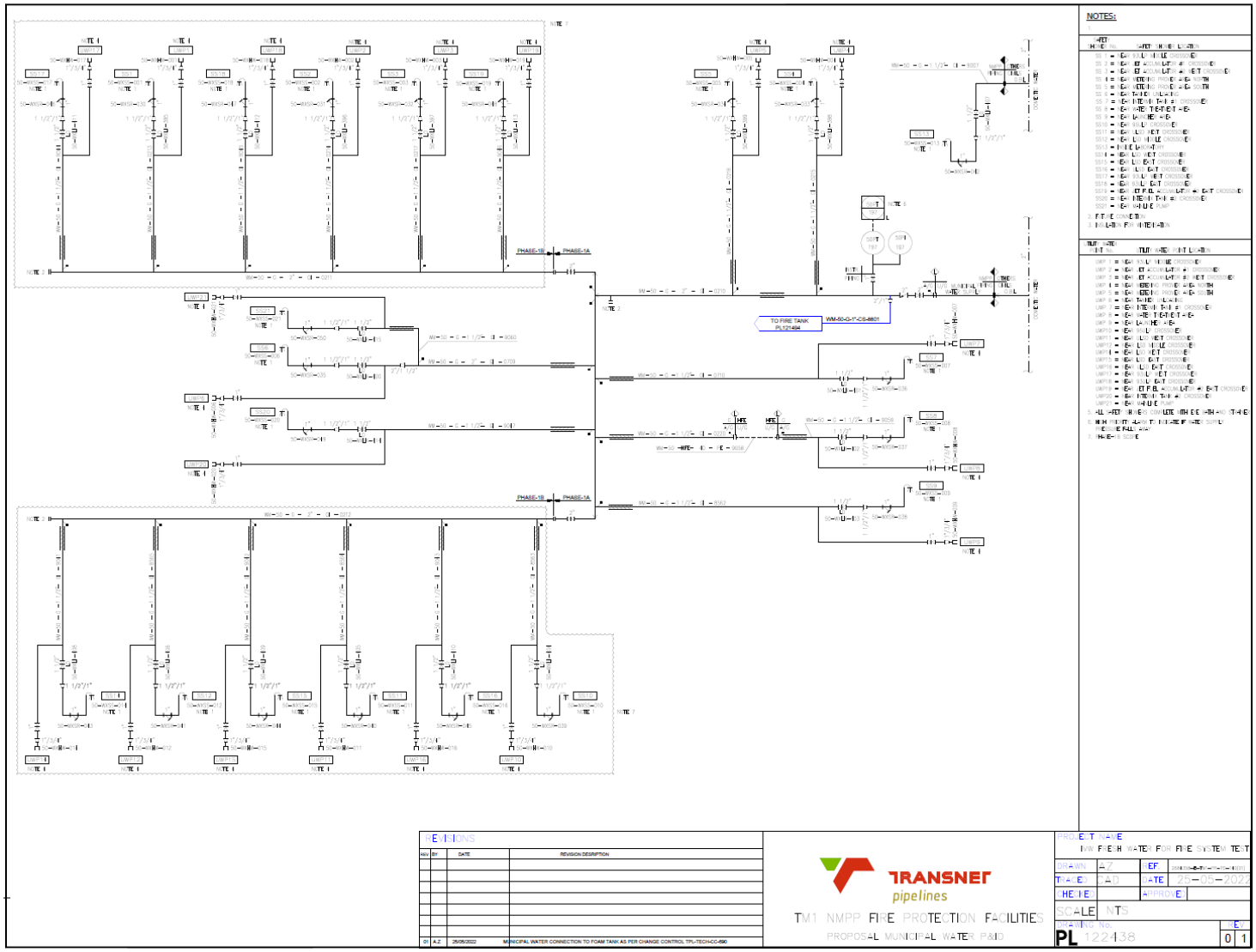


Figure 8: Proposal Municipal Water P&ID – PL 122438

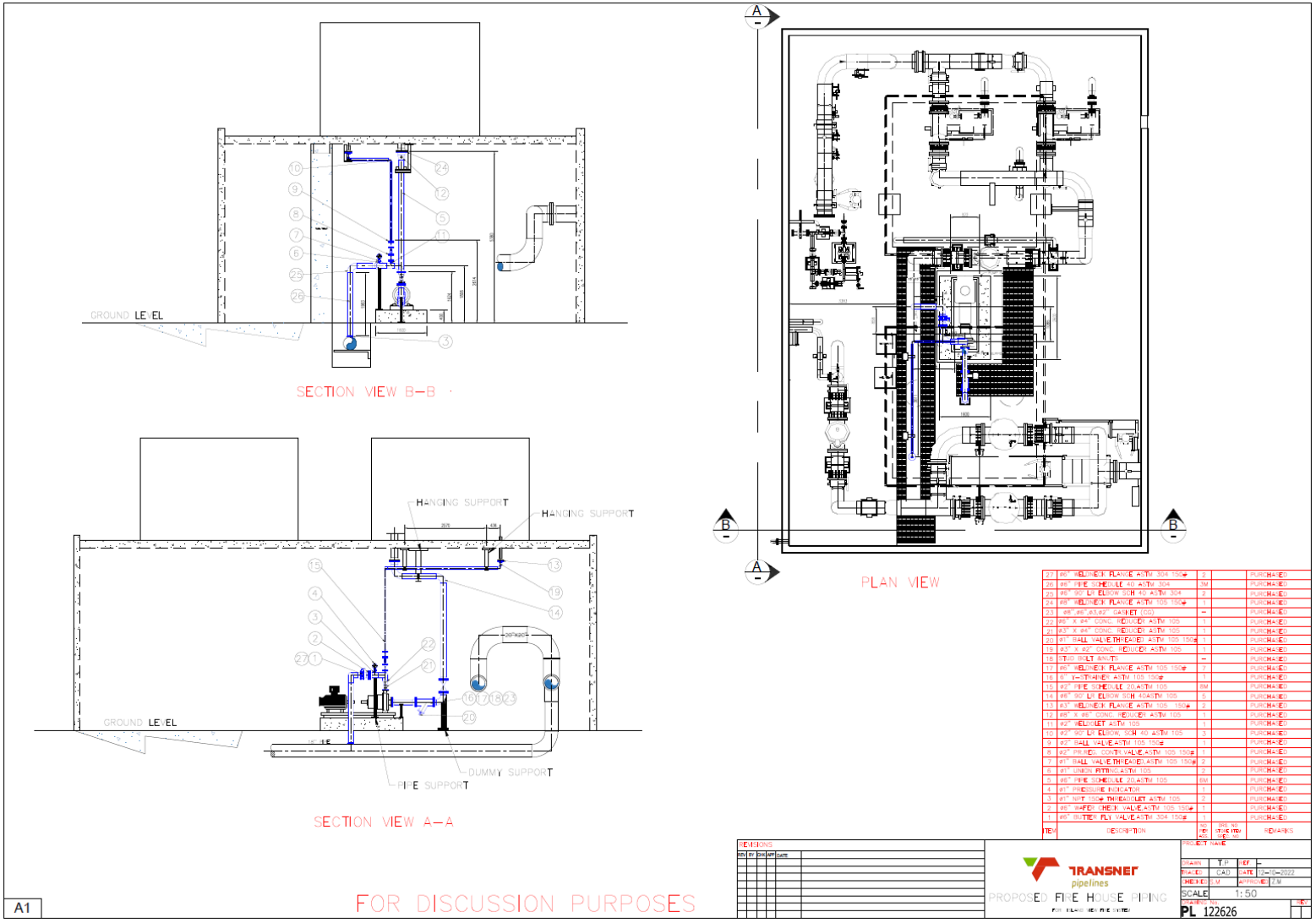


Figure 9:Proposed Clean Water Piping - PL122552

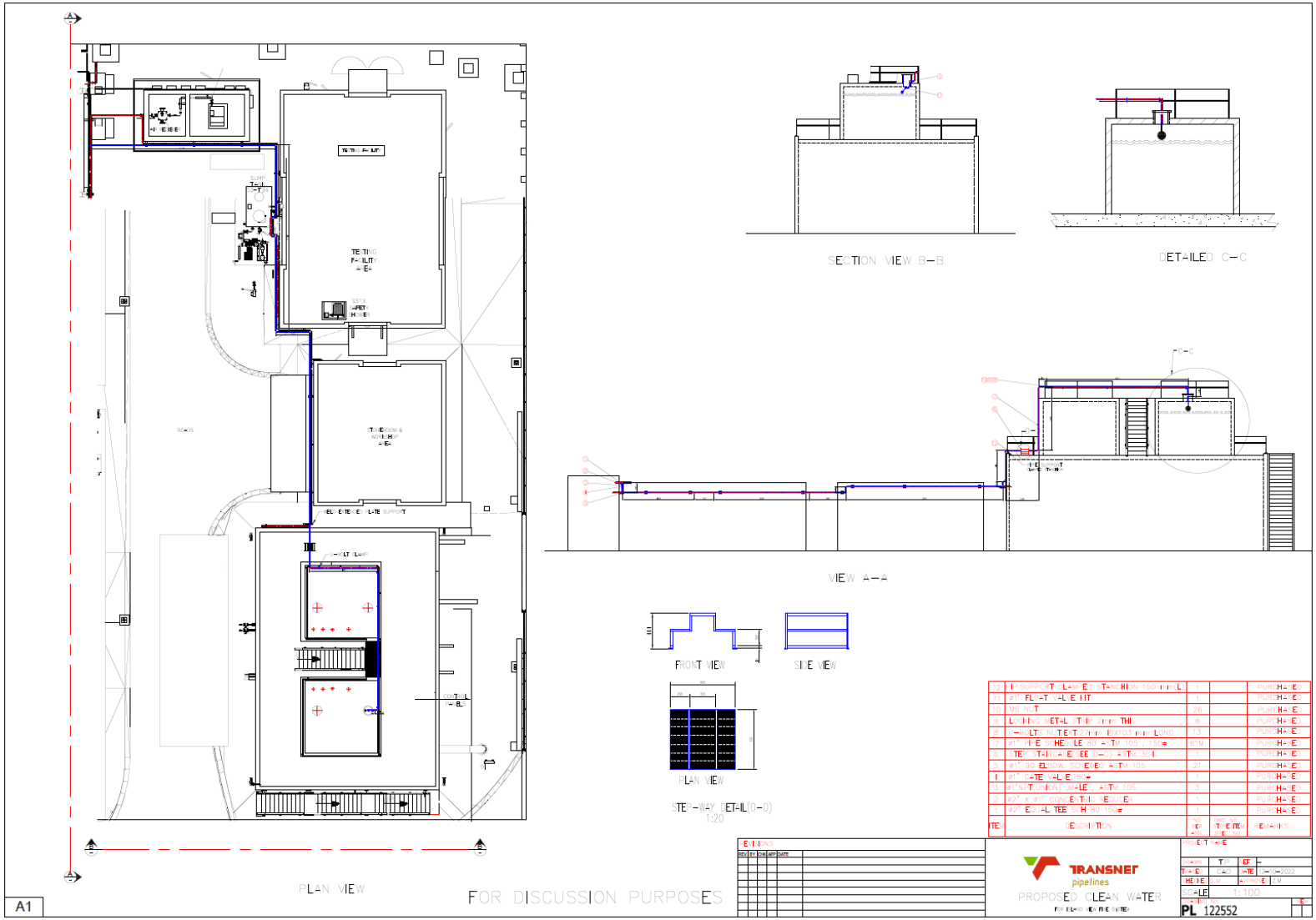


Figure 10:Proposed Clean Water Intake -PL122552

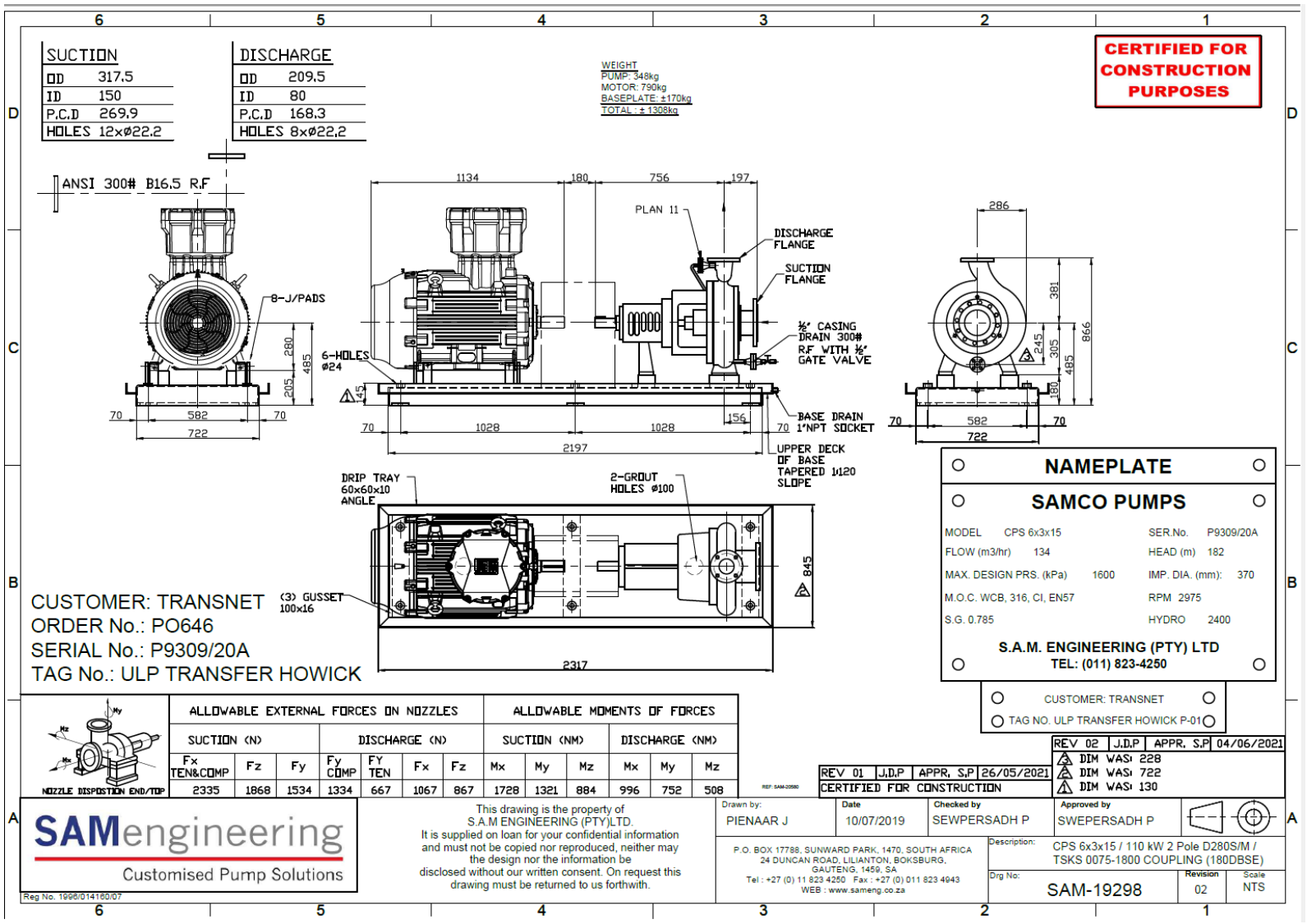


Figure 11: Howick Pump GA