CIVIL AND MECHANICAL ENGINEERING CONTRACTORS

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Project Title	BFI01/23/E2SC2 Re-Advert: RIVERTON WTW REFURBISHMENT OF OLD PLANT'S FILTERS, CHLORINE AND CHEMICAL DOSING SYSTEMS
Work Package Title	Procurement and Supply of Valves
Date of Work Package	11 November 2024
Project Manager	T.N Sibanda
Expected date of awarding of work package	20 November 2024
Expected Date of Delivery	14 March 2025 (16 weeks from date of award)
Expected Duration of Contract	30 days
Reference	C320-WPK008

Purpose

The objective of this work package is to engage a service provider for the procurement and supply of various valve types. This package will be executed in a single phase, with all items supplied to the designated recipient at the specified address. Detailed specifications and quantities for each valve are provided in document C320 – Valve & Actuator Schedule Rev 1 (attached).

This opportunity is restricted to enterprises meeting the following criteria: they must qualify as a Local Enterprise, Local Emerging Contractor, Local Services Provider, or Local Supplier, and must be recognized as a Targeted Enterprise as defined below.

Eigenbau intends to place a single order for the procurement and supply of valves with one selected vendor.

Local

means the Sol Plaatje Municipality (SPM) area.

Local Emerging Contractor

means a legal business entity with its registered office and/or physical address in the Local area.

Local Supplier

means a legal business entity with its registered office and/or physical address in the Local area who has actively conducted business in the Local area for a period of more than 12 months and who supplies materials and plant directly to the end-user.

Local Services Provider

means a legal business entity with its registered office and physical address in the Local area who has actively conducted business in the Local area for a period of more than 12 months and who supplies services directly to the end-user.

Pre-qualification Criteria for **Targeted Enterprises**

i. an EME or QSE which is at least 51% owned by black people.

ii. an EME or QSE which is at least 51% owned by black people who are youth.

iii. an EME or QSE which is at least 51% owned by black people who are women.

iv. an EME or QSE which is at least 51% owned by black people with disabilities.

v. an EME or QSE which is 51% owned by black people living in rural or underdeveloped areas or townships.

Background

Eigenbau Pty Ltd is a company with a long history of successful projects in the water and wastewater treatment space. As such, Eigenbau competitively tendered for the appointment for various mechanical and electrical works at the Riverton Old Works. Eigenbau were appointed as the sole Main Contractor in the refurbishment of old plant's filters, chlorine and chemical dosing systems at Riverton Water Treatment works.

As part of the Scope of works, we are required to procure and supply mechanical valves to a designated location for further processing and/or installation. The type and quantity of the valves are specified in the valve schedule, bill of quantities and drawings (all of which are attached). The successful supplier maybe requested to purchase the valves with a slight difference in quantities to those stipulated in the documents provided as the designs are subject to changes and modifications. This will be communicated to the supplier. This work has been identified as being suitable for supply opportunity to a party who is able to source materials, negotiate resale discounts and manage tight timelines. The ideal sub-contractor should also have a proven track record of having worked with procurement and supply of mechanical equipment. Eigenbau herewith issue this invitation to tender to suitable experienced service providers for this as a works package to qualifying local entities.

NOTE: *All responding parties are to remain aware that the main contract was secured under competitive bidding and accordingly the responding parties are encouraged to research what is acceptable rates for such work that allows all parties to reasonably benefit from the work. Eigenbau is committed to sharing workload, within the main contract parameters*

Site Location

Not applicable to this work package.

Delivery Address

ALL Slanted Seat Tilting Disk Check Valves and Waffer Pattern Lugged Butterfly Valve will be delivered to Eigenbau workshop Boksburg, Gauteng.

ALL Butterfly valves will be delivered to 1 Carel Lotter Rd, Nuffield, Springs, 1559.

Below are the contact person/s to arrange for deliveries at the respective equipment locations:

Contact Person	Phone number	Email Address	Company
Peter Hook	066 009 2852	peter@eigenbau.co.za	Eigenbau (PTY) Ltd
Francois Hattingh	011 363 2880	fh@auma.co.za	Auma South Africa (PTY) Ltd

Scope of work

Eigenbau seeks a qualified contractor to supply and deliver various mechanical valves to specified locations. The scope of work includes:

a) Procuring valves as detailed in the attached Valve & Actuator Schedule.
b) Transporting and delivering the valves to the designated location.

Important Notes:

1. It is recommended that the supplier negotiates with the OEM vendor to include transport to the named transport destinations on their behalf.
2. The appointed vendor must ensure that the valves remain undamaged during transportation, as any damage will render them unusable.
3. The appointed vendor is responsible for both loading and offloading at the collection and delivery points. Caution and attention to detail must be observed throughout the process.

Site Access

Not Applicable to this work package.

Deliverables

Below are the required deliverables.

a. Tagged Valves as per Valve & Actuator schedule.
b. Delivery to the 2 different locations.
c. Delivery Note depicting where each tagged valve was delivered.

Assumptions

All cost related to this project should be in-cooperated into the submitted quotation for review. No variation orders will be tolerated.

Constraints

1. Submission closing date will be on the 19th of November 2024.
2. Orders need to be placed with the valve supplier by 26th of November 2024.

Dependencies

Suppliers of Valves that meet or exceed the standards of the product offered by the contractor are limited. To assist with expediting the procurement process, below is the recommended possible supplier and their contact details:

Name of Company	**Name of contact person**	**Contact details**		**Location**
		Email	**Tel**	
Macneil Steel & Valves	Brian Saverton	sav@macneilsteelvalves.co.za	011 822 1802	1575 Steel road, Knights, Germiston, 1401, Gauteng, South Africa.

Risks and Mitigation

Non-Applicable to this work package

Milestones

Not applicable to this work package

Progress reporting

N/A tot this work package

Attachments and Appendices

1. 3338.12.00.WFA.14.A001 VER.1
2. 3338.12.00.WFA.14.M001 VER.2
3. 3338.12.00.WFA.14.M002 VER.2

4. 3338.12.00.WFA.14.M003 VER.2
5. 3338.12.00.WFA.14.M004 VER.2
6. 3338.12.00.WFA.14.U001 VER.1
7. 3338.12.00.WFA.14.U002 VER.1
8. 3338.12.00.WFA.14.U003 VER.1
9. 3338.12.00.WFA.14.U004 VER.1
10. 3338.12.00.WFA.14.U005 VER.2
11. 3338.12.00.WFA.14.X001 VER.2
12. 3338.12.00.WFA.14.X002 VER.2
13. 3338.12.00.WFA.14.X003 VER.2
14. C320 - Specification for Supply of Valves
15. C320 - Valve & Actuators Schedule Rev 1
16. C320 - Pricing Schedule for Supply of Valves

Approvals

All approvals will be done by the Main contractors Project Manager.

Returnable Documents

Below is a list of the required returnable documents:

1. Signed Quotation and Offer of Services addressing the **Scope of Work.**
2. Copy of CIDB Certification as proof of contractor's registration (Not required in this instance).
3. CIPC Registration for the company (Only applicable to companies)
4. Tax Status Compliance or PIN. (*This document is compulsory, and non-compliance will result in disqualificatio*n)
5. Certified copy of VAT Registration certificate
6. Certified copy of letter of good standing issued by the Department of Labour in terms of Act 130 of 1993.
7. Certified copy of Incorporation (Only required for applicants who are companies)
8. Certified copy of Partnership Agreement (If applicant is in a partnership)
9. Certified copy of Identity document of all owners/partners/directors etc.
10. Certified copy of the B-BBEE Status level verification certificate.
11. Copies of all identification for shareholder/directors/members etc (should not be older than 3 months)
12. CV of all key staff to be used on the project (Not required in this instance)
13. CV of the person who prepares the contractors Health, Safety and Environment plan.
14. Proof of Registration on the central supplier database (CSD)
15. Contractors Project Quality Plan and Transportation Method Statement.
16. Confirmation letter from bank for banking details.
17. Proof of Public Liability Insurance – not required for this package
18. Customer references in related industry.

Notes:

a. No site briefing will be held.
b. Other queries in this regard can be emailed to tenders@eigenbau.co.za no later than 48hours prior to the closing of the tender.

Commercial Terms and Conditions

Payment terms

Payment is strictly 30 days from month end in which delivery is made. Suppliers should also note that deliveries later than the 13th of each month, are considered delivered the following month and thus

should be invoice according. No deposits or advanced payments are available. deposit payment will be invoiced and paid within 30days from month-end of receipt of invoice.

Submission of Documents

All documents must be submitted electronically by the 17.00 on the closing date, by scanning the originals and mailing them to tenders@eigenbau.co.za

SOL PLAATJE LOCAL MUNICIPALITY

INTEGRATED BULK WATER SUPPLY SYSTEM INTERVENTION

CONTRACT No: BFI01/23/E2SC2

Re-Advert: RIVERTON WTW REFURBISHMENT OF OLD PLANT'S FILTERS, CHLORINE AND CHEMICAL DOSING SYSTEM

PLK : MANUFACTURE AND SUPPLY OF VALVES

INDEX

PLK MANUFACTURE AND SUPPLY OF VALVES

PLK 1 SCOPE

This section of the Specification includes the manufacture, testing and supply of valves for the conveyance of raw or potable water at ambient temperatures in pipes under pressure.

PLK 2 STANDARDS

The most recent issues of the following standard specifications will apply for the purposes of this Specification.

SANS 144	:	Cast-iron single door non-return valves
SANS 191	:	Cast steel gate valves
SANS 192	:	Cast steel single door non-return valves
SANS 664	:	Cast iron gate valves for waterworks
SANS 665	:	Cast iron gate valves for general purposes
BS 5155	:	Cast iron and carbon steel Butterfly valves
ISO 2441	:	Pipeline flanges for general use - shapes and dimensions of pressure tight surfaces
SANS 1123	:	Steel pipe flanges
SIS 05 5900	:	Pictorial surface preparation standard for painting steel surfaces

PLK 3 MATERIALS

PLK 3.1 Sluice Valves

PLK 3.1.1 The valve body, bonnet, thrust dome, gate and glands shall be of cast iron or cast steel as specified and depending on the required test pressures.

PLK 3.1.2 The stuffing box shall be of ample depth to afford sufficient space for long period packing and the design shall be such as to allow the gland to be easily and conveniently repacked under pressure.

PLK 3.1.3 Body and gate sealing rings shall be of bronze, gunmetal or stainless steel. RSV gate shall be nitrile rubber covered, and fully encapsulated. The rubber shall not be removed from the guides of the gate.

PLK 3.1.3 Spindles shall be of high grade stainless steel.

PLK 3.1.4 An isolating valve must be able to check the specified water pressure from both sides.

PLK 3.2 Butterfly Valves

PLK 3.2.1 Valve bodies and discs shall be of high-grade cast-iron or cast steel as specified and depending on the required test pressures.

PLK 3.2.2 The disc shaft or stub-shafts shall be of stainless steel located in self-lubricating bearings.

PLK 3.2.3 Sealing rings, seal retaining rings, body seatrings and associated screws shall be of stainless steel.

PLK 3.2.4 A butterfly valve must be able to check the specified water pressure from both sides.

PLK 3.3 Reflux Valves

PLK 3.3.1 Valve bodies shall be of cast iron or cast steel depending on the specification or test pressures.

PLK 3.3.2 Valve doors shall be of cast iron or cast steel.

PLK 3.3.3 The valve body and doors or disc shall be fitted with replaceable stainless steel body and door seat rings.

PLK 3.4 Air Valves

PLK 3.4.1 *Function*

Air valves are required to perform any combination of the following functions:

- Uninterrupted high volume air discharge through a large orifice during pipe filling.
- Uninterrupted high volume air intake through a large orifice during pipe emptying.
- Discharge of pressurised air through a small orifice during normal operation.
- Surge alleviation mechanism during rapid air discharge or rejoining of separated water columns.

PLK 3.4.2 *Closing mechanism, construction and design*

PLK 3.4.2.1 The air release and vacuum break valve shall be of a compact single chamber design with solid cylindrical High Density Polyethylene control floats. Floats of spherical design shall not be accepted. Any hollow float design will not be acceptable due to implosion and distortion making sealing difficult or impossible.

PLK 3.4.2.2 The ends of the cylinder shall be of fusion bonded epoxy powder coated mild steel, secured by means of stainless steel tie roads.

PLK 3.4.2.3 Floats shall be housed in a tubular stainless steel or corrosion protected body, secured by means of stainless steel fasteners.

PLK 3.4.2.4 The seats, spindles, guides, etc shall be of a suitable non-corroding metal with sufficient clearance and shall be designed to prevent abrasion of the ball or float when subjected to frequent operation.

PLK 3.4.2.5 The seats of the orifices shall not have sharp edges and shall be designed so as not to damage the ball or float when subjected to pressure.

PLK 3.4.2.6 The valve shall have an integral surge alleviation mechanism which shall operate automatically to limit transient pressure rise or shock induced by closure due to high velocity air discharge or the subsequent rejoining of separated water columns.

The limitation of pressure rise must be achieved by deceleration of approaching water prior to valve closure.

Relief mechanisms that act subsequent to valve closure cannot react in the low millisecond time span required and are therefore unacceptable.

The performance capability of an integral surge alleviation mechanism shall be substantiated through third party testing, conducted by a recognized authority.

PLK 3.4.2.7 Large orifice sealing shall be effected by the flat force of the control float seating against a nitrile rubber ‘O’ Ring housed in a dovetail groove circumferentially surrounding the large orifice.

Sealing in any other form shall not be accepted due to the vulcanizing of the float or the wedging of the float in the large orifice.

PLK 3.4.2.8 Discharge of pressurized air shall be controlled by the seating and unseating of a small orifice on a natural rubber seal affixed to the control float.

Valves with slotted air release apertures shall not be considered.

PLK 3.4.2.9 The intake/discharge orifice area shall be equal to the nominal size of the valve i.e. a 200 mm valve shall have a 200 mm intake/discharge orifice.

Valves up to and including 200mm NB shall incorporate an over pressure safety feature that will fail without an explosive effect, such as is normally the case when highly compressed air is released suddenly. This feature shall consist of easily replaceable components such as gaskets, seals or the like.

PLK 3.4.2.10 The valve construction shall be proportioned with regard to material strength characteristics, so that deformation, leaking or damage of any kind does not occur by submission to 2 times the designed working pressure.

PLK 3.4.3 ***Testing***

PLK 3.4.3.1 Manufacturers' published performance data must be substantiated by third party testing from a recognized test authority.

PLK 3.4.3.2 A high pressure strength and leak test whereby the valve is filled with water and pressurized to 2 times the rated working pressure which shall be held for a period of 2 minutes. Any leaking, weeping and sweating shall be a reason for rejection. These tests must be on total, completed units including floats.

PLK 3.4.3.3 Any imported valves shall be retested locally in all areas of specification.

PLK 3.4.4 ***Isolating valves for air valves***

PLK 3.4.4.1 Each air valve shall be provided with a suitable double flanged resilient seal gate valve to isolate the air valve from the main.

PLK 3.4.4.2 The isolating valves shall be capable of operating in a horizontal position and shall be provided with a handwheel for operation and gearing is not required.

PLK 3.4.4.3 Each isolating valve shall be provided with a handwheel fitted to the spindle in an approved manner and shall have directional indication so cast into a recess on the upper surface of the rim that the top of the letter, arrows and rim are at the same level.

PLK 3.4.5 ***Drains***

PLK 3.4.5.1 All air valves be provided with drain cocks so that the body of the valve can be drained when isolated from the pipeline. Cast steel gate valves shall be provided for this purpose.

PLK 3.4.6 ***Pressure gauge fitting***

PLK 3.4.6.1 A 12-mm cast steel full bore gate valve shall be fitted to the spool piece between the isolating valve and the air valve flanges for attaching a pressure gauge.

PLK 3.5 Ring needle valves

PLK 3.5.1 The valve body shall be of spheroidal graphite iron or cast-steel with supporting feet. The body seat shall be of stainless steel and shall be replaceable or may be deposit welded on a removable body section.

PLK 3.5.2 For ring needle valves the piston (plunger) shall be of cast stainless steel with replaceable resilient seal to obtain drop tightness, held in place by a retaining ring of stainless steel and corrosion resistant screws.

PLK 3.5.3 For spherical ball valves, the eccentrically supported ball plug shall be of cast stainless steel or spheroidal graphite iron with replaceable resilient seal to obtain drop-tightness, held in place by a retaining ring of stainless steel and corrosion resistant screws. The valve body shall include an access door to permit adjustment or replacement of the valve seal without dismantling the valve.

PLK 3.6 Manufacture

PLK 3.6.1 *General*

PLK 3.6.1.1 The design pressure of the valves shall not be less than the pressure specified subject to a minimum of 1 000 kPa.

PLK 3.6.1.2 All valves shall be double-flanged with bolt holes drilled off-centre all in accordance with the requirements of SANS 1123 or as otherwise specified.

PLK 3.6.1.3 The Tenderer shall give as a function of the downstream pressure the maximum acceptable discharge of water through the valves without risks of vibration and cavitation. The Tenderer shall also submit the head-loss characteristics of the valves.

PLK 3.6.1.4 The design pressure will be hand stamped on the top edge of the flanges of valves in kPa.

PLK 3.6.1.5 If specified, valves shall be supplied with by-passes to be bolted on to the body of the valve and not to the adjoining pipework.

PLK 3.6.1.6 Valves shall be fitted with position indicators if specified. Fully closed, fully open and intermediate positions shall be indicated in corrosive proof and robust design indicators.

PLK 3.6.1.7 Arrows shall be cast on all handwheels together with the wording "OPEN" or "CLOSE". The closing direction shall be clockwise unless otherwise specified.

In the case of cap top valves, an aluminium disc of at least 100 mm diameter and with the same wording and arrows shall be slipped over the spindle and retained by the cap.

PLK 3.6.1.8 All valves shall be supplied complete including bolts, nuts, washers and gaskets in accordance with the class of valve. Bolts shall be of sufficient length to allow not more than three screw threads to protrude outside units after complete tightening of the assembly. Gaskets for flanged joints shall be of compressed asbestos fibre to BS 2815 Grade A and full faced with a minimum thickness of 3 mm for pressures up to and including 1 600 kPa cloth-inserted rubber may be used.

PLK 3.6.1.9 Where isolating valves are required to be equipped with extended off-set spindles, the spindles shall be equipped with sufficient universal joints to ensure satisfactory valve operation. All spindle extensions shall be secured to permanent structures with galvanised clamps to the Engineer's approval. The rate for such valve items shall include for any required clamps, extensions joint, etc.

Handwheels on such extended spindles shall be mounted on plain-ended spindle or handwheel pedestal as specified or indicated on the construction drawings.

Isolating valve operation:

Cap top ..... CT
Handwheel..... HW
Electric actuator..... EA
Pneumatic actuator..... PA
Handwheel spindle extension.....HSE
Plain ended spindle extension.....PESE
Platform-mounted handwheel pedestal..... PMP
Handwheel pedestal on wall support bracket..... HPWB
Stub handwheel pedestal on wall support bracket..... SHWB
Grid-mounted handwheel pedestal ..... GMP

PLK 3.6.1.10 The following information shall accompany the tender:

- Description
- Flange Drilling
- Maximum working pressure
- Maximum unbalanced pressure
- Test pressure
- Manufacturers number
- Material of components
- Gearing
- Accessories

PLK 3.6.2 *Sluice Valves*

PLK 3.6.2.1 Double-flanged, wedge-gate, internal (non-rising) spindle sluice valves of the waterworks pattern are required to comply fully with SANS 191 or SANS 664 where applicable.

PLK 3.6.2.2 Only full-way valves will be accepted (i.e. the gate must be clear of the waterway in the fully open position).

PLK 3.6.2.3 The maximum force required to turn the handwheel at the maximum torque shall not be greater than 100 N per hand at the handwheel run (Total effort = 200 N) when operating at an unbalanced pressure equal to the rated working pressure of the valve. This may be achieved with the aid of gearing of a suitable ratio.

Where gears are used replaceable shear pins shall be provided to prevent damage to the valve if excessive pressure is used.

PLK 3.6.3 *Butterfly Valves*

PLK 3.6.3.1 Horizontal spindle type butterfly valves complete with gearing, handwheels and flanged at both ends with separate bolting for joining to the adjacent pipework is required.

PLK 3.6.3.2 Wafer valves or valves fitted with studs for attachment to the adjacent flanges are not permitted.

PLK 3.6.3.3 Valves shall be drop-tight when closed and metal to metal sealing is not acceptable.

PLK 3.6.3.4 All resilient seals shall be removable and readily replaceable on Site with the valve in position.

PLK 3.6.3.5 Resilient seals shall be retained by corrosion resistant securing elements to prevent corroding in position (e.g. bolts, set screws, etc.)

PLK 3.6.3.6 The valve-water seal shall be of the following types:

- a resilient seal fixed to the edge of the disc by corrosion resistant securing elements sealing on a stainless steel or bronze insert fixed in the body.
- a resilient seal fixed to the body of the valve by corrosion resistant securing elements sealing on a stainless steel or bronze insert fixed in the edge of the discs.

PLK 3.6.4 *Reflux Valves*

PLK 3.6.4.1 Reflux valves shall be double-flanged, SANS 1551.

PLK 3.6.4.2 Valve bodies and seals shall be free of pockets that will allow dirt accumulation and prevent the doors from closing fully.

PLK 3.6.4.3 Stops or an approved resilient material shall be fitted into the body to prevent the doors from fluttering under full flow conditions.

PLK 3.6.4.4 Valves shall be designed to allow for rapid but non-slamming closing characteristics.

PLK 3.6.5 *Air Valves*

PLK 3.6.5.1 Air valves shall be supplied with double-flanged, wedgegate internal (non-rising) spindle sluice valves for isolation, which unless otherwise specified shall conform in all respects to this specification.

PLK 3.6.6 *Ring needle valves*

PLK 3.6.6.1 Ring needle valves used as auto closing valves shall fulfil the following functions:

- Electrical operation (isolating and control) suitable for opening and closing against the specified pressure and for continuous operation in any intermediate position.
- Automatic as well as manual mode control.
- Automatic reflux action for quick closure by means of drop-weight and hydraulic dash pot in case of power failure or motor protective tripping.
- Adjustable closing time and adjustable closing characteristic.

PLK 3.6.6.2 The totally enclosed flanged-on gearbox shall include the following:

- Either an electo-mechanical unit comprising:
  - a totally enclosed brushless electromagnetic gear clutch for quick closing;
  - a totally enclosed directly mounted electric valve actuator with integral electric controls and auxiliary handwheel for manual operation;

- or an electro-hydraulic unit comprising:
  - an oil hydraulic lift cylinder for opening the valve;
  - a totally enclosed directly mounted electronic driven oil pump and oil reservoir. The oil pump and reservoir may be individually mounted on each valve or a centralised system may be employed to feed more than one valve and/or pumpline;
  - a solenoid operated hydraulic control valve which shall be de-energised to initiate closure of the valve.

PLK 3.6.6.3 Either of the above actuators shall also be provided with:

- limit switches for signalling the “open”, “closed” and intermediate “10%” positions and further control functions as required;
- a directly mounted oil hydraulic dashpot with the necessary control valves for adjusting closing time and operating characteristic;
- means to operate the valve manually;
- valve shaft (stub shafts) of high tensile stainless steel located in bushes of zinc-free bronze;
- a drop weight lever arm of steel with adjustable cast iron drop weight. The lever arm shall be keyed or splined to the shaft.

PLK 3.6.6.4 The overhang shaft carrying the drop weight lever arm shall be supported at its bearing housing from the foundation block.

PLK 3.6.6.5 Travel of the drop weight shall be restrained for reasons of safety at either end of the lever arm.

PLK 3.6.6.6 The control valves shall be arranged for selection of either manual-electric or automatic-electric operation controlled from the pump control console. Push buttons “open”, “close” and “stop” for piloting ghese valves, when throttling is required, shall be incorporated in each pump control console, as well as indicator lamps showing “closed” (green) “intermediate” (amber) “open” (red) positions. In addition, a selector switch “manual/automatic” shall be incorporated, the automatic position being in conjunction with pump starting. A further “test” selector switch shall bew mounted inside the panel to permit manual-electric testing of the equipment without running the pumpset.

PLK 3.6.6.7 In the “automatic” mode the valve shall open automatically from the fully closed to fully open position when the pumpset is started, likewise closing automatically, when the pumpset is to be shut down. In die “manual” mode the valve shall open automatically to at least the “10% open” intermediate position, whereafter manual selection of the valve position shall be enabled.

- Each valve shall be interlocked with the pump starter. When the pump is to be stopped, the valve shall close slowly to prevent water hammer either by means of the electric actuator or by releasing hydraulic pressure in the lift cylinder by means of control valves before the pumpset ios tripped and stopped by interlocked relays.
- Similarly, the valve shall be arranged so that the pump can be started only when the valve is fully closed. The valve shall open only when the starting operation is completed and the motor is up to speed.

PLK 3.6.6.8 The control valves shall have automatic reflux action features to close by drop-weight, controlled by an oil hydraulic dashpot, in the event of power failure or motor protective tripping. The drop-weight shall be released by a solenoid operated clutch or a valve which is constantly energised during pumping operations. Closing time and characteristics shall be adjustable to minimise water hammer.

PLK 3.6.6.9 It shall be possible to energise the “manual” mode only when:

- the associated pump is running.
- the valve is at least 10% open as indicated by the “intermediate” lamp.
- the valve is in the “test” mode

Selection of the “manual” mode shall not affect the automatic reflux action.

When the opening of the valve has been set manually, the valve shall maintain this position in the absence of any further action.

PLK 3.6.6.10 “Test” mode: With both isolating valves closed and electrically interlocked, a test facility shall be provided to enable the maintenance personnel to manually operate the valve without the pumpset running by selection from inside the pump control console.

PLK 3.6.6.11 Valves shall be designed to operate free of cavitation in intermediate positions.

PLK 3.6.7 *Electric Actuators*

PLK 3.6.7.1 When specified, in the Project Specification the valves shall be fitted with electric, motor-driven flood-proof IP 68 actuators of robust design, capable of closing the valves under all unbalanced pressures.

PLK 3.6.7.2 The Tenderer shall state the maximum torque required to operate the valve in his Tender. In determining this maximum torque an allowance shall be made for any deterioration that could be expected to occur in the bearings during the life of the valve. The actuator shall be capable of transmitting twice this maximum torque without any of its components suffering permanent damage. This shall be proven to the Engineer's satisfaction by workshop tests.

PLK 3.6.7.3 The actuators shall be capable of restraining the valve in any position under all possible conditions of operation, and shall not, in any circumstances, be capable of becoming self-motorised as a result of the dynamic torque loading on the disc or plunger.

PLK 3.6.7.4 All gearing shall be manufactured in accordance with BS 436 Class C and shall be machine cut. All components requiring lubrication shall be adequately lubricated and totally enclosed flood-proof casing fabricated in cast iron and/or die cast aluminium to suit the service weather proof casing whether the valve is to be installed in the open or under cover. Actuators shall also be fitted with mechanical stops to prevent excessive turning and shall be provided with replaceable shear pins.

PLK 3.6.7.5 Handwheels shall be fitted to all actuators. The direction of rotation to close the valve shall be clockwise when viewed from above the end of the input shaft and from the position of

operation. In addition, they shall be clearly and indelibly marked with an arrow showing the direction of closing and the words "Close" and "Toe".

PLK 3.6.7.6 Whether the valve is actuator driven or manually operated, the maximum force required to turn the handwheel at the maximum torque defined above shall not be greater than 100 N per hand at the handwheel rim. (Total effort = 200 N.) For large valves the minimum of complete revolutions of the handwheel to move the valve gate from fully open to fully closed shall not be less than 100.

PLK 3.6.7.7 All electric actuators shall be provided with reversing contactors: local and remote control shall be provided; a device making the local control non-operative shall also be provided on the relevant remote control panel.

PLK 3.6.7.8 After factory tests, the actuators shall be removed from the valve and delivered to Site in separate boxes to safeguard against damage.

PLK 3.6.8 *Protection*

All materials and workmanship to comply with relevant SANS specifications.

PLK 3.6.8.1 Internal Protection

Internal surfaces of valve bodies and discs shall be grit blasted to a Sa 2½ of SIS 05 50 00 finish. Successive coats of an approved non-toxic epoxy resin paint suitable for spray application (Copon EP 2300 or similar) shall then be applied to give a final dry film thickness of 250 µm. Drying times between successive layers shall be strictly in accordance with the requirements of the paint manufacturer.

As an alternative to the protection as specified above, the Contractor may be required to use either a solventless epoxy paint system or a fusion bonded epoxy powder coating as specified in the Project Specification.

PLK 3.6.8.2 External Protection

External surfaces of valve bodies shall be wire brushed to a A 3 of SIS 05 59 00 standard and painted with one layer zinc chromate primer (dried film thickness 50 µm). This will be followed by two alkyd-based undercoats (each coat 25 µm thick) and one alkyd-based enamel finishing coat (dried film thickness 25 µm). Final colour will be as specified by the Engineer.
Machined flanges will be painted with a protective coating of shellac or similar.

PLK 3.7 Tolerances

Tolerances as specified in the appropriate SANS or BS standards shall apply to this Contract.

PLK 4 TESTING AND INSPECTION

PLK 4.1 Testing by Manufacturer

The Manufacturer shall carry out all tests to ensure that valve materials conform to the requirements of the relevant SABS or BS Specification. These tests will not necessarily be attended by the Engineer but records must be kept and all test results shall be made available to the Engineer.

PLK 4.2 Testing by Independent Body

The Engineer may appoint an independent recognised body to conduct control tests. Samples required for such tests will be provided by the Manufacturer free of charge and sampling will be done by this body in accordance with the relevant SANS or BS Specification.

The cost of such control tests will be borne by the Employer.

PLK 4.3 Inspection

PLK 4.3.1 Visual, operational and dimensional inspection of valves as well as inspection of protective coatings will be carried out by the Engineer and/or the Manufacturer in the Manufacturers workshops prior to the despatch of valves to site.

PLK 4.3.2 Inspection by the Engineer shall in no way relieve the Manufacturer of any of his obligations to design, manufacture and supply valves strictly in accordance with the Specification.

PLK 4.4 Hydrostatic Testing

PLK 4.4.1 All hydrostatic tests will be witnessed by the Engineer and the Manufacturer will give at least one week prior notification to the Engineer of the proposed dates for such tests.

PLK 4.4.2 Valve bodies will be close end tested to at least 1,5 times the working pressure. Test pressures will be maintained for at least 5 minutes and valve bodies will be water tight in all respects at the test pressure.

PLK 4.4.3 Assembled valves will be open-end tested to 1,5 x working pressure for materials strength and soundness. Valves will be drop tight from both directions over the complete range of pressures from 0 to 1,5 x working pressure.

PLK 4.4.4 Each valve will be supplied with a test certificate certifying that it complies in all respects with the requirements of this Specification.

PLK 5 MEASUREMENT AND PAYMENT

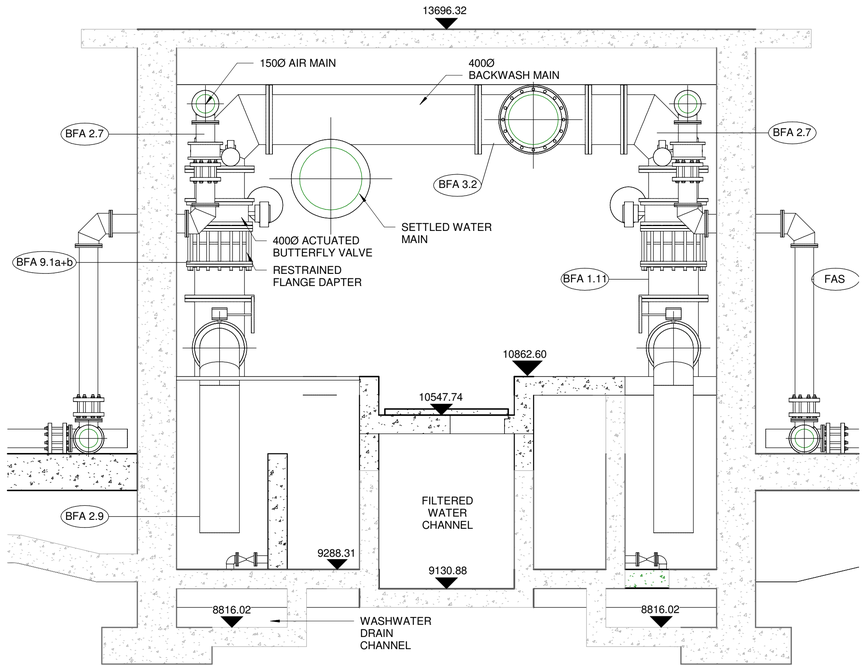
PLK 5.1 General

Tendered prices shall include for the following unless otherwise specified in the Project Specification.

- Protective coatings as specified.
- Couplings and/or jointing material for each type of valve.
- Packing and temporary protection against damage during transport and delivery.
- Temporary storage and maintenance if required.
- Delivery and storage of material on site or in a store as specified.
- Testing and inspections at Manufacturer's works.

PLK 5.2 Valves will be measured per unit of each type

END OF SECTION



SECTION G-G
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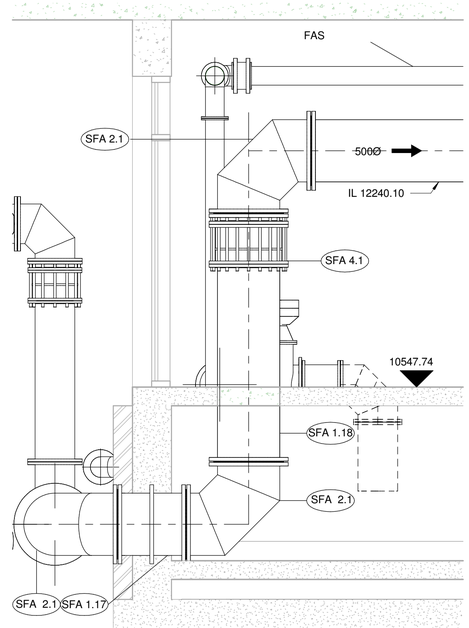

SECTION H-H
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PROJECT TITLE:
SOL PLAATJE LOCAL MUNICIPALITY INTERGRATED BULK WATER SUPPLY SYSTEM INTERVENTION

DRAWING TITLE:
RIVERTON WTW: OLD PLANT NEW FILTERED WATER OUTLET SYSTEM, PIPEWORK & DETAILS

Sol Plaatje Municipality
We Serve

0 50 100
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ORIGINAL DRAWING SCALE:	1 : 25	ORIGINAL DRAWING SHEET SIZE:	A1

SURVEYED		DESIGNED	A HLASANE
DRAWN	V MABONA		
COORD SYSTEM		DATE	SEPT 2023

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DATE:
CLIENT DRAWING No.:
CLIENT REF No.:

APPROVED ON BEHALF OF BIGEN:
PRACTITIONER: Marthinus Hlasane
REVIEWER: Yvushky van der Merwe

DRAWING No.: 3338.12.00.WFA.14.X003
VERSION: 2

3338.12.00.WFA.14.X003

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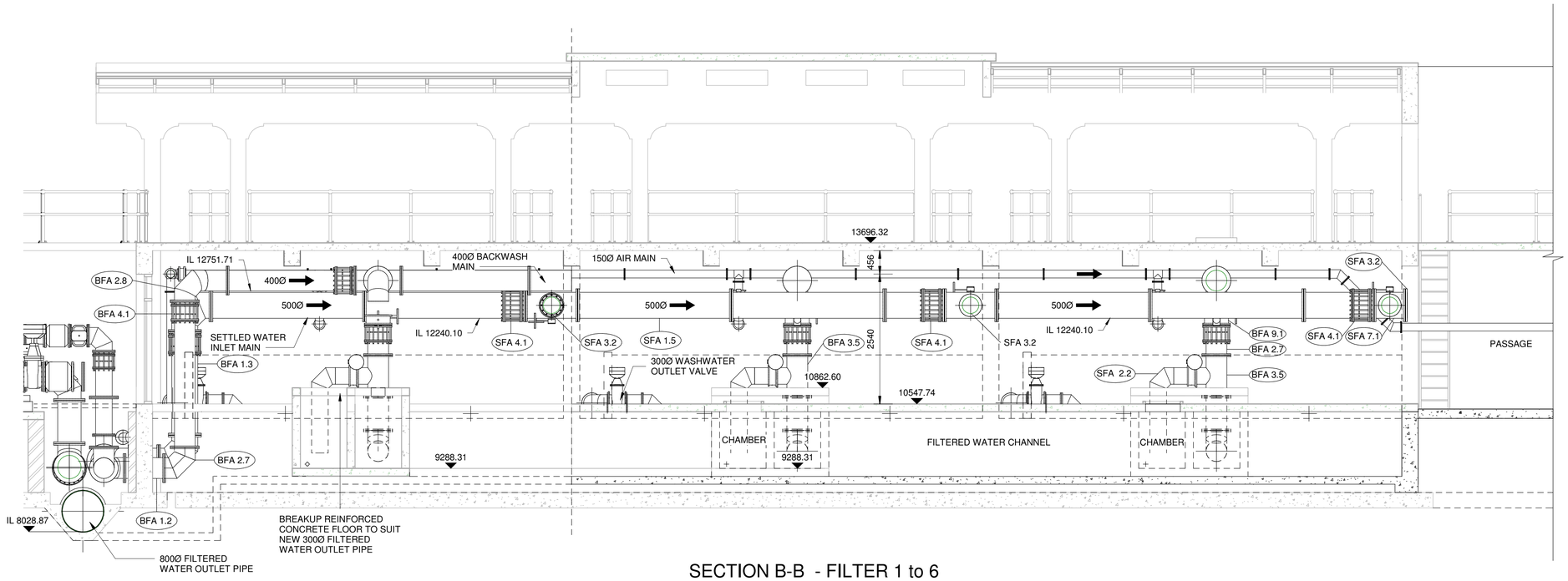

SECTION B-B - FILTER 1 to 6

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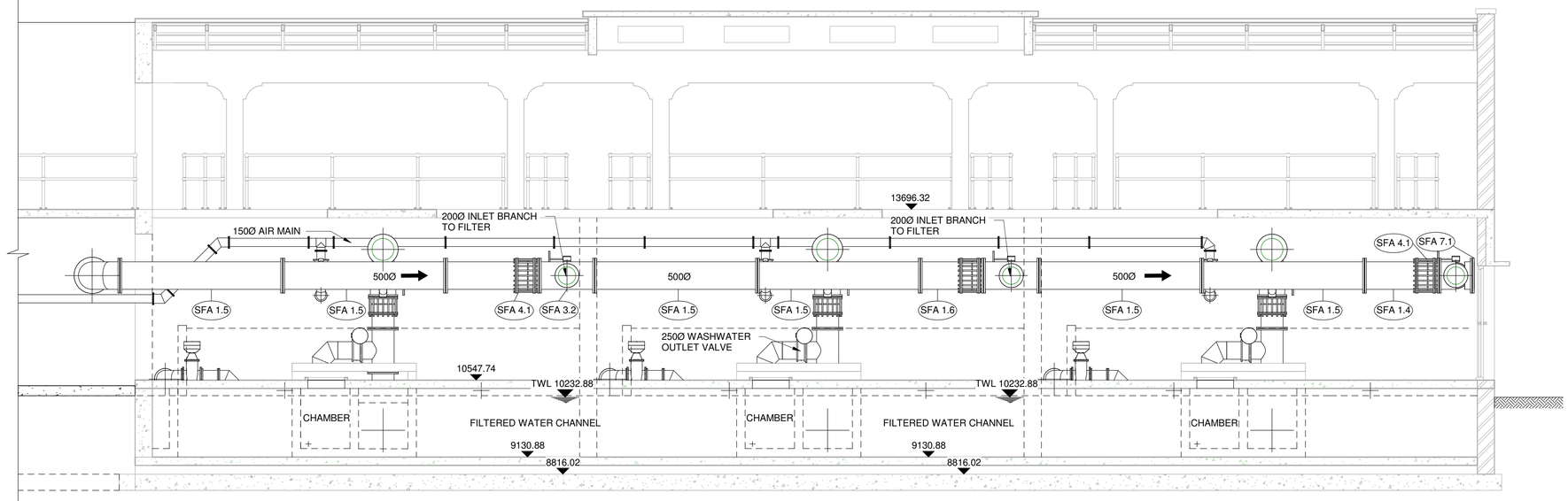

SECTION B-B - FILTER 7 to 12

SCALE 1 : 50

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PROJECT TITLE:
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RIVERTON WTW: OLD PLANT NEW PIPEWORK FILTERS 1 to 12 PIPEWORK & DETAILS

Sol Plaatje Municipality
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ORIGINAL DRAWING SCALE:	1 : 50	ORIGINAL DRAWING SHEET SIZE:	A1

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DRAWN	V MABONA		
COORD SYSTEM		DATE	SEPT 2023

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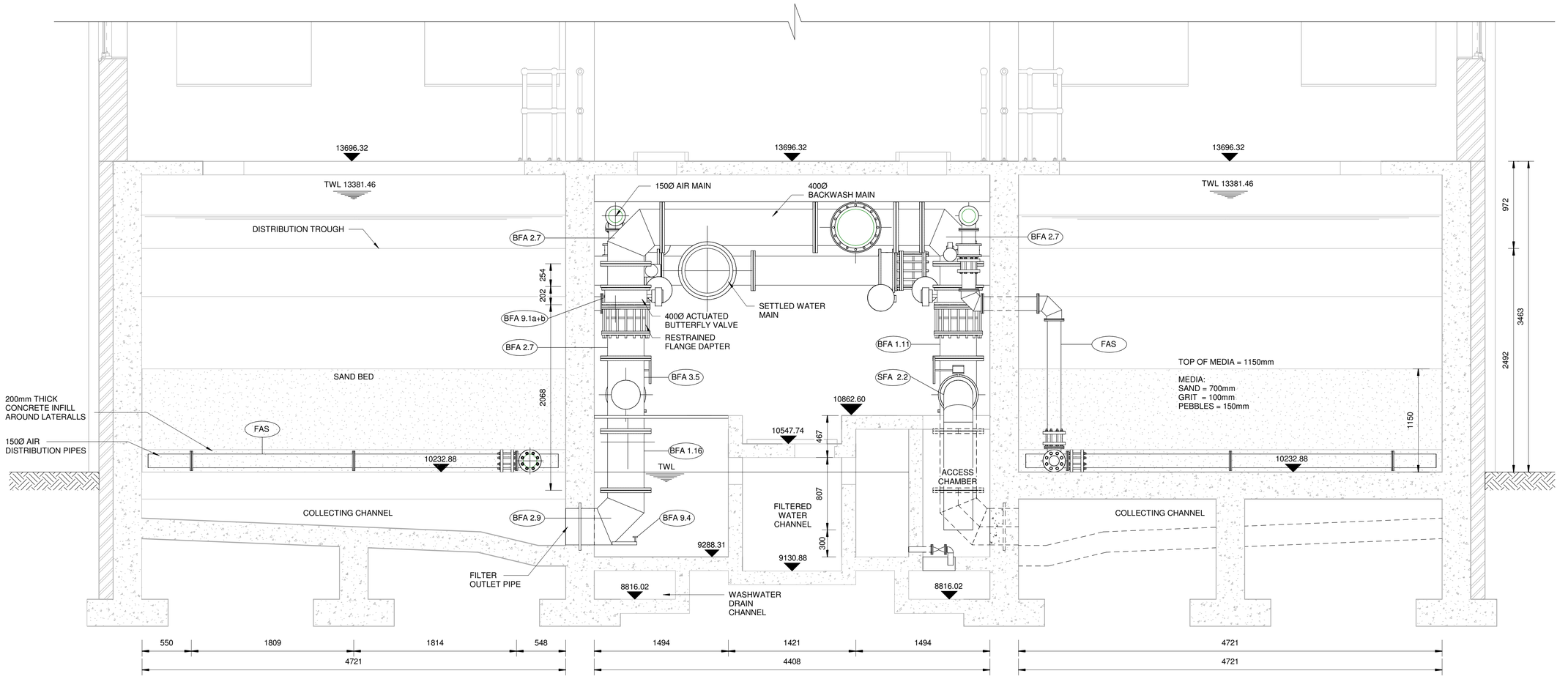
CONTRACTOR: Mankone Hlasane — Signed by: Mankone Anne Hlasane, ANNA.HLASANE@BIGENGROUP.COM, 29-10/2024 13:53:19(UTC+02:00)
REVIEW: Hayley van der Merwe — Signed by: hayley van der Merwe, hayley.vandermerwe@bigengroup.com, 29-10/2024 21:16:44(UTC+02:00)

DRAWING No.: 3338.12.00.WFA.14.X002
VERSION: 2

3338.12.00.WFA.14.X002



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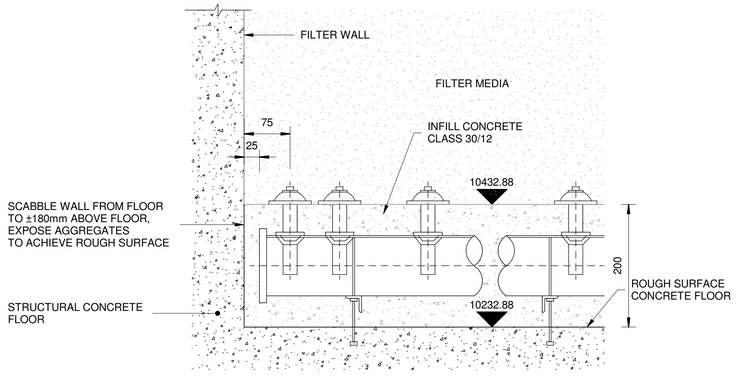

TYPICAL FLOOR DETAIL

SCALE 1 : 5

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CLIENT DRAWING No.:
CLIENT REF No.:

APPROVED ON BEHALF OF BIGEN:
PROJECT MANAGER: Mankone Hlasane
REVIEWER: Ivaylny van der Merwe

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VERSION: 2

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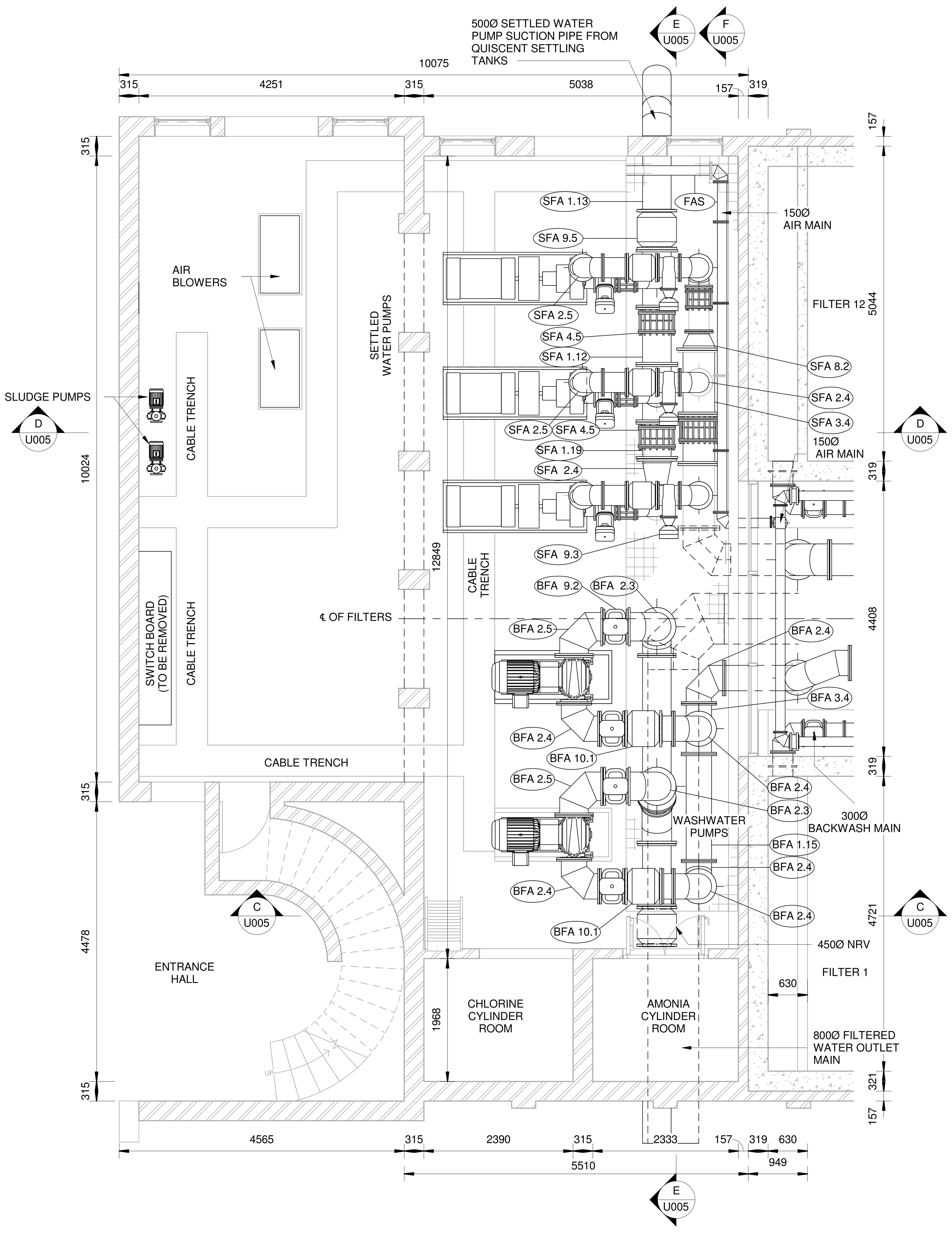
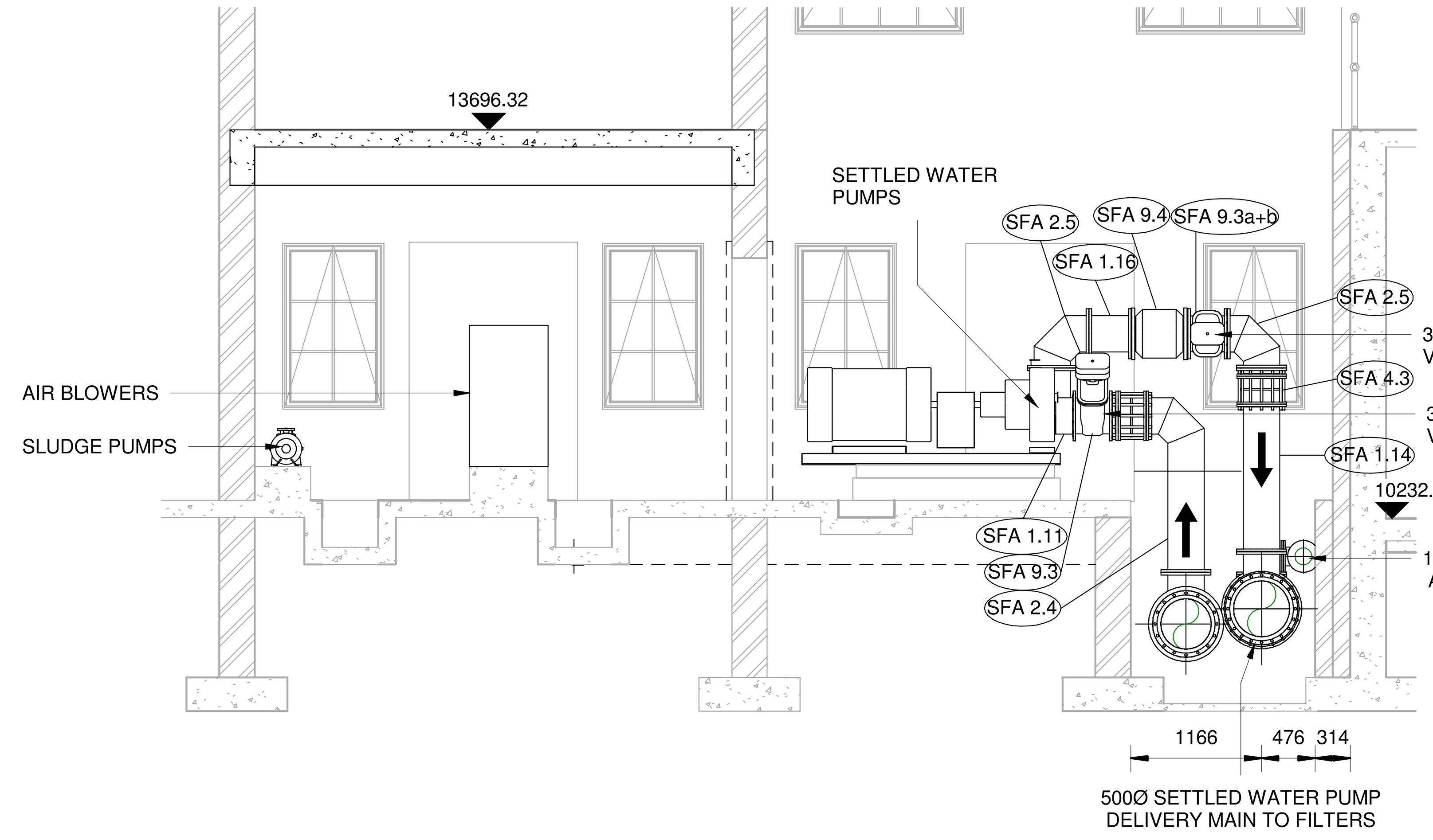


LOWER FLOOR PLAN - MACHINERY ROOM

SCALE 1 : 50



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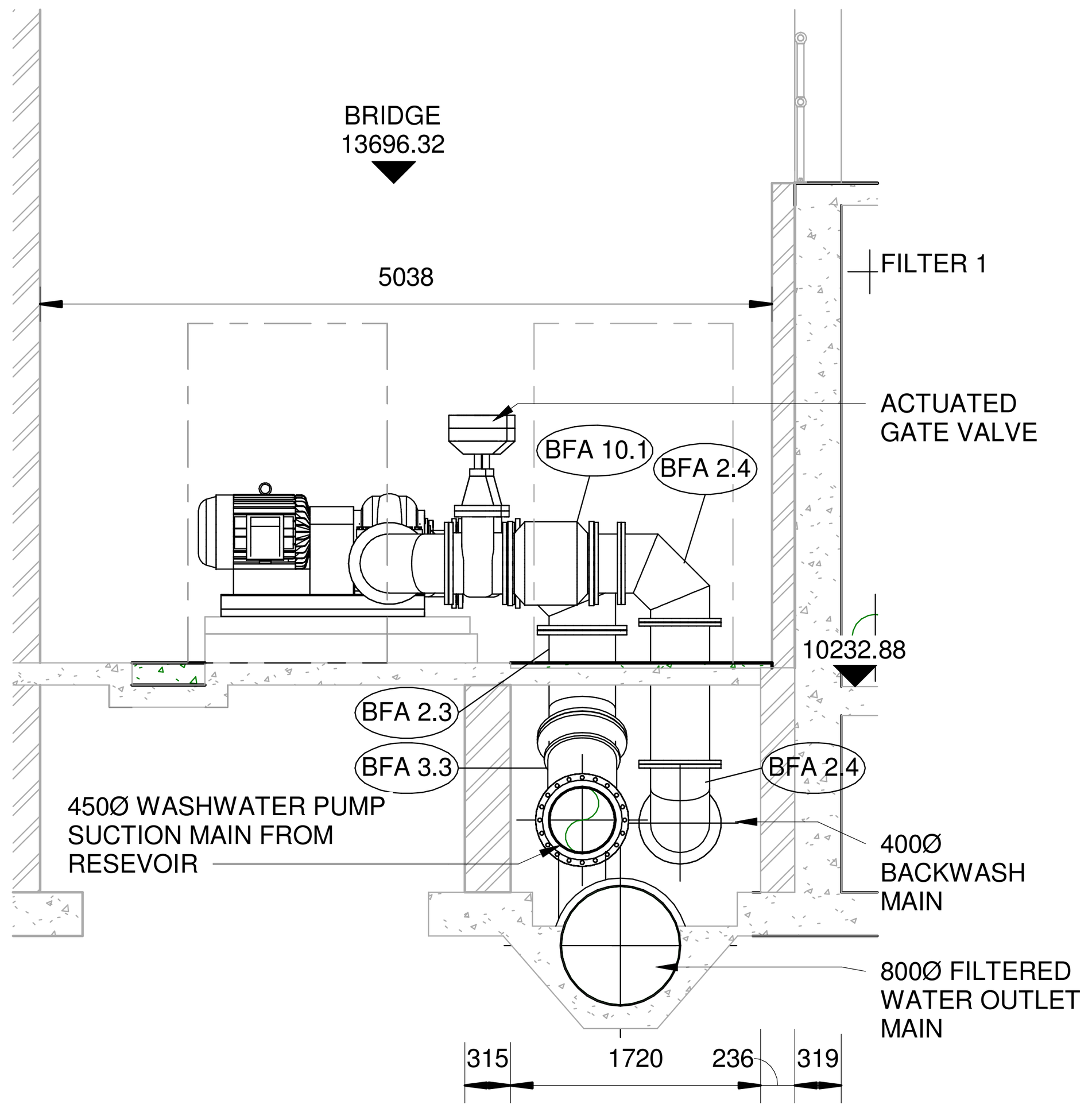

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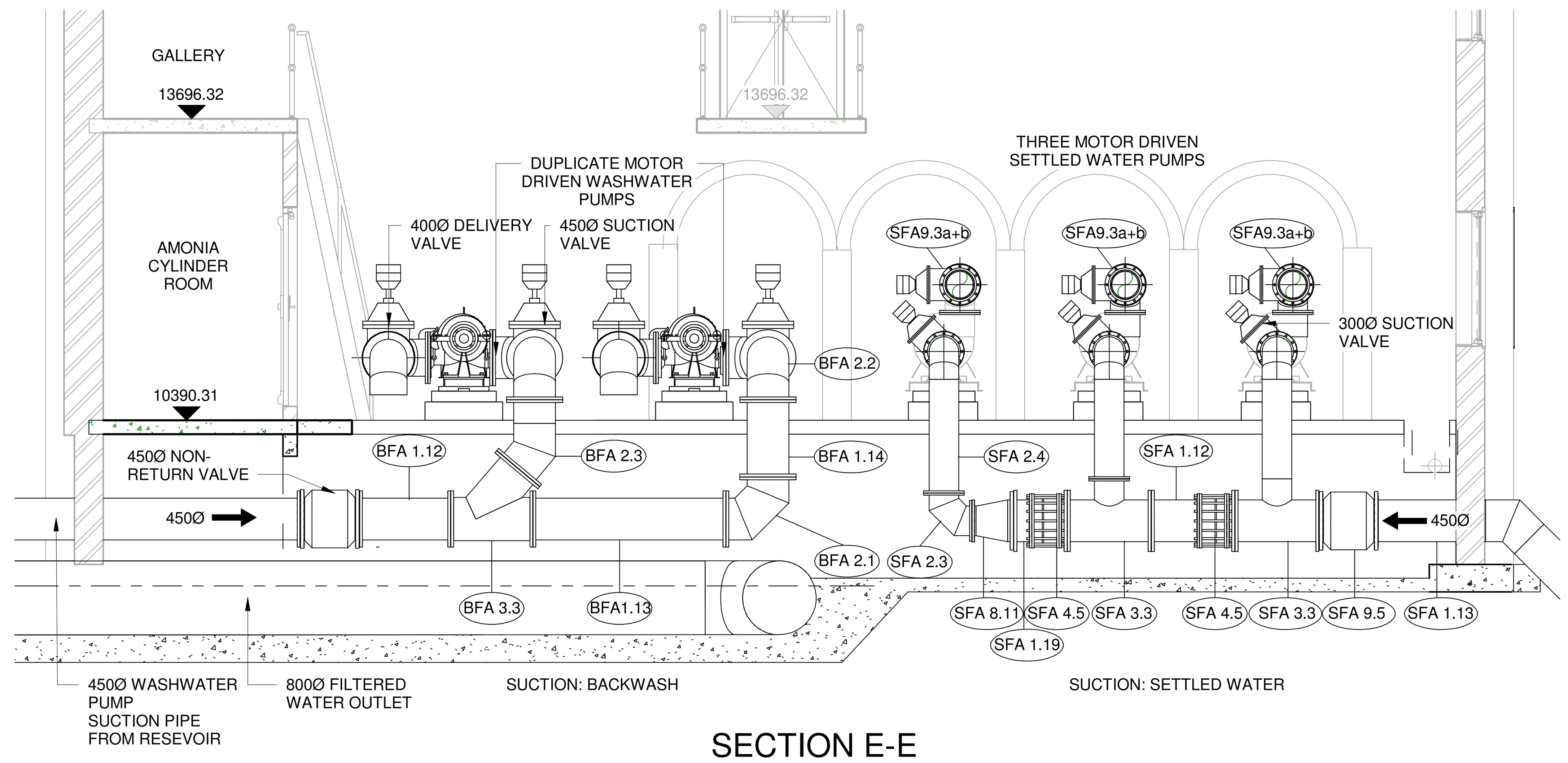

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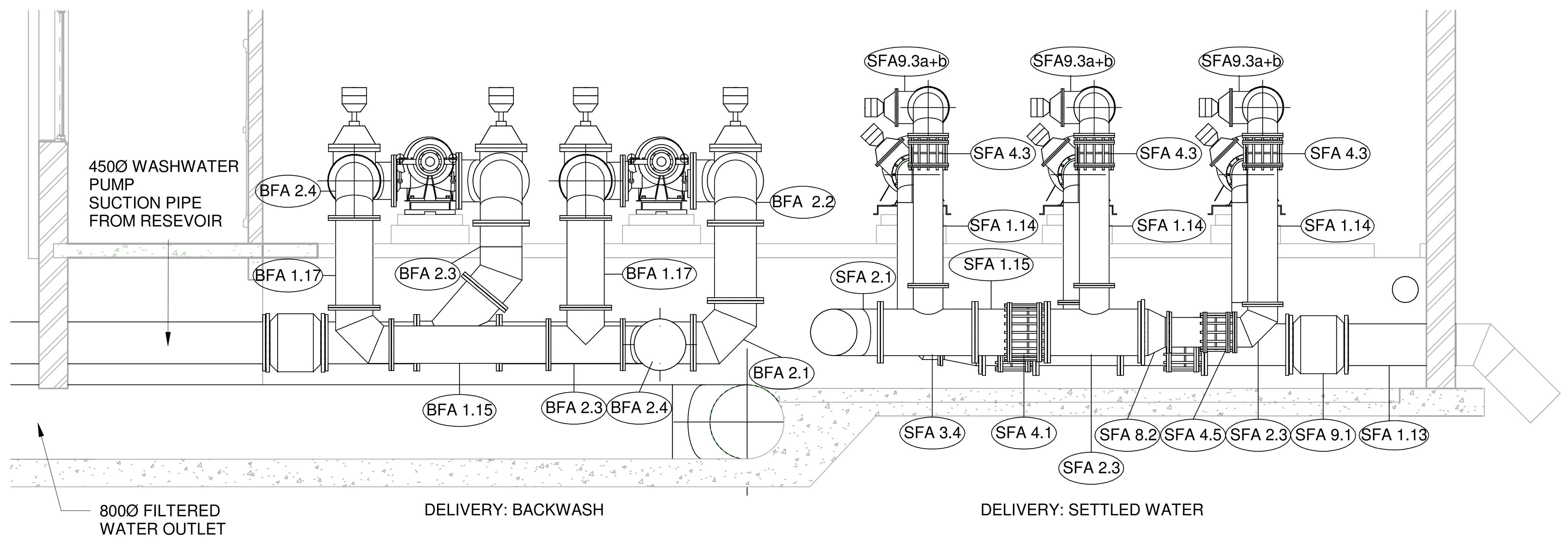

SECTION F-F

SCALE 1 : 50

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SOL PLAATJE LOCAL MUNICIPALITY INTERGRATED BULK WATER SUPPLY SYSTEM INTERVENTION

DRAWING TITLE:
RIVERTON WTW: OLD PLANT NEW PIPEWORK MACHINERY ROOM PLAN & SECTIONS

Sol Plaatje Municipality — We Serve

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ORIGINAL DRAWING SCALE:	1 : 50	ORIGINAL DRAWING SHEET SIZE:	A1

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DRAWN	V MABONA		
COORD SYSTEM		DATE	SEPT 2023

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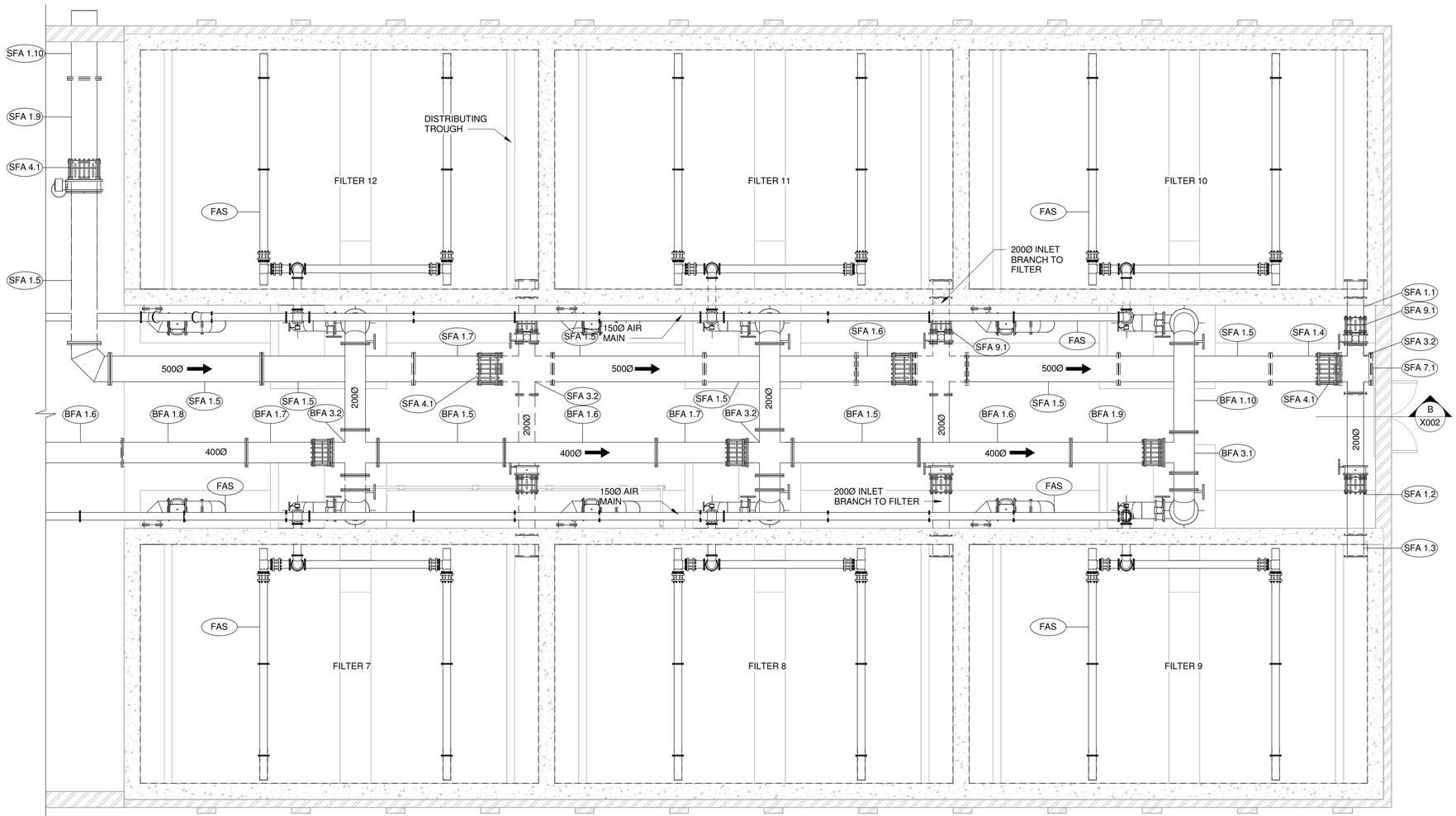

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RIVERTON WTW: OLD PLANT NEW PIPEWORK FILTERS 7 to 12 UPPER GALLERY PLAN

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CLIENT REF No.:

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29/10/2024 21:16:17(UTC+02:00)

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VERSION: **1**

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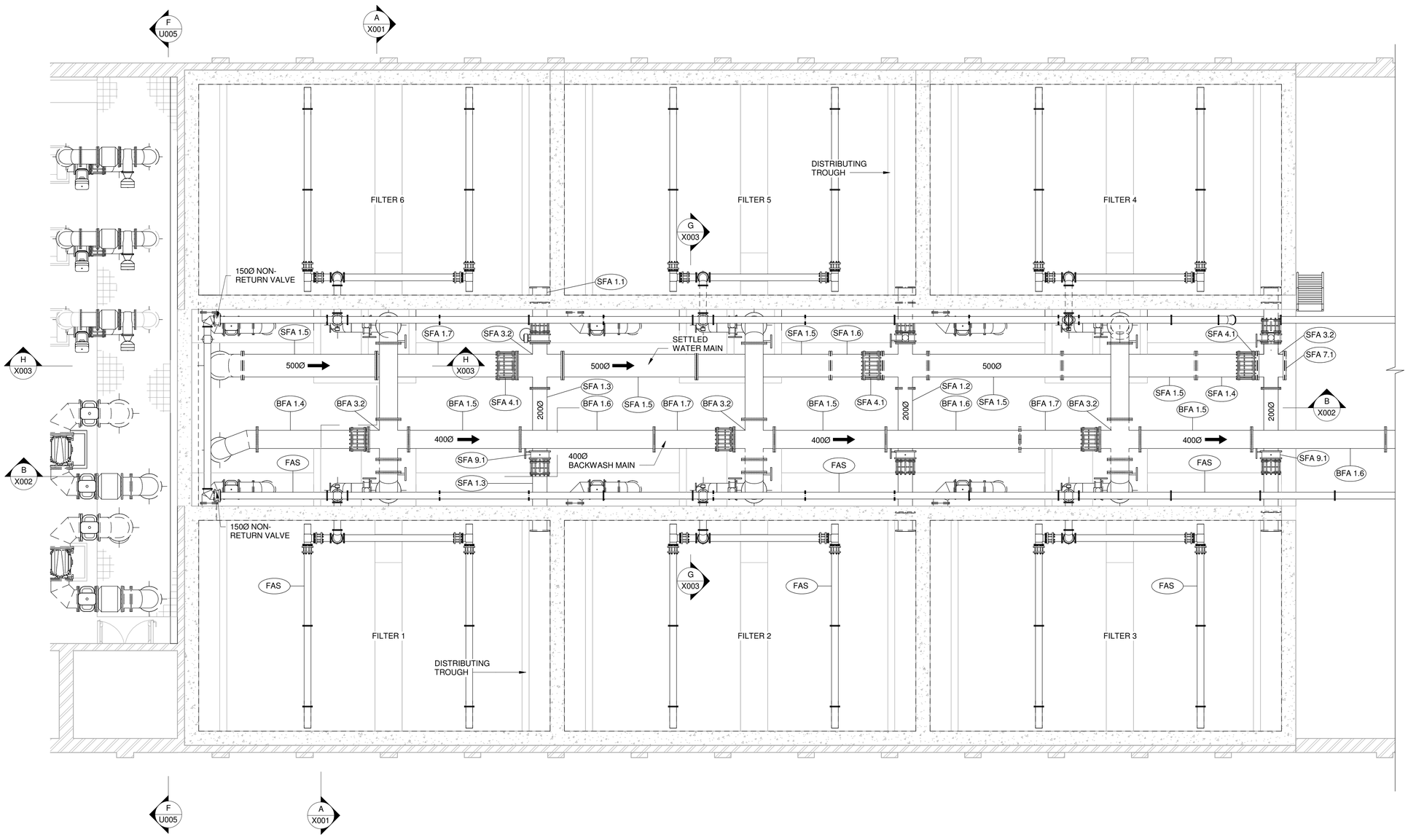

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DRAWN	V MABONA		
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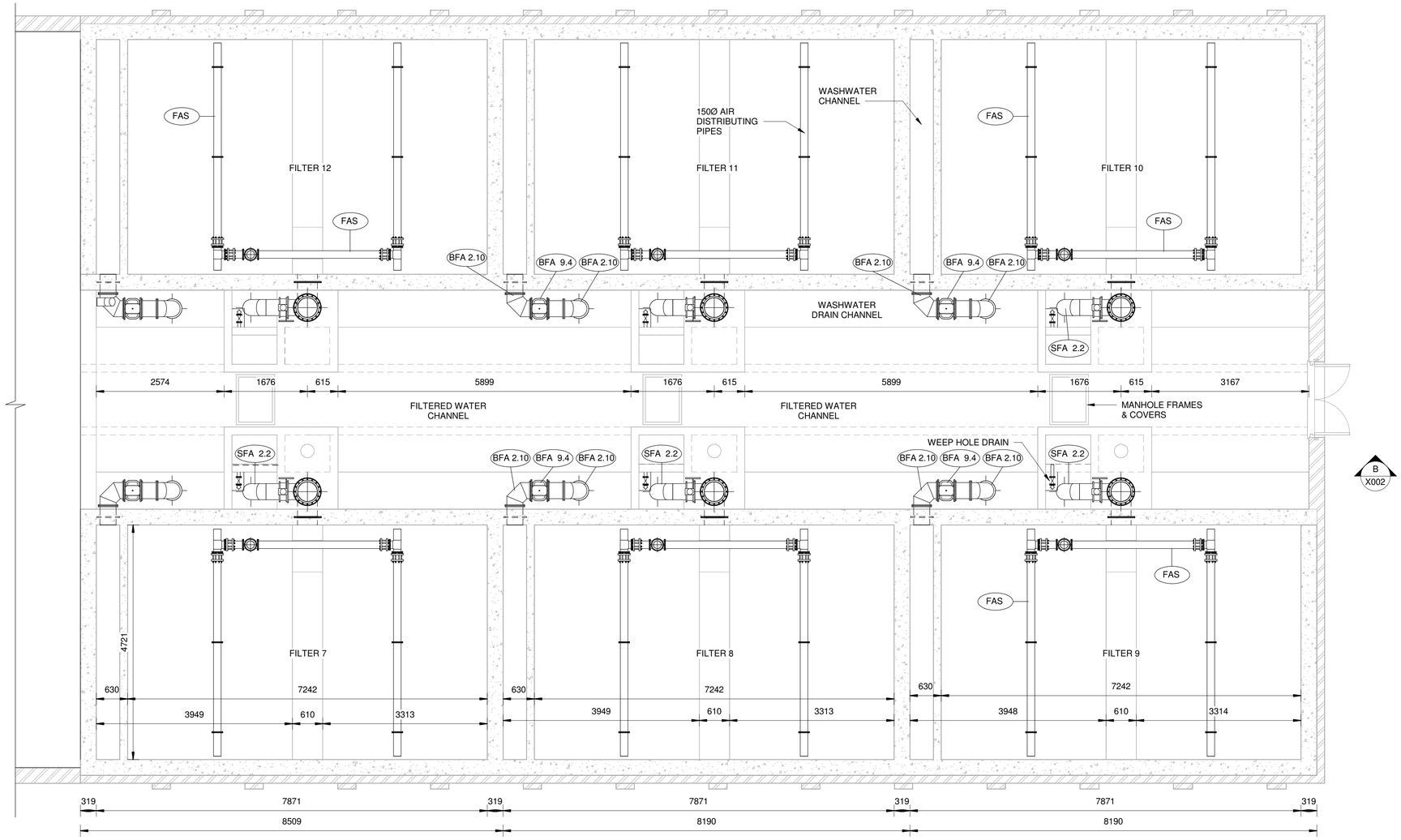

LOWER FLOOR PLAN - 7 - 12

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DRAWING TITLE:
RIVERTON WTW: OLD PLANT NEW PIPEWORK FILTERS 7 to 12 LOWER GALLERY PLAN

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PRACTITIONER: Marthinus Hlasane
Signed by: Marthinus Anna Hlasane, ANNA.HLASANE@BIGENGROUP.COM, 09/10/2024 19:52:14(UTC+02:00)
REVIEWER: Hayley van der Merwe
Signed by: hayley van der Merwe, hayley.vandermerwe@bigengroup.com, 09/10/2024 21:15:58(UTC+02:00)

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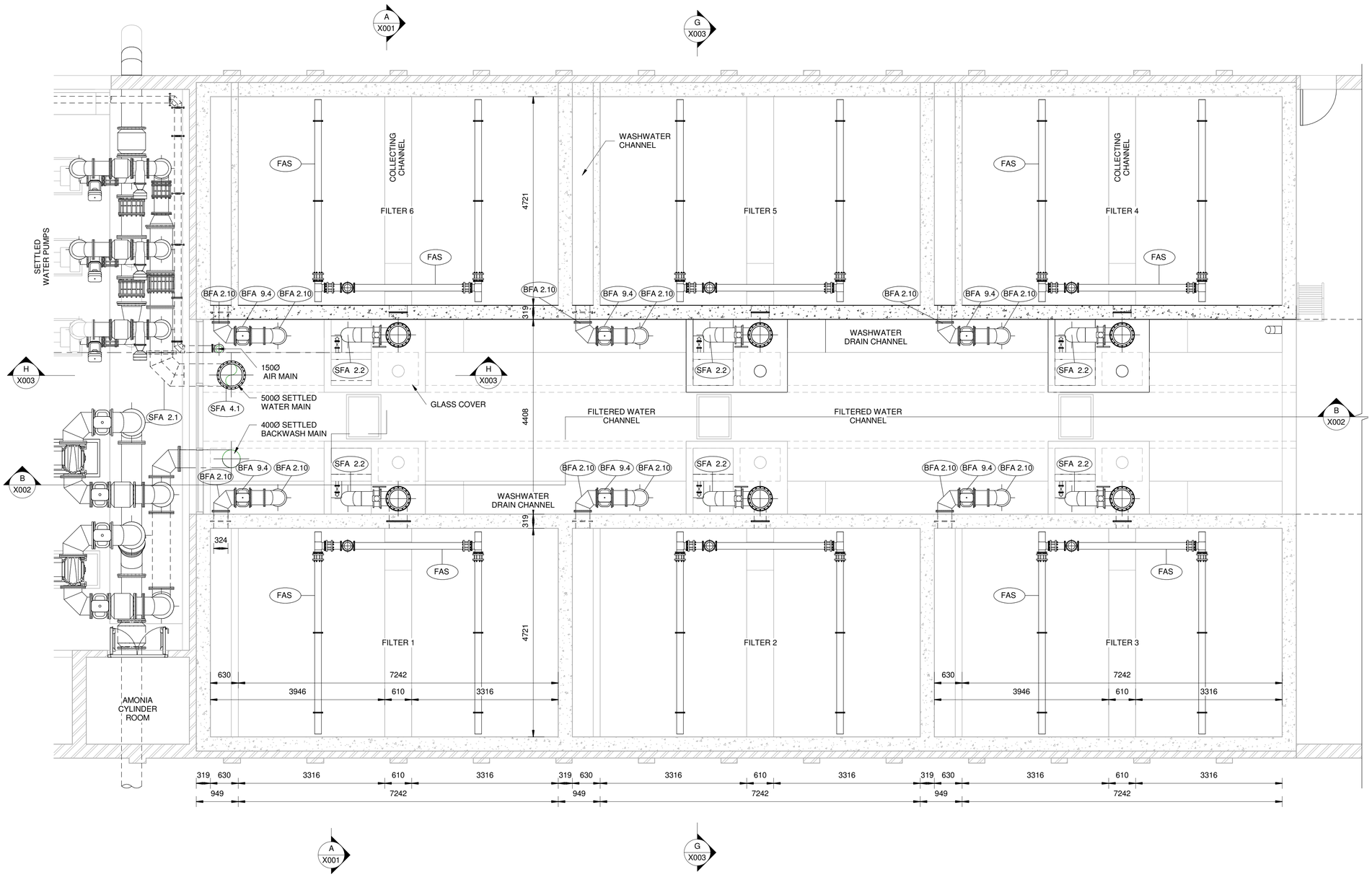

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DRAWING TITLE:
RIVERTON WTW: OLD PLANT NEW PIPEWORK FILTERS 1 to 6 LOWER GALLERY PLAN

Sol Plaatje Municipality
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COORD SYSTEM		DATE	SEPT 2023

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CLIENT REF No.:

APPROVED ON BEHALF OF BIGEN:
PRACTITIONER: Mandisa Hlasane — Signed by: Mandisa Anna Hlasane, ANNA.HLASANE@BIGENGROUP.COM, 29/10/2024 13:53:02(UTC+02:00)
REVIEWER: Hayley van der Merwe — Signed by: hayley van der Merwe, hayley.vandermerwe@bigengroup.com, 29/10/2024 21:15:56(UTC+02:00)

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VERSION: **1**

3338.12.00.WFA.14. U001

NOTES:

1. **PIPE ITEM DIMENSIONS – ON LAYOUT DWGS AS REFERRED TO.**

   NB – SAID DIMENSIONS MUST BE VERIFIED ON SITE PRIOR TO ORDERING OF SUCH ITEMS ESPECIALLY WITH REGARD TO NEW AND EXISTING PIPEWORK CONNECTIONS AS WELL AS NEW PIPEWORK IN EXISTING STRUCTURES.

2. **DIMENSIONS FOR EQUIPMENT – VALVES, FLOW METERS, PRELIMINARY SELECTED PUMPS, ETC. WERE OBTAINED FROM CATALOGUES FOR PIPEWORK LAYOUT DESIGNS.**

   SUCH DIMENSIONS MAY BE INCORRECT ONCE MECHANICAL EQUIPMENT SUBMITTED BY CONTRACTOR HAS BEEN APPROVED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CHECK ALL AFFECTED PIPE ITEM DIMENSIONS PRIOR TO ORDERING ANY ITEMS.

3. **UNLESS SHOWN OTHERWISE:**
   ALL VALVES, FLOW METERS, STRAIGHT AND STEPPED COUPLINGS AS WELL AS FLANGE ADAPTERS TO BE FOR 1000 KPA MAXIMUM WORKING PRESSURE.

4. **PIPE ITEM MATERIAL**

ST	GRADE 300 WA STEEL
X52	GRADE X52 STEEL
316L	GRADE 316L STAINLESS STEEL FLANGES EX 300WA OR AS SPECIFIED FLANGES ON SS ITEMS: SUBMERGED – 316L SS NOT SUBMERGED – 300WA SLUICE & CHANNEL GATES: –SUBMERGED PARTS, ANCHORS & SPINDLE EX SS –OPERATING GEAR, BRIDGES & PEDESTALS ABOVE WATER LINE EX ST
.../6,0	PIPE ITEM WALL THICKNESS FOR SPECIFIC MATERIAL
AL	ALUMINIUM
NB	DUAL MATERIAL SPECIFIED FOR ONE ITEM – SS PORTION TO BE CAST INTO CONCRETE AND MUST EXTEND 150 mm MIN BEYOND DRY CONCRETE FACE OR AS INDICATED.

5. **ABBREVIATIONS**

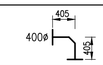
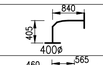
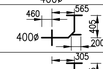
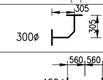
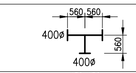
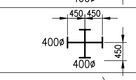
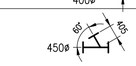
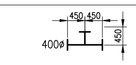
CORROSION PROTECTION
FACTORY APPLICATION

EP	EPOXY PAINT
FBE	FUSION BONDED EPOXY
G	HOT–DIP GALVANISING
MPEP	MULTI–PURPOSE EPOXY PAINT
RB	REINFORCED BITUMEN

ON SITE APPLICATION, AFTER INSTALLATION

RPU	RE–COATABLE POLYURETHANE TO CLIENT'S COLOUR CODING SPECIFICATION
TW	TAPE WRAP

C	CORROSION PROTECTION COATING
COR PR	CORROSION PROTECTION
CTO	CAP TOP – OPERATED
CTS	PIPE LENGTH CUT TO SUIT ON SITE
DP	DIFFERENTIAL PRESSURE
DWG	DRAWING
EA	ELECTRIC ACTUATOR
F	FLANGED
F/F	FACE TO FACE DIMENSION
FA	FLANGE ADAPTOR
FDT	FLANGE DRILLING TABLE
GS	GALVANISED STEEL
HD	HEAVY DUTY – GALVANISED STEEL PIPEWORK
HPWB	HANDWHEEL PEDESTAL ON WALL SUPPORT BRACKET
HW	HANDWHEEL
HWO	HANDWHEEL–OPERATED
IF	INSULATED FLANGE CONNECTION
KGV	KNIFE GATE VALVE
LF	LOOSE FLANGE – WELDED ONTO PIPE END AFTER CUTTING PIPE LENGTH TO SUIT ON SITE – NB: INSTALLATION POSITION AS INDICATED ON LAYOUT DRAWING TO REMAIN UNCHANGED
LH	LEFT HAND SIDE
LR	LONG RADIUS
MD	MEDIUM DUTY – GALVANISED STEEL PIPEWORK
MR	MEDIUM RADIUS
MWP	MAXIMUM WORKING PRESSURE
OD	OUTSIDE DIAMETER
PCD	PITCH CIRCLE DIAMETER FOR FLANGES
PE	PLAIN PIPE END
PF	PUDDLE FLANGE – UNLESS OTHERWISE SPECIFIED, ALL TO BE EX 10 mm THICK GRADE 300 WA STEEL. PF OD 100 mm GREATER THAN PIPE OD. NOT TO BE DRILLED
PMHP	PLATFORM–MOUNTED HANDWHEEL PEDESTAL
R	RADIUS
RB	RESTRAINING BOLT
RC	REINFORCED CONCRETE
RF	RESTRAINING FLANGE
RH	RIGHT HAND SIDE
RSV	RESILIENT SEAL GATE VALVE
S	CORROSION PROTECTION SITE APPLICATION
SB	SOLID BODY
S + S	SCREWED + SOCKETED
SE	SPINDLE EXTENSION
SHPWB	STUB HANDWHEEL PEDESTAL ON WALL SUPPORT BRACKET
SO	APPROPRIATE SOCKET WITH PLUG WELDED ONTO PIPE ITEM IN POSITION AS SPECIFIED FOR INSTRUMENTATION INSTALLATION
SP	STRAIGHT PIPE
SR–C	STRAIGHT COUPLING
SS	STAINLESS STEEL
ST–C	STEPPED COUPLING
SW	CERTAIN ITEMS WELDED TOGETHER ON SITE (SITE WELDING). PREPARATION OF ENDS FOR WELDING MUST COMPLY WITH THE SPECIFICATION – NB – CORROSION PROTECTION TO BE REPAIRED TO ENGINEER'S APPROVAL
t	PLATE THICKNESS
WGV	WEDGE GATE VALVE
WT	PIPE WALL THICKNESS

Revisions	Item No	Total	Refer Dwg	Dia Left	Dia Right	Dia Brch 1	Dia Brch 2	End Left	End Right	End Brch 1	End Brch 2	Bend Angle (Degree)	Bend Radius	Material	Flange Spec/Drilling SABS 1123 (1977)	Corrosion Protection: Internal Lining	Corrosion Protection: External Coating	Corrosion Protection: Site Application	Description	Dimensions
WFA – FILTERS: BACKWASH SYSTEM – DWG. 3338.12.00.WFA.14.A001, A002, U001, U002, U003, U004, X001, X002 AND X003																				
	BFA 2.7	15	U005, X002	400	400			F	F			90	405	ST/4.5	1000/3	EP	EP	RPU	3–SEGMENT ELBOW	
	BFA 2.8	1	X002	400	400			F	F			90	405	ST/4.5	1000/3	EP	EP	RPU	3–SEGMENT ELBOW WITH 21° HORIZONTAL OFF–SET	
	BFA 2.9	12	X001	400	400			F	F			90	405	ST/4.5	1000/3	EP	EP	RPU	3–SEGMENT ELBOW WITH PF AND 100ø DRAIN PIPE	
	BFA 2.10	24	X001	300	300			F	F			90	305	ST/4.5	1000/3	EP	EP	RPU	3–SEGMENT ELBOW	
	BFA 3.1	2	U004, U005	400	400	400		F	F	F				ST/4.5	1000/3	EP	EP	RPU	TEE PIECE	
	BFA 3.2	5	U003, U004	400	400	400	400	F	F	F	F			ST/4.5	1000/3	EP	EP	RPU	EQUAL CROSS	
	BFA 3.3	1	U005	450	450	450		F	F	F				ST/4.5	1000/3	EP	EP	RPU	60° LATERAL TEE PIECE	
	BFA 3.4	1	U005	400	400	400		F	F	F				ST/4.5	1000/3	EP	EP	RPU	EQUAL TEE	
	BFA 4.1	18	U003, U004, X001											ST	1000/3	EP	EP	RPU	400 DIA FA	STANDARD
	BFA 9.1a	12	U003, U004, X001	400										ST	1000/3	FBE	FBE	RPU	400 DIA FLANGED ISOLATING BUTTERFLY VALVE WITH RH GEARBOX FOR 1000kPa MWP	
	BFA 9.1b	12	U003, U004, X001											ST					SUITABLE OPEN/CLOSE ELECTRIC ACTUATOR FOR ITEM BFA 9.1a	
	BFA 9.2	2	U003, U004, X001	450										ST	1000/3	FBE	FBE	RPU	450 DIA FLANGED NON RISING SPINDLE RSV TO SANS 664	
	BFA 9.3	2	U005, X002	400										ST/4.5	1000/3	EP	EP	RPU	400 DIA FLANGED NON RISING SPINDLE RSV TO SANS 664	
	BFA 9.4	12	U003, X002	100										ST/4.5	1000/3	EP	EP	RPU	100 DIA FLANGED NON RISING SPINDLE RSV TO SANS 664	
	BFA 10.1	2	U005	400										ST/4.5	1000/3	EP	EP	RPU	400 DIA FLANGED, SLANTED SEAT TILTING DISK CHECK VALVE	
	BFA 10.2	1	U005	450										ST/4.5	1000/3	EP	EP	RPU	450 DIA FLANGED, SLANTED SEAT TILTING DISK CHECK VALVE	
	FAS	1	U003, U004, X001, X002																APPROX 72m 150 DIA MED DUTY GS SANS 62 STEEL (4,24mm WT) AND APPROX 120m 150 DIA SS (3,4mm WT) FILTER AIR SCOUR PIPEWORK. • SS SECTIONS APPLY TO SUBMERGED PIPEWORK WITH SUITABLE END TO CONNECT ONTO PIPEWORK AS SPECIFIED BY FILTER FLOOR SPECIALIST • 12 APPROVED 150 DIA ELECTRIC ACTUATED ISOLATING BUTTERFLY VALVES: – 1000 KPA MWP – SOLID BODY – DRILLING TO SANS 1123 (1977), TABLE 1000/3 – RH SIDE GEARBOX • 12 NO FA – DOWNSTREAM END OF ISOLATING VALVE • PIPEWORK IN FILTER GALLERY – FLANGE CONNECTED WITH APPROVED ANCHOR SECURING TO STRUCTURE • CORROSION PROTECTION – IN FILTER GALLERY AND EXPOSED TO SUNLIGHT – HOT DIP GALVANISED + RPU – SS: L–EP, C–EP	

VERSION

No.	DATE	DESCRIPTION	AUTH. BY

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Doing good while doing business

PROJECT TITLE:
SOL PLAATJE LOCAL MUNICIPALITY INTERGRATED BULK WATER SUPPLY SYSTEM INTERVENTION

DRAWING TITLE:
RIVERTON WTW: OLD PLANT FILTERS PIPE ITEM AND VALVE SCHEDULES

Sol Plaatje Municipality
We Serve

0 50 100
100mm ON ORIGINAL DRAWING

ORIGINAL DRAWING SCALE: AS SHOWN
ORIGINAL DRAWING SHEET SIZE: A1

SURVEYED		DESIGNED	A Hlasane
DRAWN	A Hlasane		
COORD SYSTEM		DATE	September 2023

APPROVED ON BEHALF OF CLIENT:
NAME:
DATE:

CLIENT DRAWING No.:
CLIENT REF No.:

APPROVED ON BEHALF OF BIGEN:
PRACTITIONER: Mankone Hlasane
RET'ENER: Hayley van der Merwe

DRAWING No.: **3338.12.00.WFA.14.M004**
VERSION: **2**

3338.12.00.WFA.16.M004

NOTES:

1. **PIPE ITEM DIMENSIONS – ON LAYOUT DWGS AS REFERRED TO.**

   NB – SAID DIMENSIONS MUST BE VERIFIED ON SITE PRIOR TO ORDERING OF SUCH ITEMS ESPECIALLY WITH REGARD TO NEW AND EXISTING PIPEWORK CONNECTIONS AS WELL AS NEW PIPEWORK IN EXISTING STRUCTURES.

2. **DIMENSIONS FOR EQUIPMENT – VALVES, FLOW METERS, PRELIMINARY SELECTED PUMPS, ETC. WERE OBTAINED FROM CATALOGUES FOR PIPEWORK LAYOUT DESIGNS.**

   SUCH DIMENSIONS MAY BE INCORRECT ONCE MECHANICAL EQUIPMENT SUBMITTED BY CONTRACTOR HAS BEEN APPROVED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CHECK ALL AFFECTED PIPE ITEM DIMENSIONS PRIOR TO ORDERING ANY ITEMS.

3. **UNLESS SHOWN OTHERWISE:**
   ALL VALVES, FLOW METERS, STRAIGHT AND STEPPED COUPLINGS AS WELL AS FLANGE ADAPTERS TO BE FOR 1000 KPA MAXIMUM WORKING PRESSURE.

4. **PIPE ITEM MATERIAL**

ST	GRADE 300 WA STEEL
X52	GRADE X52 STEEL
316L	GRADE 316L STAINLESS STEEL FLANGES EX 300WA OR AS SPECIFIED FLANGES ON SS ITEMS: SUBMERGED – 316L SS NOT SUBMERGED – 300WA SLUICE & CHANNEL GATES: –SUBMERGED PARTS, ANCHORS & SPINDLE EX SS –OPERATING GEAR, BRIDGES & PEDESTALS ABOVE WATER LINE EX ST
.../6,0	PIPE ITEM WALL THICKNESS FOR SPECIFIC MATERIAL
AL	ALUMINIUM
NB	DUAL MATERIAL SPECIFIED FOR ONE ITEM – SS PORTION TO BE CAST INTO CONCRETE AND MUST EXTEND 150 mm MIN BEYOND DRY CONCRETE FACE OR AS INDICATED.

5. **ABBREVIATIONS**

CORROSION PROTECTION
FACTORY APPLICATION

EP	EPOXY PAINT
FBE	FUSION BONDED EPOXY
G	HOT–DIP GALVANISING
MPEP	MULTI–PURPOSE EPOXY PAINT
RB	REINFORCED BITUMEN

ON SITE APPLICATION, AFTER INSTALLATION

RPU	RE–COATABLE POLYURETHANE TO CLIENT'S COLOUR CODING SPECIFICATION
TW	TAPE WRAP

C	CORROSION PROTECTION COATING
COR PR	CORROSION PROTECTION
CTO	CAP TOP – OPERATED
CTS	PIPE LENGTH CUT TO SUIT ON SITE
DP	DIFFERENTIAL PRESSURE
DWG	DRAWING
EA	ELECTRIC ACTUATOR
F	FLANGED
F/F	FACE TO FACE DIMENSION
FA	FLANGE ADAPTOR
FDT	FLANGE DRILLING TABLE
GS	GALVANISED STEEL
HD	HEAVY DUTY – GALVANISED STEEL PIPEWORK
HPWB	HANDWHEEL PEDESTAL ON WALL SUPPORT BRACKET
HW	HANDWHEEL
HWO	HANDWHEEL–OPERATED
IF	INSULATED FLANGE CONNECTION
KGV	KNIFE GATE VALVE
LF	LOOSE FLANGE – WELDED ONTO PIPE END AFTER CUTTING PIPE LENGTH TO SUIT ON SITE – NB: INSTALLATION POSITION AS INDICATED ON LAYOUT DRAWING TO REMAIN UNCHANGED
LH	LEFT HAND SIDE
LR	LONG RADIUS
MD	MEDIUM DUTY – GALVANISED STEEL PIPEWORK
MR	MEDIUM RADIUS
MWP	MAXIMUM WORKING PRESSURE
OD	OUTSIDE DIAMETER
PCD	PITCH CIRCLE DIAMETER FOR FLANGES
PE	PLAIN PIPE END
PF	PUDDLE FLANGE – UNLESS OTHERWISE SPECIFIED, ALL TO BE EX 10 mm THICK GRADE 300 WA STEEL. PF OD 100 mm GREATER THAN PIPE OD. NOT TO BE DRILLED
PMHP	PLATFORM–MOUNTED HANDWHEEL PEDESTAL
R	RADIUS
RB	RESTRAINING BOLT
RC	REINFORCED CONCRETE
RF	RESTRAINING FLANGE
RH	RIGHT HAND SIDE
RSV	RESILIENT SEAL GATE VALVE
S	CORROSION PROTECTION SITE APPLICATION
SB	SOLID BODY
S + S	SCREWED + SOCKETED
SE	SPINDLE EXTENSION
SHPWB	STUB HANDWHEEL PEDESTAL ON WALL SUPPORT BRACKET
SO	APPROPRIATE SOCKET WITH PLUG WELDED ONTO PIPE ITEM IN POSITION AS SPECIFIED FOR INSTRUMENTATION INSTALLATION
SP	STRAIGHT PIPE
SR–C	STRAIGHT COUPLING
SS	STAINLESS STEEL
ST–C	STEPPED COUPLING
SW	CERTAIN ITEMS WELDED TOGETHER ON SITE (SITE WELDING). PREPARATION OF ENDS FOR WELDING MUST COMPLY WITH THE SPECIFICATION – NB – CORROSION PROTECTION TO BE REPAIRED TO ENGINEER'S APPROVAL
t	PLATE THICKNESS
WGV	WEDGE GATE VALVE
WT	PIPE WALL THICKNESS

Revisions	Item No	Total	Refer Dwg	Dia Left	Dia Right	Dia Brch 1	Dia Brch 2	End Left	End Right	End Brch 1	End Brch 2	Bend Angle (Degree)	Bend Radius	Material	Flange Spec/Drilling SABS 1123 (1977)	Corrosion Protection			Description	Dimensions
																Internal Lining	External Coating	Site Application		
WFA – FILTERS: BACKWASH SYSTEM – DWG. 3338.12.00.WFA.14.A001, A002, U001, U002, U003, U004, X001, X002 AND X003																				
	BFA 1.1	1	U005	400	400			F	F					ST/4.5	1000/3	EP	EP	RPU	SP	2000 400ø
	BFA 1.2	1	U005, X002	400	400			F	F					ST/4.5	1000/3	EP	EP	RPU	SP	1005 400ø
	BFA 1.3	1	X002	400	400			F	FA					ST/4.5	1000/3	EP	EP	RPU	SP WITH RESTRAINED FLANGE, PROVIDE SUITABLE AND APPROVED RB'S	2830 300 400ø
	BFA 1.4	1	U003	400	400			F	FA					ST/4.5	1000/3	EP	EP	RPU	SP WITH RESTRAINED FLANGE, PROVIDE SUITABLE AND APPROVED RB'S	2495 2195 400ø
	BFA 1.5	5	U003	400	400			FA	F					ST/4.5	1000/3	EP	EP	RPU	SP	2500 400ø
	BFA 1.6	6	U003	400	400			F	F					ST/4.5	1000/3	EP	EP	RPU	SP	3000 400ø
	BFA 1.7	4	U003	400	400			F	FA					ST/4.5	1000/3	EP	EP	RPU	SP WITH RESTRAINED FLANGE, PROVIDE SUITABLE AND APPROVED RB'S	1790 1490 300 400ø
	BFA 1.8	1	U003	400	400			F	F					ST/4.5	1000/3	EP	EP	RPU	SP WITH PF	2365 400ø
	BFA 1.9	1	U003	400	400			F	FA					ST/4.5	1000/3	EP	EP	RPU	SP WITH RESTRAINED FLANGE, PROVIDE SUITABLE AND APPROVED RB'S	1835 300 400ø
	BFA 1.10	6	U003	400	400			F	FA					ST/4.5	1000/3	EP	EP	RPU	SP WITH RESTRAINED FLANGE, PROVIDE SUITABLE AND APPROVED RB'S	1750 400ø
	BFA 1.11	12	X001	400	400			F	FA					ST/4.5	1000/3	EP	EP	RPU	SP WITH RESTRAINED FLANGE, PROVIDE SUITABLE AND APPROVED RB'S	2195 300 400ø
	BFA 1.12	1	U005	450	450			F	F					ST/4.5	1000/3	EP	EP	RPU	SP	1000 450ø
	BFA 1.13	1	U005	450	450			F	F					ST/4.5	1000/3	EP	EP	RPU	SP	2115 450ø
	BFA 1.14	1	U005	450	450			F	F					ST/4.5	1000/3	EP	EP	RPU	SP	845 450ø
	BFA 1.15	1	U005	400	400			F	F					ST/4.5	1000/3	EP	EP	RPU	SP	1715 400ø
	BFA 1.16	12	U003, U004	400	400			F	F					ST/4.5	1000/3	EP	EP	RPU	SP	845 400ø
	BFA 2.1	1	U005	450	450			F	F			90	460	ST/4.5	1000/3	EP	EP	RPU	3–SEGMENT ELBOW	460 450ø 460
	BFA 2.2	2	U005	450	450			F	F			90	460	ST/4.5	1000/3	EP	EP	RPU	3–SEGMENT ELBOW	460 450ø 460
	BFA 2.3	1	U005	450	450			F	F			12.5		ST/4.5	1000/3	EP	EP	RPU	2–SEGMENT ELBOW	450ø 540 280
	BFA 2.4	5	U005	400	400			F	F			90	405	ST/4.5	1000/3	EP	EP	RPU	3–SEGMENT ELBOW WITH CONCENTRIC REDUCER AND RF, PROVIDE SUITABLE AND APPROVED RB'S	405 400ø 405
	BFA 2.5	2	U005	TO SUIT PIPE DIA	450			FA–PUMP SUCTION	F			90	460	ST/4.5	1000/3	EP	EP	RPU	3–SEGMENT ELBOW WITH CONCENTRIC REDUCER AND RF, PROVIDE SUITABLE AND APPROVED RB'S	460 450ø 460
	BFA 1.17	2	U005	400	400			F	F					ST/4.5	1000/3	EP	EP	RPU	SP	980 400ø

VERSION			
No.	DATE	DESCRIPTION	AUTH. BY

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PROJECT TITLE:
SOL PLAATJE LOCAL MUNICIPALITY INTERGRATED BULK WATER SUPPLY SYSTEM INTERVENTION

DRAWING TITLE:
RIVERTON WTW: OLD PLANT FILTERS PIPE ITEM AND VALVE SCHEDULES

Sol Plaatje Municipality — We Serve

0 50 100
100mm ON ORIGINAL DRAWING

ORIGINAL DRAWING SCALE: AS SHOWN
ORIGINAL DRAWING SHEET SIZE: A1

APPROVED ON BEHALF OF CLIENT:
NAME:
DATE:
CLIENT DRAWING No.:
CLIENT REF No.:

SURVEYED		DESIGNED	A Hlasane
DRAWN	A Hlasane		
COORD SYSTEM		DATE	September 2023

APPROVED ON BEHALF OF BIGEN:
CONTRACTOR: Marthinus Pretorius — Signed by: Marthinus Anno Hlasane, AAN=marthinus.pretorius@BIGENGROUP.COM, 29/10/2024 18:15:38(UTC+02:00)
RECEIVER: Hayley van der Merwe — Signed by: hayley van der Merwe, hayley.vandermerwe@sabs.com, 29/10/2024 18:17:26(UTC+02:00)

DRAWING No.: **3338.12.00.WFA.14.M003**
VERSION: **2**

3338.12.00.WFA.14.M003

NOTES:

1. **PIPE ITEM DIMENSIONS – ON LAYOUT DWGS AS REFERRED TO.**

   NB – SAID DIMENSIONS MUST BE VERIFIED ON SITE PRIOR TO ORDERING OF SUCH ITEMS ESPECIALLY WITH REGARD TO NEW AND EXISTING PIPEWORK CONNECTIONS AS WELL AS NEW PIPEWORK IN EXISTING STRUCTURES.

2. **DIMENSIONS FOR EQUIPMENT – VALVES, FLOW METERS, PRELIMINARY SELECTED PUMPS, ETC. WERE OBTAINED FROM CATALOGUES FOR PIPEWORK LAYOUT DESIGNS.**

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3. **UNLESS SHOWN OTHERWISE:**
   ALL VALVES, FLOW METERS, STRAIGHT AND STEPPED COUPLINGS AS WELL AS FLANGE ADAPTERS TO BE FOR 1000 KPA MAXIMUM WORKING PRESSURE.

4. **PIPE ITEM MATERIAL**

ST	GRADE 300 WA STEEL
X52	GRADE X52 STEEL
316L	GRADE 316L STAINLESS STEEL FLANGES EX 300WA OR AS SPECIFIED FLANGES ON SS ITEMS: SUBMERGED – 316L SS NOT SUBMERGED – 300WA SLUICE & CHANNEL GATES: –SUBMERGED PARTS, ANCHORS & SPINDLE EX SS –OPERATING GEAR, BRIDGES & PEDESTALS ABOVE WATER LINE EX ST
.../6,0	PIPE ITEM WALL THICKNESS FOR SPECIFIC MATERIAL
AL	ALUMINIUM
NB	DUAL MATERIAL SPECIFIED FOR ONE ITEM – SS PORTION TO BE CAST INTO CONCRETE AND MUST EXTEND 150 mm MIN BEYOND DRY CONCRETE FACE OR AS INDICATED.

5. **ABBREVIATIONS**

CORROSION PROTECTION
FACTORY APPLICATION

EP	EPOXY PAINT
FBE	FUSION BONDED EPOXY
G	HOT–DIP GALVANISING
MPEP	MULTI–PURPOSE EPOXY PAINT
RB	REINFORCED BITUMEN

ON SITE APPLICATION, AFTER INSTALLATION

RPU	RE–COATABLE POLYURETHANE TO CLIENT'S COLOUR CODING SPECIFICATION
TW	TAPE WRAP

C	CORROSION PROTECTION COATING
COR PR	CORROSION PROTECTION
CTO	CAP TOP – OPERATED
CTS	PIPE LENGTH CUT TO SUIT ON SITE
DP	DIFFERENTIAL PRESSURE
DWG	DRAWING
EA	ELECTRIC ACTUATOR
F	FLANGED
F/F	FACE TO FACE DIMENSION
FA	FLANGE ADAPTOR
FDT	FLANGE DRILLING TABLE
GS	GALVANISED STEEL
HD	HEAVY DUTY – GALVANISED STEEL PIPEWORK
HPWB	HANDWHEEL PEDESTAL ON WALL SUPPORT BRACKET
HW	HANDWHEEL
HWO	HANDWHEEL–OPERATED
IF	INSULATED FLANGE CONNECTION
KGV	KNIFE GATE VALVE
LF	LOOSE FLANGE – WELDED ONTO PIPE END AFTER CUTTING PIPE LENGTH TO SUIT ON SITE – NB: INSTALLATION POSITION AS INDICATED ON LAYOUT DRAWING TO REMAIN UNCHANGED
LH	LEFT HAND SIDE
LR	LONG RADIUS
MD	MEDIUM DUTY – GALVANISED STEEL PIPEWORK
MR	MEDIUM RADIUS
MWP	MAXIMUM WORKING PRESSURE
OD	OUTSIDE DIAMETER
PCD	PITCH CIRCLE DIAMETER FOR FLANGES
PE	PLAIN PIPE END
PF	PUDDLE FLANGE – UNLESS OTHERWISE SPECIFIED, ALL TO BE EX 10 mm THICK GRADE 300 WA STEEL. PF OD 100 mm GREATER THAN PIPE OD. NOT TO BE DRILLED
PMHP	PLATFORM–MOUNTED HANDWHEEL PEDESTAL
R	RADIUS
RB	RESTRAINING BOLT
RC	REINFORCED CONCRETE
RF	RESTRAINING FLANGE
RH	RIGHT HAND SIDE
RSV	RESILIENT SEAL GATE VALVE
S	CORROSION PROTECTION SITE APPLICATION
SB	SOLID BODY
S + S	SCREWED + SOCKETED
SE	SPINDLE EXTENSION
SHPWB	STUB HANDWHEEL PEDESTAL ON WALL SUPPORT BRACKET
SO	APPROPRIATE SOCKET WITH PLUG WELDED ONTO PIPE ITEM IN POSITION AS SPECIFIED FOR INSTRUMENTATION INSTALLATION
SP	STRAIGHT PIPE
SR–C	STRAIGHT COUPLING
SS	STAINLESS STEEL
ST–C	STEPPED COUPLING
SW	CERTAIN ITEMS WELDED TOGETHER ON SITE (SITE WELDING). PREPARATION OF ENDS FOR WELDING MUST COMPLY WITH THE SPECIFICATION – NB – CORROSION PROTECTION TO BE REPAIRED TO ENGINEER'S APPROVAL
t	PLATE THICKNESS
WGV	WEDGE GATE VALVE
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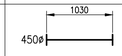
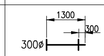
																Internal Lining	External Coating	Site Application		
WFA – FILTERS: NEW SETTLED WATER PUMPS PIPEWORK – DWG. 3338.12.00.WFA.14.A001, A002, U005																				
	SFA 1.11	3	U005	300	300			F	FA					ST/4.5	1000/3	EP	EP	RPU	SP WITH RESTRAINED FLANGE, PROVIDE SUITABLE AND APPROVED RB'S	
	SFA 1.12	1	U005	450	450			F	FA					ST/4.5	1000/3	EP	EP	RPU	SP WITH RESTRAINED FLANGE, PROVIDE SUITABLE AND APPROVED RB'S	
	SFA 1.13	1	U005	450	450			F	F					ST/4.5	1000/3	EP	EP	RPU	SP	
	SFA 1.14	3	U005	300	300			F	FA					ST/4.5	1000/3	EP	EP	RPU	SP WITH RESTRAINED FLANGE, PROVIDE SUITABLE AND APPROVED RB'S	
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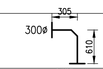
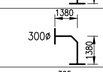
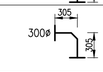
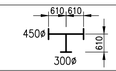
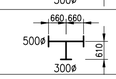
	SFA 1.19	1	U005	500	500			F	FA					ST/4.5	1000/3	EP	EP	RPU	SP WITH RESTRAINED FLANGE, PROVIDE SUITABLE AND APPROVED RB'S	
	SFA 2.3	2	U005	300	300			F	F			90	305	ST/4.5	1000/3	EP	EP	RPU	3–SEGMENT ELBOW	
	SFA 2.4	3	U005	300	300			F	F			90	1380	ST/4.5	1000/3	EP	EP	RPU	3–SEGMENT ELBOW	
	SFA 2.5	6	U005	300	300			F	F			90	305	ST/4.5	1000/3	EP	EP	RPU	3–SEGMENT ELBOW	
	SFA 3.3	2	U005	450	450	300		F	F	F				ST/4.5	1000/3	EP	EP	RPU	TEE PIECE	
	SFA 3.4	2	U005	500	500	300		F	F	F				ST/4.5	1000/3	EP	EP	RPU	TEE PIECE	
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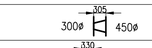
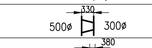
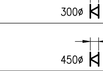
	SFA 8.1	1	U005	450	300									ST	1000/3	EP	EP	RPU	CONCENTRIC REDUCER	
	SFA 8.2	1	U005	300	500									ST	1000/3	EP	EP	RPU	CONCENTRIC REDUCER	
	SFA 9.3	6	U005											ST	1000/3	FBE	FBE	RPU	300 DIA FLANGED NON RISING SPINDLE RSV TO SANS 664	
	SFA 9.4	3	U005												1000/3	FBE	FBE	RPU	300 DIA FLANGED, SLANTED SEAT TILTING DISK CHECK VALVE	
	SFA 9.5	1	U005												1000/3	FBE	FBE	RPU	450 DIA FLANGED, SLANTED SEAT TILTING DISK CHECK VALVE	

VERSION

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PROJECT TITLE:
SOL PLAATJE LOCAL MUNICIPALITY INTERGRATED BULK WATER SUPPLY SYSTEM INTERVENTION

DRAWING TITLE:
RIVERTON WTW: OLD PLANT FILTERS PIPE ITEM AND VALVE SCHEDULES

Sol Plaatje Municipality
We Serve

0 50 100
100mm ON ORIGINAL DRAWING

ORIGINAL DRAWING SCALE:	AS SHOWN	ORIGINAL DRAWING SHEET SIZE:	A1

APPROVED ON BEHALF OF CLIENT:
NAME:
DATE:
CLIENT DRAWING No.:
CLIENT REF No.:

SURVEYED		DESIGNED	A Hlasane
DRAWN	A Hlasane		
COORD SYSTEM		DATE	September 2023

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DRAWING No.: **3338.12.00.WFA.14.M002**
VERSION: **2**

3338.12.00.WFA.14.M002

NOTES:

1. **PIPE ITEM DIMENSIONS – ON LAYOUT DWGS AS REFERRED TO.**

   NB – SAID DIMENSIONS MUST BE VERIFIED ON SITE PRIOR TO ORDERING OF SUCH ITEMS ESPECIALLY WITH REGARD TO NEW AND EXISTING PIPEWORK CONNECTIONS AS WELL AS NEW PIPEWORK IN EXISTING STRUCTURES.

2. **DIMENSIONS FOR EQUIPMENT – VALVES, FLOW METERS, PRELIMINARY SELECTED PUMPS, ETC. WERE OBTAINED FROM CATALOGUES FOR PIPEWORK LAYOUT DESIGNS.**

   SUCH DIMENSIONS MAY BE INCORRECT ONCE MECHANICAL EQUIPMENT SUBMITTED BY CONTRACTOR HAS BEEN APPROVED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CHECK ALL AFFECTED PIPE ITEM DIMENSIONS PRIOR TO ORDERING ANY ITEMS.

3. **UNLESS SHOWN OTHERWISE:**
   ALL VALVES, FLOW METERS, STRAIGHT AND STEPPED COUPLINGS AS WELL AS FLANGE ADAPTERS TO BE FOR 1000 KPA MAXIMUM WORKING PRESSURE.

4. **PIPE ITEM MATERIAL**

ST	GRADE 300 WA STEEL
X52	GRADE X52 STEEL
316L	GRADE 316L STAINLESS STEEL FLANGES EX 300WA OR AS SPECIFIED FLANGES ON SS ITEMS: SUBMERGED – 316L SS NOT SUBMERGED – 300WA SLUICE & CHANNEL GATES: –SUBMERGED PARTS, ANCHORS & SPINDLE EX SS –OPERATING GEAR, BRIDGES & PEDESTALS ABOVE WATER LINE EX ST
.../6,0	PIPE ITEM WALL THICKNESS FOR SPECIFIC MATERIAL
AL	ALUMINIUM
NB	DUAL MATERIAL SPECIFIED FOR ONE ITEM – SS PORTION TO BE CAST INTO CONCRETE AND MUST EXTEND 150 mm MIN BEYOND DRY CONCRETE FACE OR AS INDICATED.

5. **ABBREVIATIONS**

CORROSION PROTECTION
FACTORY APPLICATION

EP	EPOXY PAINT
FBE	FUSION BONDED EPOXY
G	HOT–DIP GALVANISING
MPEP	MULTI–PURPOSE EPOXY PAINT
RB	REINFORCED BITUMEN

ON SITE APPLICATION, AFTER INSTALLATION

RPU	RE–COATABLE POLYURETHANE TO CLIENT'S COLOUR CODING SPECIFICATION
TW	TAPE WRAP

C	CORROSION PROTECTION COATING
COR PR	CORROSION PROTECTION
CTO	CAP TOP – OPERATED
CTS	PIPE LENGTH CUT TO SUIT ON SITE
DP	DIFFERENTIAL PRESSURE
DWG	DRAWING
EA	ELECTRIC ACTUATOR
F	FLANGED
F/F	FACE TO FACE DIMENSION
FA	FLANGE ADAPTOR
FDT	FLANGE DRILLING TABLE
GS	GALVANISED STEEL
HD	HEAVY DUTY – GALVANISED STEEL PIPEWORK
HPWB	HANDWHEEL PEDESTAL ON WALL SUPPORT BRACKET
HW	HANDWHEEL
HWO	HANDWHEEL–OPERATED
IF	INSULATED FLANGE CONNECTION
KGV	KNIFE GATE VALVE
LF	LOOSE FLANGE – WELDED ONTO PIPE END AFTER CUTTING PIPE LENGTH TO SUIT ON SITE – NB: INSTALLATION POSITION AS INDICATED ON LAYOUT DRAWING TO REMAIN UNCHANGED
LH	LEFT HAND SIDE
LR	LONG RADIUS
MD	MEDIUM DUTY – GALVANISED STEEL PIPEWORK
MR	MEDIUM RADIUS
MWP	MAXIMUM WORKING PRESSURE
OD	OUTSIDE DIAMETER
PCD	PITCH CIRCLE DIAMETER FOR FLANGES
PE	PLAIN PIPE END
PF	PUDDLE FLANGE – UNLESS OTHERWISE SPECIFIED, ALL TO BE EX 10 mm THICK GRADE 300 WA STEEL. PF OD 100 mm GREATER THAN PIPE OD. NOT TO BE DRILLED
PMHP	PLATFORM–MOUNTED HANDWHEEL PEDESTAL
R	RADIUS
RB	RESTRAINING BOLT
RC	REINFORCED CONCRETE
RF	RESTRAINING FLANGE
RH	RIGHT HAND SIDE
RSV	RESILIENT SEAL GATE VALVE
S	CORROSION PROTECTION SITE APPLICATION
SB	SOLID BODY
S + S	SCREWED + SOCKETED
SE	SPINDLE EXTENSION
SHPWB	STUB HANDWHEEL PEDESTAL ON WALL SUPPORT BRACKET
SO	APPROPRIATE SOCKET WITH PLUG WELDED ONTO PIPE ITEM IN POSITION AS SPECIFIED FOR INSTRUMENTATION INSTALLATION
SP	STRAIGHT PIPE
SR–C	STRAIGHT COUPLING
SS	STAINLESS STEEL
ST–C	STEPPED COUPLING
SW	CERTAIN ITEMS WELDED TOGETHER ON SITE (SITE WELDING). PREPARATION OF ENDS FOR WELDING MUST COMPLY WITH THE SPECIFICATION – NB – CORROSION PROTECTION TO BE REPAIRED TO ENGINEER'S APPROVAL
t	PLATE THICKNESS
WGV	WEDGE GATE VALVE
WT	PIPE WALL THICKNESS

Revisions	Item No	Total	Refer Dwg	Dia Left	Dia Right	Dia Brch 1	Dia Brch 2	End Left	End Right	End Brch 1	End Brch 2	Bend Angle (Degree)	Bend Radius	Material	Flange Spec/Drilling SABS 1123 (1977)	Corrosion Protection: Internal Lining	Corrosion Protection: External Coating	Corrosion Protection: Site Application	Description	Dimensions
WFA – FILTERS: NEW SETTLED WATER PIPEWORK – DWG. 3338.12.00.WFA.14.A001, A002, U001, U002, U003, U004, X001, X002 AND X003																				
	SFA 1.1	6	U003,U006, X003	200	200			F	PE					ST/4.5	1000/3	EP	EP	RPU	SP WITH PF	1 050, 345, 200ø
	SFA 1.2	6	U003,U006, X003	200	200			F	F					ST/4.5	1000/3	EP	EP	RPU	SP	1 425, 200ø
	SFA 1.3	6	U003,U006, X003	200	200			F	PE					ST/4.5	1000/3	EP	EP	RPU	SP WITH PF	1 625, 345, 200ø
	SFA 1.4	2	U003, U004	500	500			F	FA					ST/4.5	1000/3	EP	EP	RPU	SP WITH RESTRAINED FLANGE, PROVIDE SUITABLE AND APPROVED RB'S	1 375, 300, 500ø
	SFA 1.5	12	U003, U004	500	500			F	F					ST/4.5	1000/3	EP	EP	RPU	SP	3 000, 500ø
	SFA 1.6	2	U003, U004	500	500			F	FA					ST/4.5	1000/3	EP	EP	RPU	SP WITH RESTRAINING FLANGE, PROVIDE SUITABLE AND APPROVED RB'S	1 165, 300, 500ø
	SFA 1.8	1	U003, U004	500	500			F	FA					ST/4.5	1000/3	EP	EP	RPU	SP WITH RESTRAINING FLANGE, PROVIDE SUITABLE AND APPROVED RB'S	1 730, 300, 500ø
	SFA 1.9	1	U003, U004	500	500			F	FA					ST/4.5	1000/3	EP	EP	RPU	SP WITH RESTRAINING FLANGE, PROVIDE SUITABLE AND APPROVED RB'S	2 000, 300, 500ø
	SFA 1.10	1	U003, U004	500	500			F	F					ST/4.5	1000/3	EP	EP	RPU	SP WITH PF	1 340, 460, 500ø
	SFA 1.17	1	X003	500	500			F	F					ST/4.5	1000/3	EP	EP	RPU	SP WITH PF	560, 265, 500ø
	SFA 1.18	1	X003	500	500			F	PE					ST/4.5	1000/3	EP	EP	RPU	SP WITH RESTRAINING FLANGE, PROVIDE SUITABLE AND APPROVED RB'S	2030, 460, 500ø
	SFA 2.1	4	U004,U005, X002	500	500			F	F			90	510	SS/4.78	1000/3	EP	EP	RPU	3–SEGMENT ELBOW	510, 510, 500ø
	SFA 2.2	12	X001, X002	300	300			FA	PE			90	305	ST/4.5	1000/3	EP	EP	RPU	SP WITH 3–SEGMENT ELBOW	250, 340, 1530, 590, 300ø
	SFA 3.2	6	X003, X004	500	500	200	200	F	F	F	F			ST/4.5	1000/3	EP	EP	RPU	UNEQUAL CROSS	510, 510, 510, 200ø, 500ø
	SFA 4.1	9	U003, U004 X001, X002											ST	1000/3	EP	EP	RPU	500 DIA FA	STANDARD RFA
	SFA 4.2	12	U003, U004 X001, X002											ST	1000/3	EP	EP	RPU	200 DIA FA	STANDARD
	SFA 4.3	18	U003, U004, U005 X001, X002											ST	1000/3	EP	EP	RPU	300 DIA FA	STANDARD
	SFA 9.1a	12	U003, U004, X001											ST	1000/3	FBE	FBE	RPU	200 DIA FLANGED ISOLATING BUTTERFLY VALVE WITH RH GEARBOX FOR 1000kPa MWP	152, 200ø
	SFA 9.1b	12	U003, U004, X001											ST					SUITABLE OPEN/CLOSE ELECTRIC ACTUATOR FOR ITEM FA 9.1a	
	SFA 9.2a	12	U003, U004, X001											SS	1000/3	FBE	FBE	RPU	300 DIA FLANGED ISOLATING BUTTERFLY VALVE WITH RH GEARBOX FOR 1000kPa MWP	178, 300ø
	SFA 9.2b	12	U003, U004, X001											ST					SUITABLE MODULATING ELECTRIC ACTUATOR FOR ITEM FA 9.2a	
	SFA 7.1	2	U003, U004, X001											ST	1000/3	EP	EP	RPU	500 DIA FA	STANDARD

VERSION

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PROJECT TITLE:
SOL PLAATJE LOCAL MUNICIPALITY INTERGRATED BULK WATER SUPPLY SYSTEM INTERVENTION

DRAWING TITLE:
RIVERTON WTW: OLD PLANT FILTERS PIPE ITEM AND VALVE SCHEDULES

Sol Plaatje Municipality — We Serve

0 — 50 — 100
100mm ON ORIGINAL DRAWING

ORIGINAL DRAWING SCALE: AS SHOWN
ORIGINAL DRAWING SHEET SIZE: A1

APPROVED ON BEHALF OF CLIENT:
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CLIENT DRAWING No.:
CLIENT REF No.:

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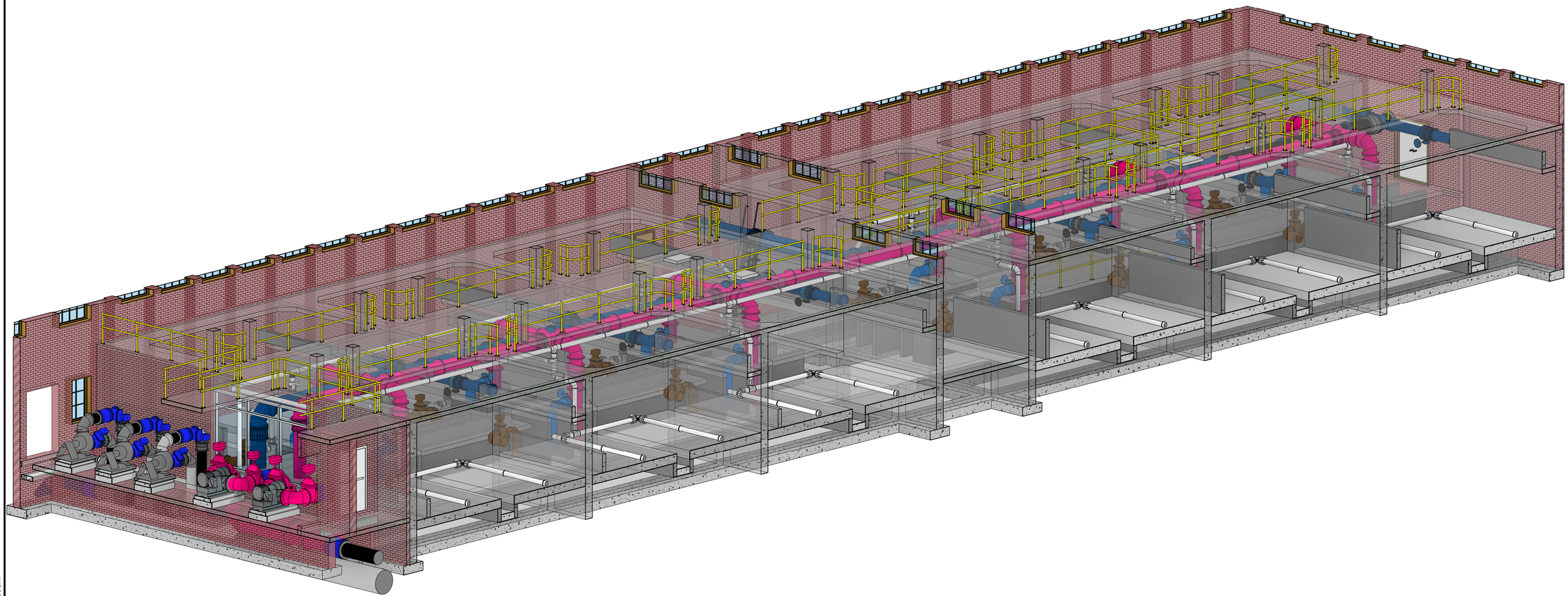
VERSION: **2**

3338.12.00.WFA.14.M001



VERSION/AMENDMENTS			
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PROJECT TITLE:
SOL PLAATJE LOCAL MUNICIPALITY INTERGRATED BULK WATER SUPPLY SYSTEM INTERVENTION

DRAWING TITLE:
RIVERTON WTW: OLD PLANT FILTERS 3D VIEW

Sol Plaatje Municipality
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CLIENT DRAWING No.:
CLIENT REF No.:

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VERSION: 1

3338.12.00.WFA.14.A001

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