DEPARTMENT OF WATER AND SANITATION
REPUBLIC OF SOUTH AFRICA

DUE AT 11:00 ON

CLOSING DATE: 23 SEPTEMBER 2025

BID: WTE-0402 CS

SUPPLY AND DELIVERY OF VALVES, FLANGES, PUDDLE FLANGES, FASTENERS AND WELDING MATERIALS FOR RIGHT HAND BYPASS PIPELINE FOR CLANWILLIAM DAM IN THE WESTERN CAPE FOR DWS CONSTRUCTION SOUTH.

SUBMIT BID DOCUMENTS TO:

THE BID BOX: ENTRANCE OF TRAINING CENTRE
DEPARTMENT OF WATER SANITATION
CONSTRUCTION SOUTH
CLANWILLIAM DAM SITE: N77 ROUTE
O-ORDINATES: 32°11'5''S and 18°52'1''E

BIDDER: **(Company address and stamp)**

COMPILED BY: SCM CONSTRUCTION SOUTH MANAGEMENT

DEPARTMENT OF WATER AND SANITATION

BID: WTE-0402 CS

SUPPLY AND DELIVERY OF VALVES, FLANGES, PUDDLE FLANGES, FASTENERS AND WELDING MATERIALS FOR RIGHT HAND BYPASS PIPELINE FOR CLANWILLIAM DAM IN THE WESTERN CAPE FOR DWS CONSTRUCTION SOUTH.

INVITATION TO BID (SBD 1)

PART A
INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE (*NAME OF DEPARTMENT/ PUBLIC ENTITY*)					
BID NUMBER:	**WTE-0402 CS**	CLOSING DATE:	**23 SEPTEMBER 2025**	CLOSING TIME:	**11H00**
DESCRIPTION	**SUPPLY AND DELIVERY OF VALVES, FLANGES, PUDDLE FLANGES, FASTENERS AND WELDING MATERIALS FOR RIGHT HAND BYPASS PIPELINE FOR CLANWILLIAM DAM.**				

BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT *(STREET ADDRESS)*

THE BID BOX: ENTRANCE OF TRAINING CENTRE

DEPARTMENT OF WATER SANITATION

CONSTRUCTION SOUTH

CLANWILLIAM DAM SITE: N77 ROUTE

O-ORDINATES: 32°11'5''S and 18°52'1''E

BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO		**TECHNICAL ENQUIRIES MAY BE DIRECTED TO:**	
CONTACT PERSON	**T DANIELS**	CONTACT PERSON	**B van HEERDEN**
E-MAIL ADDRESS	**danielst@dws.gov.za**	E-MAIL ADDRESS	**CWD-Tenders@dws.gov.za**

SUPPLIER INFORMATION					
NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	CODE		NUMBER		
CELLPHONE NUMBER					
FACSIMILE NUMBER	CODE		NUMBER		
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					
SUPPLIER COMPLIANCE STATUS	TAX COMPLIANCE SYSTEM PIN:		**OR**	CENTRAL SUPPLIER DATABASE No:	MAAA
ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	☐Yes ☐No [IF YES ENCLOSE PROOF]		ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED?		☐Yes ☐No [IF YES, ANSWER THE QUESTIONNAIRE BELOW]

QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS

IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?	☐ YES ☐ NO
DOES THE ENTITY HAVE A BRANCH IN THE RSA?	☐ YES ☐ NO
DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?	☐ YES ☐ NO
DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?	☐ YES ☐ NO
IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION?	☐ YES ☐ NO

IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 BELOW.

PART B
TERMS AND CONDITIONS FOR BIDDING

1. BID SUBMISSION:
1.1. BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.
1.2. **ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED–(NOT TO BE RE-TYPED) OR IN THE MANNER PRESCRIBED IN THE BID DOCUMENT.**
1.3. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT, 2000 AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.
1.4. **THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (SBD7).**
2. TAX COMPLIANCE REQUIREMENTS
2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.
2.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VERIFY THE TAXPAYER'S PROFILE AND TAX STATUS.
2.3 APPLICATION FOR TAX COMPLIANCE STATUS (TCS) PIN MAY BE MADE VIA E-FILING THROUGH THE SARS WEBSITE WWW.SARS.GOV.ZA.
2.4 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.
2.5 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.
2.6 WHERE NO TCS PIN IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.
2.7 NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE, COMPANIES WITH DIRECTORS WHO ARE PERSONS IN THE SERVICE OF THE STATE, OR CLOSE CORPORATIONS WITH MEMBERS PERSONS IN THE SERVICE OF THE STATE."

NB: FAILURE TO PROVIDE / OR COMPLY WITH ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID.

SIGNATURE OF BIDDER: ……

CAPACITY UNDER WHICH THIS BID IS SIGNED: ……
(Proof of authority must be submitted e.g. company resolution)

DATE: ……...

DEPARTMENT OF WATER AND SANITATION

BID: WTE-0402 CS

SUPPLY AND DELIVERY OF VALVES, FLANGES, PUDDLE FLANGES, FASTENERS AND WELDING MATERIALS FOR RIGHT HAND BYPASS PIPELINE FOR CLANWILLIAM DAM IN THE WESTERN CAPE FOR DWS CONSTRUCTION SOUTH.

SECTION 1: LEGALITIES

CONTENTS

DEPARTMENT OF WATER AND SANITATION

BID: WTE-0402 CS

SUPPLY AND DELIVERY OF VALVES, FLANGES, PUDDLE FLANGES, FASTENERS AND WELDING MATERIALS FOR RIGHT HAND BYPASS PIPELINE FOR CLANWILLIAM DAM IN THE WESTERN CAPE FOR DWS CONSTRUCTION SOUTH.

1. INSTRUCTIONS TO BIDDERS

CONTENTS

INSTRUCTIONS TO BIDDERS

1. ISSUING OF DOCUMENTS

(a) A complete set of bid documents can be downloaded from the e-tender portal.

Contact Person: Terry-Lee Daniels
Email: danielst@dws.gov.za

(b) Bidders must satisfy themselves that the document is complete and conform to the index of this document. Should any figures or writing be indistinct, or should any pages be missing from this document or should this document or the drawing(s) contain any obvious errors, the Bidders must immediately notify the Department in order to have any discrepancy rectified or clarified before submitting his bid. Such clarification will be valid only if made by the Department by means of formal amendment as described hereunder prior to the date of submission of bids. The Department may issue amendments to clarify or modify the Bid Documents. A copy of each amendment will be issued to each bidder and shall be acknowledged on the form issued with the amendments. No claim whatsoever will be entertained for faults in the bid price resulting from the above-mentioned discrepancies.

(c) No alterations, omissions or additions shall be made to this document, but should it be deemed necessary to do so, the Bidder is at liberty to qualify his bid.

(d) All Bidders shall be deemed to have waived, renounced and abandoned any conditions printed or written upon any stationery used by them for the purpose of or in connection with the submission of bids which are in conflict with the conditions laid down in this document.

2. QUERIES WITH RESPECT TO THIS BID

Each communication between the Department and a tenderer shall be to or from the Department's contact person only, and in a form that can be read, copied and recorded. Writing shall be in the English language. The employer shall not take any responsibility for non-receipt of communications from or by a tenderer. The name and contact details of the Department's contact person are:

BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:		**TECHNICAL INFORMATION MAY BE DIRECTED TO:**	
DEPARTMENT/ PUBLIC ENTITY	**Water and Sanitation**	DEPARTMENT	**Construction South**
CONTACT PERSON	**T. Daniels**	CONTACT PERSON	**B. van Heerden**
E-MAIL ADDRESS	**danielst@dws.gov.za**	E-MAIL ADDRESS	**CWD-Tenders@dws.gov.za**

3. COMPLETION OF BIDS

(a) The bid must be signed on the Invitation to Bid form (SBD 1) annexed hereto with all blanks in the bid and the appendix filled in.

(b) All spaces in the bid forms and other annexures shall be completed in full.

(c) Section 4 in the bid document and the Pricing Schedule must be fully completed and priced out by the bidder. Failure to do so will deem your bid invalid.

(d) The bid documents shall not be separated in any way nor must any pages be detached from the original documents**.**

4. SUBMISSION OF BIDS

The Bid Document shall be completed, signed and submitted as follows:

(a) The original Bid, together with a covering letter and supporting documents, shall be sealed in an envelope endorsed:

ORIGINAL BID FOR BID**: WTE-0402 CS**: **SUPPLY AND DELIVERY OF VALVES, FLANGES, PUDDLE FLANGES, FASTENERS AND WELDING MATERIALS FOR RIGHT HAND BYPASS PIPELINE FOR CLANWILLIAM DAM IN THE WESTERN CAPE FOR DWS CONSTRUCTION SOUTH.**

and the name of the Bidder shall be clearly shown.

(b) Bids, sealed and endorsed as above, will be received by: The Supply Chain Management Office or maybe deposit in The Bid Box: Entrance of Training Centre, Department of Water and Sanitation, Construction South, Clanwilliam Dam Site: N7 route, co-ordinates: 32°11'5''S and 18°52'1''E not later than 11:00 on the date stipulated on the front cover of this document.

5. SIGNATURE ON BIDS

The Bid, if by an individual, must be signed by that individual or by someone on his behalf duly authorised thereto and proof of such authority must be produced. If the bid is by a company, it must be signed by a person duly authorised thereto by a Resolution of a Board of Directors a copy of which Resolution, duly certified by the Chairman of the Company is to be submitted with the bid.

If the bid is submitted by joint venture of more than one person and/or Companies and/or firms it shall be accompanied by the following:

(a) The original or a notarially certified copy of the original document under which such joint venture was constituted which must define precisely inter alia the conditions under which the joint venture will function, its period of duration and the participation of the several constituent persons and/or companies and/or firms.

(b) A certificate signed by or on behalf of each participating person and/or company and/or firm authorising the person who signed the bid to do so.

6. GENERAL CONDITIONS OF CONTRACT

The National Treasury General Conditions of Contract shall be regarded as an integral part of the contract documents.

7. FORM SBD 1

The copy of Form SBD 1 (Invitation to Bid), annexed to these documents, must be completed and signed by the Bidder. **Failure to do so will deem your bid invalid.**

8. BIDDERS TO COMPLY WITH DOCUMENTS

Where applicable, Bidders must allow in their Bids for all labour, material, machinery and everything necessary for the execution and completion of the Contract in accordance with the bid documents. No alterations may be made in the Invitation to Bid, Schedule of Quantities or other documents and the bid will be deemed to comply entirely with the terms of the documents.

9. THE DEPARTMENTS RIGHT TO DECLINE ANY BID

The Department does not bind itself to accept the lowest or any bid.

10. DEPARTMENT NOT LIABLE FOR BIDDER'S EXPENSES

The Department will not be held liable for any expenses incurred in preparing and submitting bids.

11. PAYMENTS UNDER THE CONTRACT

All payments due to the Bidder in terms of the contract will be done by means of Electronic Fund Transfer.

12. EVALUATION CRITERIA

The evaluation of bids will be conducted in four (4) phases as follows:

- **Phase 1: Mandatory Requirements**
- **Phase 2: Administrative Compliance**
- **Phase 3: Technical Evaluation and Specification Compliance**
- **Phase 4: Preference Points system**

Phase 1:

Mandatory Requirements

Failure to submit any of the documents as listed and detailed in Table 1 below will render your bid non-responsive and will be disqualified.

Table 1

No	Detail of Document to be submitted	Does the document submitted comply or not-comply?	
		Comply	Not-Comply
1.	**Technical Datasheet for Item 4.4.2:** CHEMICAL ANCOR COMPOUND SUFFIESENT TO INSTALL ITEM 4.4.2 INCLUDING APPLICATOR GUN Technical Datasheets/Brochures shall: • Clearly indicate what item is to be supplied if there is multiple items on the Datasheet/Brochure • Clearly indicate the Qualifying specification as set out in *Technical Information section 3.2.14* on the Datasheet/Brochure		

Phase 2:

Administrative Compliance:

Bidders are required to comply with the following listed below:

Table 2

No	Criteria	Comply	Not-Comply
1	Companies must be registered with National Treasury's Central Supplier Database must submit CSD report.		
2	Tax compliant with SARS (to be verified through CSD and SARS). Attach a copy of SARS Tax Clearance letter and PIN.		
3	Active registration with Company Intellectual Property Commission (to be verified through CSD and CIPC). Attach copy of CIPC / CIPRO certificate.		
4	An original or certified copy of B-BBEE Status Level Verification Certificate (**failure to submit B-BBEE Certificate and complete SBD 6.1, the Bidder will forfeit the preferential points to be claimed**)		
5	Letter of appointment of duly authorized person to sign bid. Proof of such authority must be submitted with the bid. If by an individual, must be signed by that individual or by someone on his behalf duly authorised thereto and proof of such authority must be produced. If the bid is by a Company, it must be signed by a person duly authorised thereto by a Resolution of a Board of Directors a copy of which Resolution, duly certified by the Chairman of the Company is to be submitted with the bid.		
6	The stipulated minimum threshold percentage for local production and content, **Valves products and actuators, Steel Products and Component for Construction including Adhesive anchors and welding materials** as per stipulated by the Department of Trade and Industry (DTi) is applicable. Please make yourself aware of the stipulated minimum threshold percentage of the specific item(s) as per the specifications. Annex C need to be complete and is available on the Department: Trade and Industry website. (http://www.thedtic.gov.za/sectors-and-services-2/industrial-development/industrial-procurement/).		
7	Complete, sign, submit SBD1, SBD3.1, SBD 4, SBD 6.1		

Phase 3:

Technical Evaluation and Specification Compliance

Only Bidders that passed Phase 1 shall be considered for this phase of the evaluation process.

The bid will be evaluated using the criteria as indicated in *Technical Information section 3.2.14* by comparing it to the information submitted in Phase 1.

Failure to comply with all the technical specifications will render your bid as not to specification and non-responsive.

The Bid Evaluation Committee will also confirm that the Bidders has indicated compliance with the technical specification in *Technical Information, Section 3.2.14.* Should the bidder indicate no-compliance or does not indicate compliance or indicates both "*comply"* and "*not comply*" the bid will be considered as non-responsive.

Table 3

Item	Requirement	Did the bidder comply with the requirement?	
		Comply	Not-Comply
All items	Did the bidder indicate compliance in *Technical Information, Section 3.2.14* and sign the declaration under Section 3?		
4.4.2	Did the information submitted in Phase 1 meet the requirements set out in *Technical Information section 3.2.14?*		

Phase 4:

Preference Points system

The bid will be awarded in terms of Regulation 4: Preferential Procurement Regulations, 2022 pertaining to the Preferential Procurement Policy Framework Act, 2000 (Act 5 of 2000).

Bid proposals will be evaluated based on the 80/20 preference points where a maximum of 80 points will be awarded in respect of price and a maximum of 20 points will be awarded for goals.

Points claimed will be according to a bidder's specific goals claimed as indicated in Table 4 below.

Table 4: Specific goals for the tender and points allocation are indicated as per the table below:

In terms of Regulation 4(2); 5(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this bid the bidder will be allocated points based on the bidder's goals claimed as per table 4. Bidder's goal claimed must be supported by proof/ documentation stated as per table 4 and the special conditions of this bid where applicable:

Table 4

The specific goals allocated points in terms of this tender	Number of maximum points allocated (80/20 system)	Bidder's points claimed for specific goals (To be completed by Bidder)
Women Ownership	**5**	
Disability Ownership	**5**	
Youth Ownership	**5**	
Location of enterprise (local equals province) Western Cape	**2**	
B-BBEE status level contribution from level 1 to 2 which are QSE or EME	**3**	
TOTAL SCORED POINTS	**20**	

Specific goals" means specific goals as contemplated in section 2(1)*(d)* of the PPPFA Act which may include contracting with persons, or categories of persons, historically disadvantaged by unfair discrimination on the basis of race, gender and disability including the implementation of programmes of the Reconstruction of Development Programme as published in *Government Gazette* No. 16085 date 23 November 1994.

"Ownership" means the percentage ownership and control, exercised by individuals within an enterprise.

"Disability" means, in respect of a person, a permanent impairment of a physical, intellectual, or sensory function, which results in restricted, or lack of, ability to perform an activity in the manner, or within the range, considered normal for a human being.

i. A blind person (in terms of the Blind Persons Act, 1968 (Act no.26 of 1968);
ii. A deaf person, whose hearing is impaired to such an extent that he/she cannot use it as a primary means of communication.
iii. A person who, as a result of permanent disability, requires a wheelchair, caliper or crutch to assist him/her to move from one place or another.
iv. A person who requires an artificial limb; or
v. A person who suffers from a mental illness (in terms of the Mental Health Act, 1973 (Act no. 18 of 1973).

"Youth" means, in respect of a person younger than 35 years of age.

"Location of enterprise" Local equals province. Where a project cuts across more than one province, the bidder may be located in any of the relevant provinces to claim and be allocated the points.

Women, disability, and youth will be measured by calculating the pro-rata percentage of ownership of the bidding company which meets the criterion. E.g., Company A has five shareholders each of whom own 20% of the company. Three of the five shareholders meet the criterion, i.e., they are women/disability/youth. Therefore, this bidder will obtain 60% of the points allowable for this goal.

Table 5: Documents required for verification of Bidder's claimed points

Documents/ information listed on the below table 5 must be submitted to support and verify points claimed as per table 4 above.

Table 5

Specific Goal	Requires Proof Documents
Women Ownership	Full CSD Report
Disability Ownership	Full CSD Report
Youth Ownership	Full CSD Report
Location of enterprise	Full CSD Report
B-BBEE status level contribution from level 1 to 2 which are QSE or EME	Valid B-BBEE certificate/sworn affidavit Consolidated B-BBEE certificate in cases of Joint Ventures (JV) Full CSD Report for each bidder who formed a (JV)

Failure on the part of a bidder to submit proof of documentation required in terms of this tender to claim for specific goals with the bid, will be interpreted to mean that preference points for specific goals are not claimed and will not be allocated.

13. REJECTION OF BID

Bids not complying with the above-mentioned requirements and specifications may be regarded as incomplete and may not be considered.

14. RESULTS OF BIDS

Results of non-acceptance of bids will be sent to individual unsuccessful bidders.

COMPULSORY DOCUMENTS TO BE COMPLETED BY THE BIDDER:

- DECLARATION OF INTEREST (SBD 4)
- TERMS OF THE PREFERENTIAL PROCUREMENT REGULATION, 2022 (SBD 6.1)
- LOCAL CONTENT DECLARATION – SUMMARY SCHEDULE (ANNEX C)

BIDDER'S DISCLOSURE

1. PURPOSE OF THE FORM

Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

2. Bidder's declaration

2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest[1] in the enterprise, employed by the state? **YES/NO**

2.1.1 If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

Full Name	**Identity Number**	**Name of State institution**

2.2 Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution? **YES/NO**

2.2.1 If so, furnish particulars:

……

……

[1] the power, by one person or a group of persons holding the majority of the equity of an enterprise, alternatively, the person/s having the deciding vote or power to influence or to direct the course and decisions of the enterprise.

2.3 Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract?

YES/NO

2.3.1 If so, furnish particulars:

…….
…….

3 DECLARATION

I, the undersigned, (name)……. in submitting the accompanying bid, do hereby make the following statements that I certify to be true and complete in every respect:

3.1 I have read and I understand the contents of this disclosure;

3.2 I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;

3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium[2] will not be construed as collusive bidding.

3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.

3.4 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide

clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.

[2] Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

3.6 I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.
I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

…… ……
Signature Date

…… ……
Position Name of bidder

SBD 6.1

PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022

This preference form must form part of all tenders invited. It contains general information and serves as a claim form for preference points for specific goals.

NB: BEFORE COMPLETING THIS FORM, TENDERERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF THE TENDER AND PREFERENTIAL PROCUREMENT REGULATIONS, 2022

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1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to invitations to tender:

- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

1.2 **To be completed by the organ of state**

(*delete whichever is not applicable for this tender*).

a) The applicable preference point system for this tender is the 80/20 preference point system.

b) The 80/20 preference point system will be applicable in this tender. The lowest/ highest acceptable tender will be used to determine the accurate system once tenders are received.

1.3 Points for this tender (even in the case of a tender for income-generating contracts) shall be awarded for:

(a) Price; and

(b) Specific Goals.

1.4 **To be completed by the organ of state:**

The maximum points for this tender are allocated as follows:

	POINTS
PRICE	**80**
SPECIFIC GOALS	**20**
Total points for Price and SPECIFIC GOALS	**100**

1.5 Failure on the part of a tenderer to submit proof or documentation required in terms of this tender to claim points for specific goals with the tender, will be interpreted to mean that preference points for specific goals are not claimed.

1.6 The organ of state reserves the right to require of a tenderer, either before a tender is

adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the organ of state.

2. DEFINITIONS

(a) **"tender"** means a written offer in the form determined by an organ of state in response to an invitation to provide goods or services through price quotations, competitive tendering process or any other method envisaged in legislation;

(b) **"price"** means an amount of money tendered for goods or services, and includes all applicable taxes less all unconditional discounts;

(c) **"rand value"** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;

(d) **"tender for income-generating contracts"** means a written offer in the form determined by an organ of state in response to an invitation for the origination of income-generating contracts through any method envisaged in legislation that will result in a legal agreement between the organ of state and a third party that produces revenue for the organ of state, and includes, but is not limited to, leasing and disposal of assets and concession contracts, excluding direct sales and disposal of assets through public auctions; and

(e) **"the Act"** means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000).

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1. POINTS AWARDED FOR PRICE

3.1.1 THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS

A maximum of 80 or 90 points is allocated for price on the following basis:

80/20 **or** **90/10**

$$Ps = 80\left(1 - \frac{Pt - P\,min}{P\,min}\right) \text{ or } \quad Ps = 90\left(1 - \frac{Pt - P\,min}{P\,min}\right)$$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmin = Price of lowest acceptable tender

3.2. FORMULAE FOR DISPOSAL OR LEASING OF STATE ASSETS AND INCOME GENERATING PROCUREMENT

3.2.1. POINTS AWARDED FOR PRICE

A maximum of 80 or 90 points is allocated for price on the following basis:

80/20 **or** **90/10**

$$Ps = 80\left(1 + \frac{Pt - P\,max}{P\,max}\right) \text{ or } \quad Ps = 90\left(1 + \frac{Pt - P\,max}{Pmax}\right)$$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmax = Price of highest acceptable tender

4. POINTS AWARDED FOR SPECIFIC GOALS

4.1. In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goals stated in table 1 below as may be supported by proof/ documentation stated in the conditions of this tender:

4.2. In cases where organs of state intend to use Regulation 3(2) of the Regulations, which states that, if it is unclear whether the 80/20 or 90/10 preference point system applies, an organ of state must, in the tender documents, stipulate in the case of—

(a) an invitation for tender for income-generating contracts, that either the 80/20 or 90/10 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system; or

(b) any other invitation for tender, that either the 80/20 or 90/10 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system,

then the organ of state must indicate the points allocated for specific goals for both the 90/10 and 80/20 preference point system.

Table 1: Specific goals for the tender and points claimed are indicated per the table below.

(Note to organs of state: Where either the 90/10 or 80/20 preference point system is applicable, corresponding points must also be indicated as such.

Note to tenderers: The tenderer must indicate how they claim points for each preference point system.)

The specific goals allocated points in terms of this tender	Number of points allocated (80/20 system) (To be completed by the organ of state)	Number of points claimed (80/20 system) (To be completed by the tenderer)
Women Ownership	**5**	
Disability Ownership	**5**	
Youth Ownership	**5**	
Location of enterprise (local equals province) Western Cape	**2**	
B-BBEE status level contribution from level 1 to 2 which are QSE or EME	**3**	
TOTAL SCORED POINTS	**20**	

DECLARATION WITH REGARD TO COMPANY/FIRM

4.3. Name of company/firm……

4.4. Company registration number: ……...

4.5. TYPE OF COMPANY/ FIRM

- ϒ Partnership/Joint Venture / Consortium
- ϒ One-person business/sole propriety
- ϒ Close corporation
- ϒ Public Company
- ϒ Personal Liability Company
- ϒ (Pty) Limited
- ϒ Non-Profit Company
- ϒ State Owned Company

[TICK APPLICABLE BOX]

, the undersigned, who is duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the specific goals as advised in the tender, qualifies the company/ firm for the preference(s) shown and I acknowledge that:

i) The information furnished is true and correct;

ii) The preference points claimed are in accordance with the General Conditions as

indicated in paragraph 1 of this form;

iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 4.2, the contractor may be required to furnish documentary proof to the satisfaction of the organ of state that the claims are correct;

iv) If the specific goals have been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the organ of state may, in addition to any other remedy it may have –

(a) disqualify the person from the tendering process;

(b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;

(c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;

(d) recommend that the tenderer or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and

(e) forward the matter for criminal prosecution, if deemed necessary.

.....
SIGNATURE(S) OF TENDERER(S)

SURNAME AND NAME: .....
DATE: .....

ADDRESS: .....

.....

.....

.....

SATS 1286.2011

Annex C

Local Content Declaration - Summary Schedule

(C1)	Tender No.
(C2)	Tender description:
(C3)	Designated product(s)
(C4)	Tender Authority:
(C5)	Tendering Entity name:
(C6)	Tender Exchange Rate: Pula EU GBP
(C7)	Specified local content %

Note: VAT to be excluded from all calculations

Calculation of local content								Tender summary			
Tender item no's	List of items	Tender price - each (excl VAT)	Exempted imported value	Tender value net of exempted imported content	Imported value	Local value	Local content % (per item)	Tender Qty	Total tender value	Total exempted imported content	Total Imported content
(C8)	(C9)	(C10)	(C11)	(C12)	(C13)	(C14)	(C15)	(C16)	(C17)	(C18)	(C19)

(C20)	Total tender value	R 0	
(C21)	Total Exempt imported content		R 0
(C22)	Total Tender value net of exempt imported content		R 0
(C23)	Total Imported content		R 0
(C24)	Total local content		R 0
(C25)	Average local content % of tender		

Signature of tenderer from Annex B

Date:

DEPARTMENT OF WATER AND SANITATION

BID: WTE-0402 CS

SUPPLY AND DELIVERY OF VALVES, FLANGES, PUDDLE FLANGES, FASTENERS AND WELDING MATERIALS FOR RIGHT HAND BYPASS PIPELINE FOR CLANWILLIAM DAM IN THE WESTERN CAPE FOR DWS CONSTRUCTION SOUTH.

SECTION 2: CONDITIONS OF CONTRACT

CONTENTS

CONDITIONS OF CONTRACT

1. NATIONAL TREASUARY - GENERAL CONDITIONS OF CONTRACT (NTGCC)

The Contract shall be governed by: “National Treasury - General Conditions of Contract”, which is attached to this bid document.

The only variations from these National Treasury - General Conditions of Contract (NTGCC) shall be given in the Special conditions of Contract below.

THE NATIONAL TREASURY

Republic of South Africa

GOVERNMENT PROCUREMENT:

GENERAL CONDITIONS OF CONTRACT

July 2010

NOTES

The purpose of this document is to:

(i) Draw special attention to certain general conditions applicable to government bids, contracts and orders; and
(ii) To ensure that clients be familiar with regard to the rights and obligations of all parties involved in doing business with government.

In this document words in the singular also mean in the plural and vice versa and words in the masculine also mean in the feminine and neuter.

- The General Conditions of Contract will form part of all bid documents and may not be amended.

- Special Conditions of Contract (SCC) relevant to a specific bid, should be compiled separately for every bid (if (applicable) and will supplement the General Conditions of Contract. Whenever there is a conflict, the provisions in the SCC shall prevail.

TABLE OF CLAUSES

General Conditions of Contract

1. Definitions

1. The following terms shall be interpreted as indicated:

1.1. “Closing time” means the date and hour specified in the bidding documents for the receipt of bids.

1.2. “Contract” means the written agreement entered into between the purchaser and the supplier, as recorded in the contract form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

1.3. “Contract price” means the price payable to the supplier under the contract for the full and proper performance of his contractual obligations.

1.4. “Corrupt practice” means the offering, giving, receiving, or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.

1.5. "Countervailing duties" are imposed in cases where an enterprise abroad is subsidized by its government and encouraged to market its products internationally.

1.6. “Country of origin” means the place where the goods were mined, grown or produced or from which the services are supplied. Goods are produced when, through manufacturing, processing or substantial and major assembly of components, a commercially recognized new product results that is substantially different in basic characteristics or in purpose or utility from its components.

1.7. “Day” means calendar day.

1.8. “Delivery” means delivery in compliance of the conditions of the contract or order.

1.9. “Delivery ex stock” means immediate delivery directly from stock actually on hand.

1.10. “Delivery into consignees store or to his site” means delivered and unloaded in the specified store or depot or on the specified site in compliance with the conditions of the contract or order, the supplier bearing all risks and charges involved until the supplies are so delivered and a valid receipt is obtained.

1.11. "Dumping" occurs when a private enterprise abroad market its goods on own initiative in the RSA at lower prices than that of the country of origin and which have the potential to harm the local industries in the RSA.

1.12. ”Force majeure” means an event beyond the control of the supplier and not involving the supplier’s fault or negligence and not foreseeable. Such events may include, but is not restricted to, acts of the purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

1.13. “Fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of any bidder, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the bidder of the benefits of free and open competition.

1.14. “GCC” means the General Conditions of Contract.

1.15. “Goods” means all of the equipment, machinery, and/or other materials that the supplier is required to supply to the purchaser under the contract.

1.16. “Imported content” means that portion of the bidding price represented by the cost of components, parts or materials which have been or are still to be imported (whether by the supplier or his subcontractors) and which costs are inclusive of the costs abroad, plus freight and other direct importation costs such as landing costs, dock dues, import duty, sales duty or other similar tax or duty at the South African place of entry as well as transportation and handling charges to the factory in the Republic where the supplies covered by the bid will be manufactured.

1.17. “Local content” means that portion of the bidding price which is not included in the imported content provided that local manufacture does take place.

1.18. “Manufacture” means the production of products in a factory using labour, materials, components and machinery and includes other related value-adding activities.

1.19. “Order” means an official written order issued for the supply of goods or works or the rendering of a service.

1.20. “Project site,” where applicable, means the place indicated in bidding documents.

1.21. “Purchaser” means the organization purchasing the goods.

1.22. “Republic” means the Republic of South Africa.

1.23. “SCC” means the Special Conditions of Contract.

1.24. “Services” means those functional services ancillary to the supply of the goods, such as transportation and any other incidental services, such as installation, commissioning, provision of technical assistance, training, catering, gardening, security, maintenance and other such obligations of the supplier covered under the contract.

1.25. “Written” or “in writing” means handwritten in ink or any form of electronic or mechanical writing.

2. Application

2.1. These general conditions are applicable to all bids, contracts and orders including bids for functional and professional services, sales, hiring, letting and the granting or acquiring of rights, but excluding immovable property, unless otherwise indicated in the bidding documents.

2.2. Where applicable, special conditions of contract are also laid down to cover specific supplies, services or works.

2.3. Where such special conditions of contract are in conflict with these general conditions, the special conditions shall apply.

3. General

3.1. Unless otherwise indicated in the bidding documents, the purchaser shall not be liable for any expense incurred in the preparation and submission of a bid. Where applicable a non-refundable fee for documents may be charged.

3.2. With certain exceptions, invitations to bid are only published in the Government Tender Bulletin. The Government Tender Bulletin may be obtained directly from the Government Printer, Private Bag X85, Pretoria 0001, or accessed electronically from www.treasury.gov.za

4. Standards

4.1. The goods supplied shall conform to the standards mentioned in the bidding documents and specifications.

5. Use of contract documents and information; inspection.

5.1. The supplier shall not, without the purchaser's prior written consent, disclose the contract, or any provision thereof, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the purchaser in connection therewith, to any person other than a person employed by the supplier in the performance of the contract. Disclosure to any such employed person shall be made in confidence and shall extend only as far as may be necessary for purposes of such performance.

5.2. The supplier shall not, without the purchaser's prior written consent, make use of any document or information mentioned in GCC clause 5.1 except for purposes of performing the contract.

5.3. Any document, other than the contract itself mentioned in GCC clause 5.1 shall remain the property of the purchaser and shall be returned (all copies) to the purchaser on completion of the supplier's performance under the contract if so required by the purchaser.

5.4. The supplier shall permit the purchaser to inspect the supplier's records relating to the performance of the supplier and to have them audited by auditors appointed by the purchaser, if so required by the purchaser.

6. Patent rights

6.1. The supplier shall indemnify the purchaser against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the goods or any part thereof by the purchaser.

7. Performance security

7.1. Within thirty (30) days of receipt of the notification of contract award, the successful bidder shall furnish to the purchaser the performance security of the amount specified in SCC.

7.2. The proceeds of the performance security shall be payable to the purchaser as compensation for any loss resulting from the supplier's failure to complete his obligations under the contract.

7.3. The performance security shall be denominated in the currency of the contract, or in a freely convertible currency acceptable to the purchaser and shall be in one of the following forms:

(a) a bank guarantee or an irrevocable letter of credit issued by a reputable bank located in the purchaser's country or abroad, acceptable to the purchaser, in the form provided in the bidding documents or another form acceptable to the purchaser; or

(b) a cashier's or certified cheque

7.4. The performance security will be discharged by the purchaser and returned to the supplier not later than thirty (30) days following the date of completion of the supplier's performance obligations under the contract, including any warranty obligations, unless otherwise specified in SCC.

8. Inspections, tests and analyses

8.1. All pre-bidding testing will be for the account of the bidder.

8.2. If it is a bid condition that supplies to be produced or services to be rendered should at any stage during production or execution or on completion be subject to inspection, the premises of the bidder or contractor shall be open, at all reasonable hours, for inspection by a representative of the Department or an organization acting on behalf of the Department.

8.3. If there are no inspection requirements indicated in the bidding documents and no mention is made in the contract, but during the contract period it is decided that inspections shall be carried out, the purchaser shall itself make the necessary arrangements, including payment arrangements with the testing authority concerned.

8.4. If the inspections, tests and analyses referred to in clauses 8.2 and 8.3 show the supplies to be in accordance with the contract requirements, the cost of the inspections, tests and analyses shall be defrayed by the purchaser.

8.5. Where the supplies or services referred to in clauses 8.2 and 8.3 do not comply with the contract requirements, irrespective of whether such supplies or services are accepted or not, the cost in connection with these inspections, tests or analyses shall be defrayed by the supplier.

8.6. Supplies and services which are referred to in clauses 8.2 and 8.3 and which do not comply with the contract requirements may be rejected.

8.7. Any contract supplies may on or after delivery be inspected, tested or analyzed and may be rejected if found not to comply with the requirements of the contract. Such rejected supplies shall be held at the cost and risk of the supplier who shall, when called upon, remove them immediately at his own cost and forthwith substitute them with supplies which do comply with the requirements of the contract. Failing such removal the rejected supplies shall be returned at the suppliers cost and risk. Should the supplier fail to provide the substitute supplies forthwith, the purchaser may, without giving the supplier further opportunity to substitute the rejected supplies, purchase such supplies as may be necessary at the expense of the supplier.

8.8. The provisions of clauses 8.4 to 8.7 shall not prejudice the right of the purchaser to cancel the contract on account of a breach of the conditions thereof, or to act in terms of Clause 23 of GCC.

9. Packing

9.1. The supplier shall provide such packing of the goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packing, case size and weights shall take into consideration, where appropriate, the remoteness of the goods' final destination and the absence of heavy handling facilities at all points in transit.

9.2. The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the contract, including additional requirements, if any, specified in SCC, and in any subsequent instructions ordered by the purchaser.

10. Delivery and documents

10.1. Delivery of the goods shall be made by the supplier in accordance with the terms specified in the contract. The details of shipping and/or other documents to be furnished by the supplier are specified in SCC.

10.2. Documents to be submitted by the supplier are specified in SCC.

11. Insurance

11.1. The goods supplied under the contract shall be fully insured in a freely convertible currency against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified in the SCC.

12. Transportation

12.1. Should a price other than an all-inclusive delivered price be required, this shall be specified in the SCC.

13. Incidental services

13.1. The supplier may be required to provide any or all of the following services, including additional services, if any, specified in SCC:

(a) performance or supervision of on-site assembly and/or commissioning of the supplied goods;

(b) furnishing of tools required for assembly and/or maintenance of the supplied goods;

(c) furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied goods;

(d) performance or supervision or maintenance and/or repair of the supplied goods, for a period of time agreed by the parties, provided that this service shall not relieve the supplier of any warranty obligations under this contract; and

(e) training of the purchaser's personnel, at the supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied goods.

13.2. Prices charged by the supplier for incidental services, if not included in the contract price for the goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the supplier for similar services.

14. Spare parts

14.1. As specified in SCC, the supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the supplier:

(a) such spare parts as the purchaser may elect to purchase from the supplier, provided that this election shall not relieve the supplier of any warranty obligations under the contract; and

(b) in the event of termination of production of the spare parts:

(i) Advance notification to the purchaser of the pending termination, in sufficient time to permit the purchaser to procure needed requirements; and

(ii) following such termination, furnishing at no cost to the purchaser, the blueprints, drawings, and specifications of the spare parts, if requested.

15. Warranty

15.1. The supplier warrants that the goods supplied under the contract are new, unused, of the most recent or current models, and that they incorporate all recent improvements in design and materials unless provided otherwise in the contract. The supplier further warrants that all goods supplied under this contract shall have no defect, arising from design, materials, or workmanship (except when the design and/or material is required by the purchaser's specifications) or from any act or omission of the supplier, that may develop under normal use of the supplied goods in the conditions prevailing in the country of final destination.

15.2. This warranty shall remain valid for twelve (12) months after the goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the

contract, or for eighteen (18) months after the date of shipment from the port or place of loading in the source country, whichever period concludes earlier, unless specified otherwise in SCC.

15.3. The purchaser shall promptly notify the supplier in writing of any claims arising under this warranty.

15.4. Upon receipt of such notice, the supplier shall, within the period specified in SCC and with all reasonable speed, repair or replace the defective goods or parts thereof, without costs to the purchaser.

15.5. If the supplier, having been notified, fails to remedy the defect(s) within the period specified in SCC, the purchaser may proceed to take such remedial action as may be necessary, at the supplier's risk and expense and without prejudice to any other rights which the purchaser may have against the supplier under the contract.

16. Payment

16.1. The method and conditions of payment to be made to the supplier under this contract shall be specified in SCC.

16.2. The supplier shall furnish the purchaser with an invoice accompanied by a copy of the delivery note and upon fulfilment of other obligations stipulated in the contract.

16.3. Payments shall be made promptly by the purchaser, but in no case later than thirty (30) days after submission of an invoice or claim by the supplier.

16.4. Payment will be made in Rand unless otherwise stipulated in SCC.

17. Prices

17.1. Prices charged by the supplier for goods delivered and services performed under the contract shall not vary from the prices quoted by the supplier in his bid, with the exception of any price adjustments authorized in SCC or in the purchaser's request for bid validity extension, as the case may be.

18. Contract amendments

18.1. No variation in or modification of the terms of the contract shall be made except by written amendment signed by the parties concerned.

19. Assignment

19.1. The supplier shall not assign, in whole or in part, its obligations to perform under the contract, except with the purchaser's prior written consent.

20. Subcontracts

20.1. The supplier shall notify the purchaser in writing of all subcontracts awarded under these contracts if not already specified in the bid. Such notification, in the original bid or later, shall not relieve the supplier from any liability or obligation under the contract.

21. Delays in the supplier's performance

21.1. Delivery of the goods and performance of services shall be made by the supplier in accordance with the time schedule prescribed by the purchaser in the contract.

21.2. If at any time during performance of the contract, the supplier or its subcontractor(s) should encounter conditions impeding timely delivery of the goods and performance of services, the supplier shall promptly notify the purchaser in writing of the fact of the delay, it's likely duration and its cause(s). As soon as practicable after receipt of the supplier's notice, the purchaser shall evaluate the situation and may at his discretion extend the supplier's time for performance, with or without the imposition of penalties, in which case the extension shall be ratified by the parties by amendment of contract.

21.3. No provision in a contract shall be deemed to prohibit the obtaining of supplies or services from a national department, provincial department, or a local authority.

21.4. The right is reserved to procure outside of the contract small quantities or to have minor essential services executed if an emergency arises, the supplier's point of supply is not situated at or near the place where the supplies are required, or the supplier's services are not readily available.

21.5. Except as provided under GCC Clause 25, a delay by the supplier in the performance of its delivery obligations shall render the supplier liable to the imposition of penalties, pursuant to GCC Clause 22, unless an extension of time is agreed upon pursuant to GCC Clause 21.2 without the application of penalties.

21.6. Upon any delay beyond the delivery period in the case of a supplies contract, the purchaser shall, without cancelling the contract, be entitled to purchase supplies of a similar quality and up to the same quantity in substitution of the goods not supplied in conformity with the contract and to return any goods delivered later at the supplier's expense and risk, or to cancel the contract and buy such goods as may be required to complete the contract and without prejudice to his other rights, be entitled to claim damages from the supplier.

22. Penalties

22.1. Subject to GCC Clause 25, if the supplier fails to deliver any or all of the goods or to perform the services within the period(s) specified in the contract, the purchaser shall, without prejudice to its other remedies under the contract, deduct from the contract price, as a penalty, a sum calculated on the delivered price of the delayed goods or unperformed services using the current prime interest rate calculated for each day of the delay until actual delivery or performance. The purchaser may also consider termination of the contract pursuant to GCC Clause 23.

23. Termination for default

23.1. The purchaser, without prejudice to any other remedy for breach of contract, by written notice of default sent to the supplier, may terminate this contract in whole or in part:

(a) if the supplier fails to deliver any or all of the goods within the period(s) specified in the contract, or within any extension thereof granted by the purchaser pursuant to GCC Clause 21.2;
(b) if the Supplier fails to perform any other obligation(s) under the contract; or
(c) if the supplier, in the judgment of the purchaser, has engaged in corrupt or fraudulent practices in competing for or in executing the contract.

23.2. In the event the purchaser terminates the contract in whole or in part, the purchaser may procure, upon such terms and in such manner as it deems appropriate, goods, works or services similar to those undelivered, and the supplier shall be liable to the purchaser for any excess costs for such similar goods, works or services. However, the supplier shall continue performance of the contract to the extent not terminated.

23.3. Where the purchaser terminates the contract in whole or in part, the purchaser may decide to impose a restriction penalty on the supplier by prohibiting such supplier from doing business with the public sector for a period not exceeding 10 years.

23.4. If a purchaser intends imposing a restriction on a supplier or any person associated with the supplier, the supplier will be allowed a time period of not more than fourteen (14) days to provide reasons why the envisaged restriction should not be imposed. Should the supplier fail to respond within the stipulated fourteen (14) days the purchaser may regard the intended penalty as not objected against and may impose it on the supplier.

23.5. Any restriction imposed on any person by the Accounting Officer /Authority will, at the discretion of the Accounting Officer / Authority, also be applicable to any other enterprise or any partner, manager, director or other person who wholly or partly exercises or exercised or may exercise control over the enterprise of the first-mentioned person, and with which enterprise or person the first-mentioned person, is or was in the opinion of the Accounting Officer / Authority actively associated.

23.6. If a restriction is imposed, the purchaser must, within five (5) working days of such imposition, furnish the National Treasury, with the following information:

(i) the name and address of the supplier and / or person restricted by the purchaser;

(ii) the date of commencement of the restriction

(iii) the period of restriction; and

(iv) the reasons for the restriction.

These details will be loaded in the National Treasury's central database of suppliers or persons prohibited from doing business with the public sector.

23.7. If a court of law convicts a person of an offence as contemplated in sections 12 or 13 of the Prevention and Combating of Corrupt Activities Act, No. 12 of 2004, the court may also rule that such person's name be endorsed on the Register for Tender Defaulters. When a person's name has been endorsed on the Register, the person will be prohibited from doing business with the public sector for a period not less than five years and not more than 10 years. The National Treasury is empowered to determine the period of restriction and each case will be dealt with on its own merits. According to section 32 of the Act the Register must be open to the public. The Register can be perused on the National Treasury website.

24. Anti-dumping and countervailing duties and rights

24.1. When, after the date of bid, provisional payments are required, or antidumping or countervailing duties are imposed, or the amount of a provisional payment or anti-dumping or countervailing right is increased in respect of any dumped or subsidized import, the State is not liable for any amount so required or imposed, or for the amount of any such increase. When, after the said date, such a provisional payment is no longer required or any such anti-dumping or countervailing right is abolished, or where the amount of such provisional payment or any such right is reduced, any such favourable difference shall on demand be paid forthwith by the contractor to the State or the State may deduct such amounts from moneys (if any)which may otherwise be due to the contractor in regard to supplies or services which he delivered or rendered, or is to deliver or render in terms of the contract or any other contract or any other amount which may be due to him

25. Force Majeure

25.1. Notwithstanding the provisions of GCC Clauses 22 and 23, the supplier shall not be liable for forfeiture of its performance security, damages, or termination for default if and to the extent that his delay in performance or other failure to perform his obligations under the contract is the result of an event of force majeure.

25.2. If a force majeure situation arises, the supplier shall promptly notify the purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the purchaser in writing, the supplier shall continue to perform its obligations under the contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the force majeure event.

26. Termination for insolvency

26.1. The purchaser may at any time terminate the contract by giving written notice to the supplier if the supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the supplier, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the purchaser.

27. Settlement of Disputes

27.1. If any dispute or difference of any kind whatsoever arises between the purchaser and the supplier in connection with or arising out of the contract, the parties shall make every effort to resolve amicably such dispute or difference by mutual consultation.

27.2. If, after thirty (30) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the purchaser or the supplier may give notice to the other party of his intention to commence with mediation. No mediation in respect of this matter may be commenced unless such notice is given to the other party.

27.3. Should it not be possible to settle a dispute by means of mediation, it may be settled in a South African court of law.

27.4. Mediation proceedings shall be conducted in accordance with the rules of procedure specified in the SCC.

27.5. Notwithstanding any reference to mediation and/or court proceedings herein,

(a) the parties shall continue to perform their respective obligations under the contract unless they otherwise agree; and

(b) the purchaser shall pay the supplier any monies due the supplier.

28. Limitation of liability

28.1. Except in cases of criminal negligence or wilful misconduct, and in the case of infringement pursuant to Clause 6;

(a) the supplier shall not be liable to the purchaser, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the supplier to pay penalties and/or damages to the purchaser; and

(b) the aggregate liability of the supplier to the purchaser, whether under the contract, in tort or otherwise, shall not exceed the total contract price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment.

29. Governing language

29.1. The contract shall be written in English. All correspondence and other documents pertaining to the contract that is exchanged by the parties shall also be written in English.

30. Applicable law

30.1. The contract shall be interpreted in accordance with South African laws, unless otherwise specified in SCC.

31. Notices

31.1. Every written acceptance of a bid shall be posted to the supplier concerned by registered or certified mail and any other notice to him shall be posted by ordinary mail to the address furnished in his bid or to the address notified later by him in writing and such posting shall be deemed to be proper service of such notice.

31.2. The time mentioned in the contract documents for performing any act after such aforesaid notice has been given, shall be reckoned from the date of posting of such notice.

32. Taxes and duties

32.1. A foreign supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside the purchaser's country.

32.2. A local supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted goods to the purchaser.

32.3. No contract shall be concluded with any bidder whose tax matters are not in order. Prior to the award of a bid the Department must be in possession of a tax clearance certificate, submitted by the bidder. This certificate must be an original issued by the South African Revenue Services.

33. National Industrial Participation (NIP) Programme

33.1. The NIP Programme administered by the Department of Trade and Industry shall be applicable to all contracts that are subject to the NIP obligation.

34. Prohibition of Restrictive practices

34.1. In terms of section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, an agreement between, or concerted practice by, firms, or a decision by an association of firms, is prohibited if it is between parties in a horizontal relationship and if a bidder (s) is / are or a contractor(s) was / were involved in collusive bidding (or bid rigging).

34.2. If a bidder(s) or contractor(s), based on reasonable grounds or evidence obtained by the purchaser, has / have engaged in the restrictive practice referred to above, the purchaser may refer the matter to the Competition Commission for investigation and possible imposition of administrative penalties as contemplated in the Competition Act No. 89 of 1998.

34.3. If a bidder(s) or contractor(s), has / have been found guilty by the Competition Commission of the restrictive practice referred to above, the purchaser may, in addition and without prejudice to any other remedy provided for, invalidate the bid(s) for such item(s) offered, and / or terminate the contract in whole or part, and / or restrict the bidder(s) or contractor(s) from conducting business

with the public sector for a period not exceeding ten (10) years and / or claim damages from the bidder(s) or contractor(s) concerned.

Js General Conditions of Contract (revised July 2010)

2. SPECIAL CONDITIONS OF CONTRACT

Item	Sub-Clause	Data
Application	2.2	Additional specifications follow from clause 35 below.
Performance Security	7.1 7.4	No performance security is required.
Packing	9.2	The material will be transported in suitable vehicles.
Delivery and documents	10.1	Each consignment will be delivered to the designated store yard at the site, accompanied by the necessary data sheets and delivery documents, stating the tender number, item description and quantity delivered.
	10.2	These documents will be signed on delivery by a designated person. A copy of the delivery note will be provided to the designated person.
Insurance	11.1	It is the supplier's responsibility to be fully insured against loss or damage incidental to manufacture or acquisition and transportation till it is delivered to site.
Transportation	12.1	An all-inclusive delivered price is required.
Incidental services	13.1	Client will assist with personnel and hydraulic crane to offload material if required (to be considered by bidder when pricing).
Spare parts	14.1	Not applicable.
Payment	16.1	Payment will be made once every month. An original Tax Invoice clearly stating the items and quantities delivered will be provided to the client. Payment will be done within 30 days of receipt of the approved Tax Invoice by depositing the payment directly into the bank account of the successful bidder. No cash payment will be done.
	16.4	Payment will be made in Rand.
Prices	17.1	No price adjustments will be considered.
Settlement of Disputes	27.4	Mediation proceedings shall be conducted in accordance with the rules of arbitration.
Additional Special conditions	35	Refer to Section 3 - Specification

DEPARTMENT OF WATER AND SANITATION

BID: WTE-0402 CS

SUPPLY AND DELIVERY OF VALVES, FLANGES, PUDDLE FLANGES, FASTENERS AND WELDING MATERIALS FOR RIGHT HAND BYPASS PIPELINE FOR CLANWILLIAM DAM IN THE WESTERN CAPE FOR DWS CONSTRUCTION SOUTH.

SECTION 3: SPECIFICATIONS

CONTENTS

3.1 STANDARD SPECIFICATIONS

APPLICABLE STANDARD SPECIFICATIONS

In the event of any discrepancy between a part or parts of the National Treasury General Conditions of Contract or Standard specifications and the Project Specifications, the Project Specifications shall take precedence.

In the event of a discrepancy between the Specifications, (including the Project Specifications) and the drawings and / or the Bill of Quantities, the discrepancy shall be resolved by the Engineer before the execution of the work under the relevant item.

The applicable standard specifications are mentioned in the Project Specification.

3.2 PROJECT SPECIFICATION

3.2.1 DESCRIPTION OF THE PROJECT

The Department of Water and Sanitation's Construction South Division has been appointed to undertake the raising of the Clanwilliam Dam.

The raised dam wall will be approximately 370 m in length and 49 m in maximum height. At full supply level the reservoir will cover a surface area of approximately 2 022 ha and capacity of 344,3 million cubic metre

The works include addition of concrete on the downstream side, extending the apron, construction of a free standing intake tower, river outlet control house, a power generating house, short tunnel and coffer dam works on the upstream side, as well as various other pipe outlet structures on the downstream side. This work must be done without interfering with the day to day operation of the dam.

In order to facilitate the release of water while working on the downstream side of the dam wall a temporary bypass line will be constructed. This tender is for the procurement material for the this bypass.

3.2.2 LOCATION AND ACCESS TO SITE

The dam site is situated on the Olifants River, in the Western Cape, approximately 2 km South- West of Clanwilliam town in the Western Cape Province.

The site is immediately next to the N7 and accessed through a controlled gate. The gravel site roads will be regularly maintained but could get challenging under abnormal rainfall conditions.

Directions to Site:

- From Cape Town International Airport: Take N2 freeway towards Cape Town
- Take exit 14 for M7/ Vanguard Drive
- Turn right onto Vanguard Dr
- Continue onto N7 for about 230 km
- The dam will be on the right about 2 km south of the town of Clanwilliam Dam in the Olifants River

Bidders are advised to acquaint themselves with roads, road conditions, distances, etc. on and to the site, before bidding.

3.2.3 ROAD CONDITIONS

Bidders are advised to acquaint themselves with roads, road conditions, distances, etc. on and to the site, before bidding.

3.2.4 SERVICE REQUIRED

The service required is for the **SUPPLY AND DELIVERY OF VALVES, FLANGES, PUDDLE FLANGES, FASTENERS AND WELDING MATERIALS FOR RIGHT HAND BYPASS PIPELINE FOR CLANWILLIAM DAM.**

3.2.5 QUANTITIES

The quantities are estimates only and subject to change on re-measuring during the execution of the work. Orders will be placed as and when requirements become known. No price adjustments or claims will be allowed for or entertained due to a change in total quantities.

Note: The Department reserves the right to purchase only one or more items as required.

3.2.6 DELIVERY

The successful bidder to provide the Department with a delivery schedule within 5 working days of accepting the BID. The delivery of the material must commence within 10 working days of placement of the first order issued by DWS.

Note: All communication, requests and instructions to and from the Bidder will be managed by a designated person.

The delivery point is at the DWS Construction South - Clanwilliam Dam Construction Site Offices.

Deliveries may be made during working hours: 08h00 to 15h00, but not on the following days or periods:

(i) Saturdays and Sundays.

(ii) All public holidays.

(iii) The period 11 December to 9 January.

(iv) The last Friday of every month, unless otherwise agreed before delivery.

The Successful Bidder shall make available a designated contact person with whom the Department will arrange and schedule supply and delivery of the material.

The Department will decline products that do not comply with the specification and load(s) will not be accepted and will not be paid for. The declined load(s) must be removed from site ASAP for the Successful Bidders own cost.

3.2.7 PENALTY FOR LATE DELIVERY

If the Bidder fails to supply the goods or render the service within the period stipulated in the contract, the Department shall have the right, in its sole discretion to deduct as a penalty as described in paragraph 22 of National Treasury General Conditions of Contract (NTGCC).

3.2.8 PACKAGING

All materials will be safely packed for transportation.

3.2.9 TRANSPORTATION

All transportation cost of materials to be included in the pricing

3.2.10 BIDDER'S VEHICLES

The delivery vehicles will be roadworthy, in a good condition and fit for purpose.

The Department will have the right to instruct the Successful Bidder to repair or replace a vehicle which is considered unsuitable for the transporting of the material.

3.2.11 PAYMENT

Payments will be made monthly on receipt of specified approved tax invoices.

Payment will not be made for consignment unless supported by delivery notes duly signed by the designated official checking the delivery.

No escalation will be considered.

Payment will be done within 30 days of receipt and approval of original invoice by depositing the payment directly into the bank account of the Successful Bidder. No cash payment or cheque payment will be done.

3.2.12 COSTS

All-inclusive bid prices are required, delivery and any other cost mentioned in the specification for the Bidders account must be included in the unit price.

Bidders shall provide in their bid for all labour, plant, material, implements and vehicles necessary for the execution of the contract and all operating and maintenance costs in accordance with the bid documents.

3.2.13 SAFETY, HEALTH AND ENVIRONMENTAL

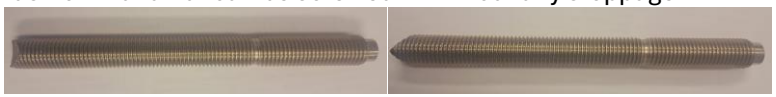
The successful bidder will be required to adhere to the site specific Health, Safety and Environmental requirements while on site.

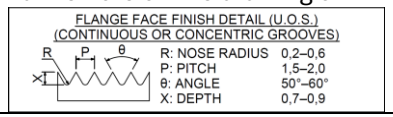
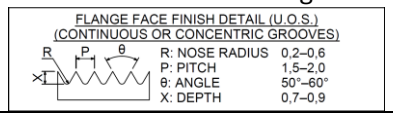
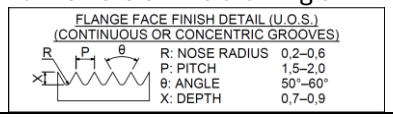
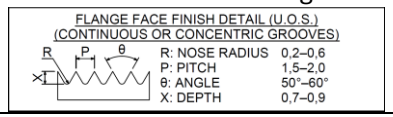
3.2.14 TECHNICAL INFORMATION

The below table details the technical requirements for the materials required for this bid. The Bidder shall confirm that he has familiarized himself with the specification and complies with said requirements by indicating as such for each item in the table below by **initialling in the relevant column**. Please take note that should the Bidder not indicate compliance his bid shall be considered as no-compliant.

Item	SHORT DESCRIPTION	Specification / Requirements	Does the items priced in the pricing schedule comply with the indicated specification/requirement?	
			Comply	Not Comply
1	**DELIVERY TO SITE**	Include all costs associated with delivery, including but not limited to: • Packing. • Loading • Transport • Unloading; the *Client* can make a crane / forklift available on a 7 day (prior to planned delivery) notification from the *Supplier*. Please take note that the *Supplier* is responsible for the items up to delivery and signature by the *Client* on delivery note from the *Supplier* on site. Any damage during delivery to site is for the *Supplier's* account. No payment will be made without including a singed delivery note with the invoice. The *Client* will not be held liable for any handling damage.		
2	**GASKETS**	Shall comply with Appendix A: Drawings		
2.1	GASKET 3mm THK FULL FACE TYPE TO SUIT 900 NB FLANGE RUBBER	Material: 3mm insertion rubber Dimensions: To suit 900NB Flang on Drawing 174422/24 Item 1		
2.2	GASKET: 3mm THK FULL FACE TYPE TO SUIT 400 NB FLANGE RUBBER	Material: 3mm insertion rubber Dimensions: To suit 400NB Flang on Drawing 174423/24 Item 14		
2.3	GASKET: 3mm THK FULL FACE TYPE TO SUIT 300 NB FLANGE RUBBER	Material: 3mm insertion rubber Dimensions: To suit 300NB Flang on Drawing 174422/25 Item 15 and 17		
2.4	GASKET: 3mm THK FULL FACE TYPE TO SUIT 200 NB FLANGE RUBBER	Material: 3mm insertion rubber Dimensions: To suit 200NB Flang on Drawing 174422/24 Item 1		

3	**VALVES AND COUPLINGS**	Shall comply with Appendix A: Drawings and Appendix B: CWD 45		
3.1	RSV GATE VALVE: 400 NB, DOUBLE FLANGED, PN10	• Type: RSV (Resilient Seated Vale) Gate • Drilling to fit 400NB Flange as per Drawing 174423/24 Item 14. • Pressure rating: PN 10 • Valve to comply with CWD 45		
3.2	FLANGED AIR VALVE PN10: 200 NB, PN10	• Drilling to fit 200NB Flang on Drawing 174422/24 Item 1 • Pressure rating: PN 10 • Valve to comply with CWD 45		
3.3	FLEXIBLE PIPE COUPLING TO SUIT 400 NB PIPE, PN10 HDG & EPDM	• Material: Hot Dipped Galvanized with EPDM Rubber Seal • Pressure rating: PN 10		
4	**FASTNERS**	Shall comply with Appendix A: Drawings		
4.1	HEX. HEAD BOLT M30 x 160, C/W HEX. NUT & 2 WASHERS	Dimensions: HEX. HEAD BOLT M30 x 160, C/W HEX. NUT & 2 WASHERS Material and Specification: (SANS 1700) GRADE 4.8 (Hot Dip Galvanized) Supplier shall submit certificate of conformance to specification on delivery.		
4.2	HEX. HEAD BOLT M24 x 90, C/W HEX. NUT & 2 WASHERS	Dimensions: HEX. HEAD BOLT M24 x 90, C/W HEX. NUT & 2 WASHERS Material and Specification: (SANS 1700) GRADE 4.8 (Hot Dip Galvanized) Supplier shall submit certificate of conformance to specification on delivery.		

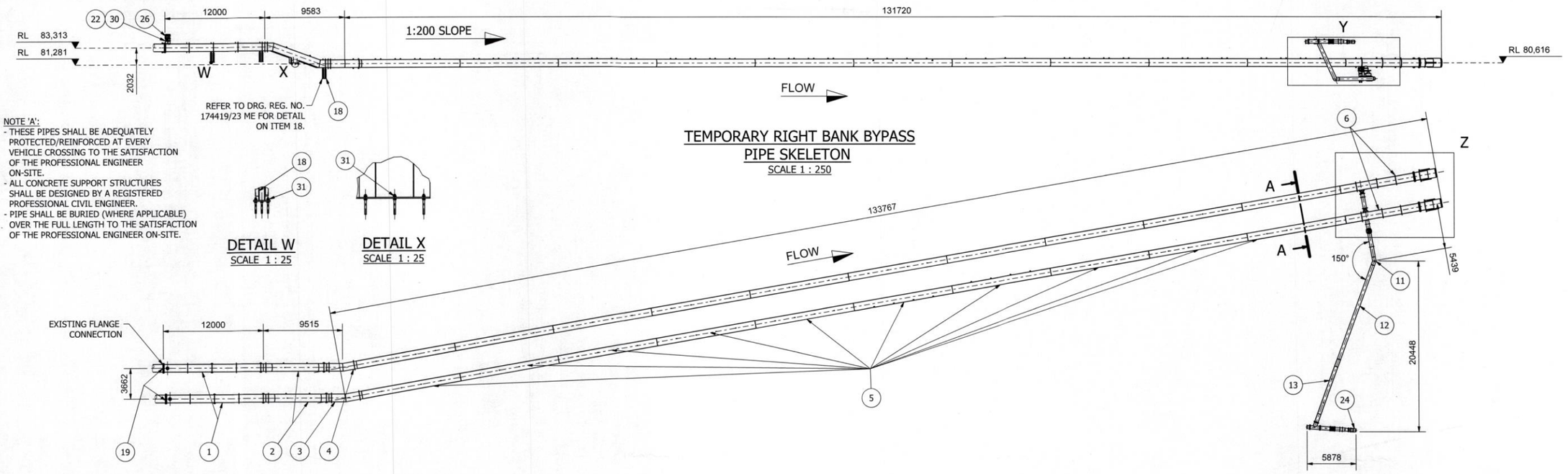
4.3	HEX. HEAD BOLT M20 x 65, C/W HEX. NUT & 2 WASHERS	Dimensions: HEX. HEAD BOLT M20 x 65, C/W HEX. NUT & 2 WASHERS Material and Specification: (SANS 1700) GRADE 4.8 (Hot Dip Galvanized) Supplier shall submit certificate of conformance to specification on delivery.		
4.4	ADHESIVE ANCHOR			
4.4.1	M20 x 240 LONG FULL THREAD, C/W 2 HEX. NUTS & 2 WASHERS	Dimensions: M20 x 240 LONG FULL THREAD, C/W 2 HEX. NUTS & 2 WASHERS Material and Specification: (SANS 1700) GRADE 5.8 (Hot Dip Galvanized) Supplier shall submit certificate of conformance to specification on delivery.		
4.4.2	CHEMICAL ANCOR COMPOUND SUFFIESENT TO INSTALL ITEM D-4.1 INCLUDING APPLICATOR GUN.	Chemical anchor compound should have an equal to or more than a *recommended load* for the following: Uncracked concrete M20: Tension: 51.9 kN Shear: 42 kN Cracked Concrete: Tension: 36.3 kN Shear: 26.9 kN		
4.5	STUD - M24 x 650 LONG FULL THREAD, C/W 4 HEX. NUTS & 2 WASHERS, INCL. 2 DOUBLE THICK WASHERS	Dimensions: M24 x 650 LONG FULL THREAD, C/W 4 HEX. NUTS & 2 WASHERS, INCL. 2 DOUBLE THICK WASHERS Material and Specification: (SANS 1700) GRADE 4.8 (HDG) Anchor to be angled on one side and machined on the other in such a fashion that a nut can be screwed in without any stoppage.  Supplier shall submit certificate of conformance to specification on delivery.		

5	**FLANGES, LUGS PUDDLES- AND THRUST COLLARS**	Sall comply with Appendix A: Drawings Take not on the Drawing off: MATERIAL: - ALL ITEMS TO BE MILD STEEL U.O.S. - ALL MILD STEEL ITEMS TO BE IN ACCORDANCE WITH SANS 50025 / EN 10025 GRADE S355JR *Supplier* shall submit mill certificates on delivery		
5.1	900 FLANGE	As per Appendix A: Drawings (174422/24; Item 1) Tanke note on the drawing off: 		
5.2	900 PUDDLE COLLAR	As per Appendix A: Drawings (174425/24; TYPICAL DETAIL OF Puddle collar - 900 NB)		
5.3	400 FLANGE	As per Appendix A: Drawings (174425/24; Item 15) Tanke note on the drawing off: 		
5.4	400 PUDDLE COLLAR	As per Appendix A: Drawings (174425/24; TYPICAL DETAIL OF Puddle collar - 400 NB)		
5.5	400 THRUST COLLAR	As per Appendix A: Drawings (174425/24; Item 17; SECTION B-B)		
5.6	300 FLANGE	As per Appendix A: Drawings (174425/24; Item 17 & 15) Tanke note on the drawing off: 		
5.7	200 FLANGE	As per Appendix A: Drawings (174422/24; Item 1) Tanke note on the drawing off: 		
5.8	LIFTING LUG	As per Appendix A: Drawings (174423/24; TYPICAL DETAIL OF LIFTING LUG)		

6	**FLAT STEEL STOCK**			
6.1	12mm thick Mild steel plate 1,2m x 2,5m	BE IN ACCORDANCE WITH SANS 50025 / EN 10025 GRADE S355JR *Supplier* shall submit mill certificates on delivery		
6.2	6mm think Mild steel plate 1,2m x 2,5m	BE IN ACCORDANCE WITH SANS 50025 / EN 10025 GRADE S355JR *Supplier* shall submit mill certificates on delivery		
7	**WELDING MATERIAL**			
7.1	Allowance for welding material (cost price)	The specific welding material is not yet known. The Supplier shall procure the material once conformation of the material is received from the *Client*. The procurement of the material will be done on a cost-plus profit basis. The Supplier shall submit 3 Quotations for the welding Material to the Client On written approval of one of the quotations the Supplier can procure the material. Cost price for the material can be claimed under item G-1 A fixed profit on the item can be claimed under item G-2		

3.2.15 APPENDICES

- **Appendix A: Drawings**



ITEM	QTY	TITLE	MATERIAL	ASSEMBLY DRG	MASS	REMARKS	SHEET
32	12	STUD - M24 x 650 LONG FULL THREAD, C/W 4 HEX. NUTS & 4 DOUBLE THICK WASHERS SANS 1700	GRADE 4.8 (HDG)				1
31	48	ADHESIVE ANCHOR - M20 x 240 LONG FULL THREAD, C/W 2 HEX. NUTS & 2 WASHERS SANS 1700	GRADE 5.8 (HDG)		2024 kg	HILTI OR EQUAL	1
30	32	HEX. HEAD BOLT M20 x 65, C/W HEX. NUT & 2 WASHERS (SANS 1700)	GRADE 4.8 (HDG)	STD			1
29	144	HEX. HEAD BOLT M24 x 90, C/W HEX. NUT & 2 WASHERS (SANS 1700)	GRADE 4.8 (HDG)	STD			1
28	96	HEX. HEAD BOLT M30 x 160, C/W HEX. NUT & 2 WASHERS (SANS 1700)	GRADE 4.8 (HDG)	STD			1
27	1	FLEXIBLE PIPE COUPLING TO SUIT 400 NB PIPE, PN10	HDG & EPDM	STD			1
26	2	AIR VALVE: 200 NB	STD	STD		SPEC. CWD 45	1
25	3	RSV GATE VALVE: 400 NB, DOUBLE FLANGED, PN10	STD	STD		SPEC. CWD 45	1
24	1	SLEEVE VALVE: 300 NB HYDRAULICALLY OPERATED, PN16	ST. STEEL	GA8332		EXISTING VALVE	1
23	2	SLEEVE VALVE: 900 NB HYDRAULICALLY OPERATED	STD	174415/23 ME		EXISTING VALVES	1
22	4	GASKET: 3mm THK FULL FACE TYPE TO SUIT 200 NB FLANGE	RUBBER	STD			1
21	2	GASKET: 3mm THK FULL FACE TYPE TO SUIT 300 NB FLANGE	RUBBER	STD		174421/24 ME	1
20	9	GASKET: 3mm THK FULL FACE TYPE TO SUIT 400 NB FLANGE	RUBBER	STD			1
19	4	GASKET: 3mm THK FULL FACE TYPE TO SUIT 900 NB FLANGE	RUBBER	STD		174421/24 ME	1
18	6	TRESTLE (900 NB)	MILD STEEL	174419/23 ME	39 kg		1
17	1	400 - 300 NB ECCENTRIC REDUCER L = 1928	MILD STEEL		133 kg		6
16	1	STRAIGHT PIPE L = 1500 (400 NB)	MILD STEEL		111 kg		6
15	1	400 - 300 NB ECCENTRIC REDUCER L = 355	MILD STEEL		45 kg		6
14	1	TEE (400 NB)	MILD STEEL		141 kg		4
13	1	DOUBLE OFFSET BEND PIPE (400 NB)	MILD STEEL		430 kg		5
12	1	STRAIGHT PIPE L = 12000 (400 NB)	MILD STEEL		535 kg		5
11	1	30° BEND (400 NB)	MILD STEEL		44 kg		5
10	1	STRAIGHT PIPE L = 3000 (400 NB)	MILD STEEL		158 kg		5
9	1	SWEEP TEE (400 NB)	MILD STEEL		141 kg		4
8	1	90° BEND (400 NB)	MILD STEEL		70 kg		4
7	2	STRAIGHT PIPE L = 273	MILD STEEL		31 kg		5
6	2	STRAIGHT PIPE L = 6000 (900 NB)	MILD STEEL		1608 kg		4
5	20	STRAIGHT PIPE L = 12000 (900 NB)	MILD STEEL		1618 kg		4
4	1	10° BEND PIPE (900 NB)	MILD STEEL		624 kg		3
3	1	10° BEND PIPE (900 NB)	MILD STEEL		671 kg		3
2	2	20° DOUBLE OFFSET BEND PIPE (900 NB)	MILD STEEL		1301 kg		3
1	2	STRAIGHT PIPE L = 12000 (900 NB)	MILD STEEL		2024 kg		3

ITEM LIST

DRAWING LEVEL OF DETAIL:
THIS DRAWING ONLY INDICATES THE MAIN PIPE ITEMS.
GENERAL DIMENSIONAL TOLERANCES (U.O.S):
DIMENSIONS UP TO 120: ± 0,3 mm
DIMENSIONS ABOVE 120 TO 400: ± 0,5 mm
DIMENSIONS ABOVE 400 TO 1000: ± 0,8 mm
DIMENSIONS ABOVE 1000: ± 2 mm
PIPE MANUFACTURING AND TOLERANCES SHALL BE IN ACCORDANCE WITH SANS 719.
PRESSURE TEST:
ALL PRESSURE TESTS SHALL BE IN ACCORDANCE WITH CWD 44 REQUIREMENTS.

CORROSION PROTECTION SPECIFICATIONS:
- IN ACCORDANCE WITH DWS STANDARD SPECIFICATION DWS 9900.
- PIPE LINING: MINIMUM OF 250 µm TWO PACK EPOXY.
- PIPE COATING: MINIMUM OF 150 µm TWO PACK EPOXY, PLUS MINIMUM 50 µm OF BRILLIANT GREEN (H10) RECOATABLE POLYURETHANE.
- TRESTLE: ONE COAT OF TWO PACK EPOXY TO A MINIMUM THICKNESS OF 150 µm DFT.
- HOT DIP GALVANIZING (HDG) IN ACCORDANCE WITH SANS 121.

0 5 10 SCALE (mm) 100

ROUND ALL SHARP EDGES / REMOVE BURRS

ALL DIMENSIONS IN MILLIMETERS

DO NOT SCALE DRAWING

PROJECTION SANS 10111

REV No	DATE	DESCRIPTION	SIGNED
0	10/24	ISSUED FOR CONSTRUCTION	
1	05/25	DESIGN CHANGE	

DEPARTMENT OF WATER AND SANITATION
REPUBLIC OF SOUTH AFRICA
HEAD OFFICE
M / E ENGINEERING
PRIVATE BAG X313
PRETORIA 0001
SEDIBENG BUILDING
185 FRANCIS BAARD STREET
PRETORIA
(012) 336-7500
DIRECTOR GENERAL
CHECKED: D. v. Schalkwyk DATE: 28/05/2025
DESIGN: T. DE LANGE
DRAWN: T. DE LANGE
ENGINEER: DATE: 20/05/2025
EXTERNAL APPROVAL: DATE:
CHIEF ENGINEER / APP (Pr. Eng.): DATE: 18/06/2025
DIRECTOR: DATE: 09/06/2025

OLIFANTS-DOORN RIVER WATER RESOURCES PROJECT

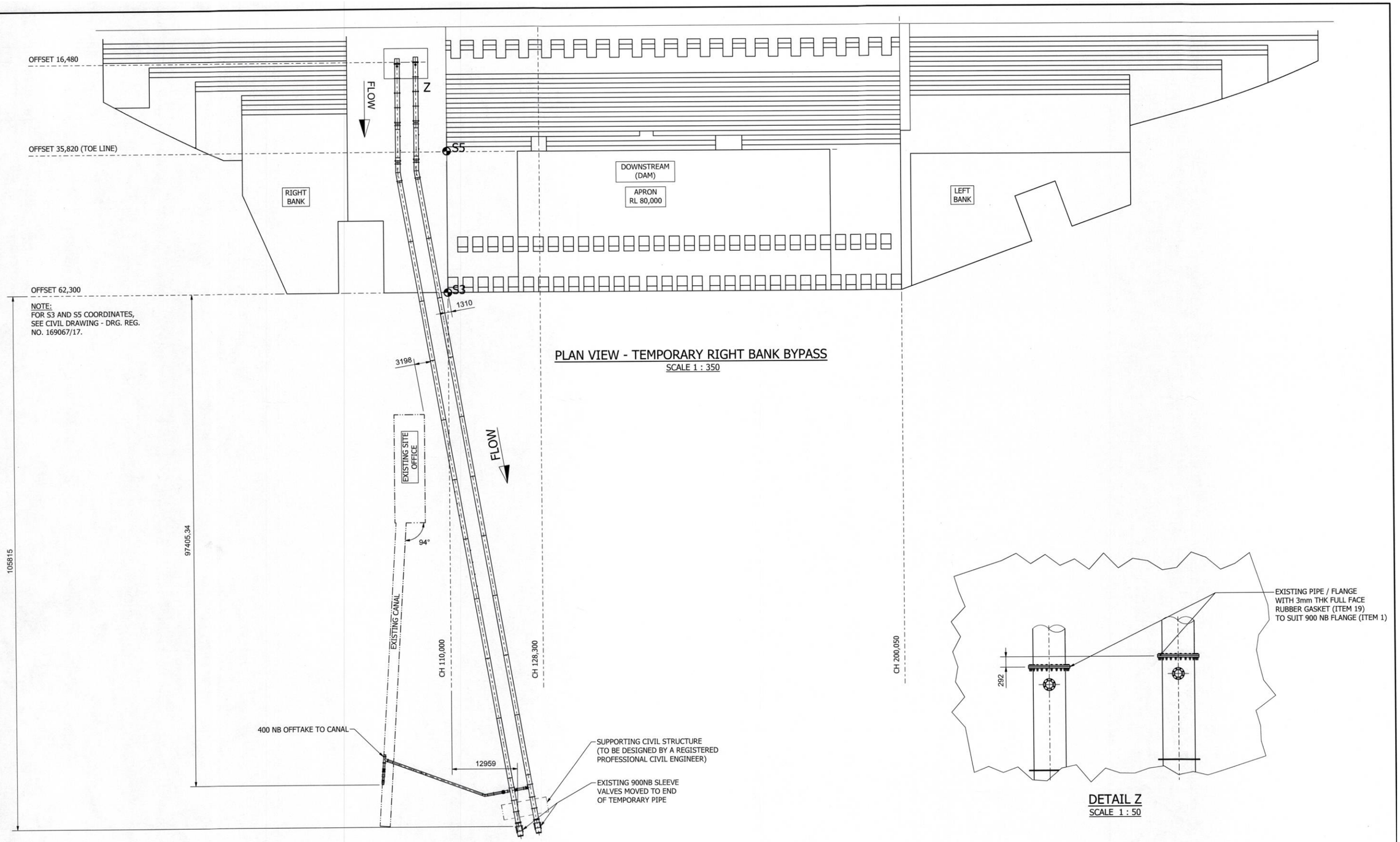
RAISING OF CLANWILLIAM DAM

TEMPORARY RIGHT BANK BYPASS:

PIPES & SPECIALS

-GENERAL ARRANGEMENT, ASSEMBLY & INSTALLATION-

PROVINCE: WESTERN CAPE | KEYCODES: | OTHER NUMBER: CWD 7141
LOCALITY No.: E100-02 | DISTRICT: CLANWILLIAM | SHEET 1 OF 6 | REG. No. 174420/24 ME | REV. No. 1
CALCULATION FILE: ME/E100-02 | TENDER/ CONTRACT No.



NOTE:
FOR S3 AND S5 COORDINATES, SEE CIVIL DRAWING - DRG. REG. NO. 169067/17.

PLAN VIEW - TEMPORARY RIGHT BANK BYPASS
SCALE 1 : 350

DETAIL Z
SCALE 1 : 50

CONCRETE DETAILS:
- THE CONCRETE STRUCTURAL LAYOUT DETAILS ARE ONLY A REPRESENTATION AND NOT THE ACTUAL OR FINAL DAM CONCRETE LAYOUT.
- ALL SUPPORTING CIVIL STRUCTURES REFERENCED ABOVE SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL CIVIL ENGINEER.
- REFER TO THE CIVIL DRAWINGS FOR EXISTING CONCRETE AND EMBANKMENT DETAIL.

GENERAL NOTES:
- SEE DRG. REG. NO. 174415/23 ME FOR PIPE INSTALLATION DETAILS.
- SEE CIVIL DETAIL DRAWINGS FOR S3 AND S5 COORDINATES.

0 5 10 SCALE (mm) 100

ROUND ALL SHARP EDGES / REMOVE BURRS

ALL DIMENSIONS IN MILLIMETERS

DO NOT SCALE DRAWING

PROJECTION SANS 10111

REV No.	DATE	REVISION DESCRIPTION	SIGNED
0	10/24	ISSUED FOR CONSTRUCTION	
1	05/25	DESIGN CHANGE	

DEPARTMENT OF WATER AND SANITATION
REPUBLIC OF SOUTH AFRICA

HEAD OFFICE
M / E ENGINEERING
PRIVATE BAG X313
PRETORIA 0001

SEDIBENG BUILDING
185 FRANCIS BAARD STREET
PRETORIA
(012) 336-7500

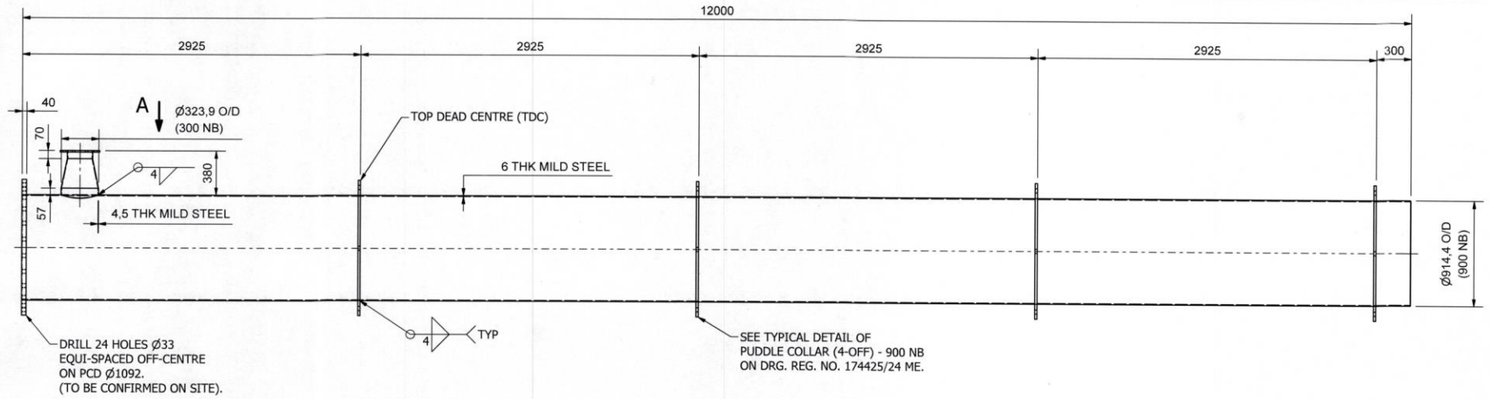
DIRECTOR GENERAL

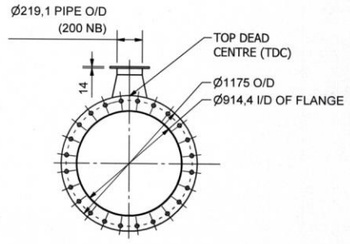
DESIGN: T. DE LANGE
DRAWN: T. DE LANGE
CHECKED: J.P. Schalkwyk 28/05/2025
ENGINEER: 28/05/2025
CHIEF ENGINEER / APP (Pr. Eng.): 18/06/2025
EXTERNAL APPROVAL:
DIRECTOR: 07/06/2025

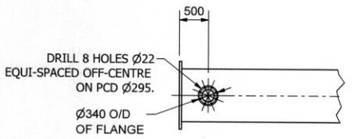
OLIFANTS-DOORN RIVER WATER RESOURCES PROJECT

RAISING OF CLANWILLIAM DAM
TEMPORARY RIGHT BANK BYPASS:
PIPES & SPECIALS
-GENERAL ARRANGEMENT, ASSEMBLY & INSTALLATION-

PROVINCE: WESTERN CAPE	KEYCODES:	OTHER NUMBER: CWD 7142	
LOCALITY No.: E100-02	DISTRICT: CLANWILLIAM	SHEET: 2 OF 6	REG. No.: 174421/24 ME
CALCULATION FILE: ME/E100-02	TENDER/ CONTRACT No.		REV. No.: 1

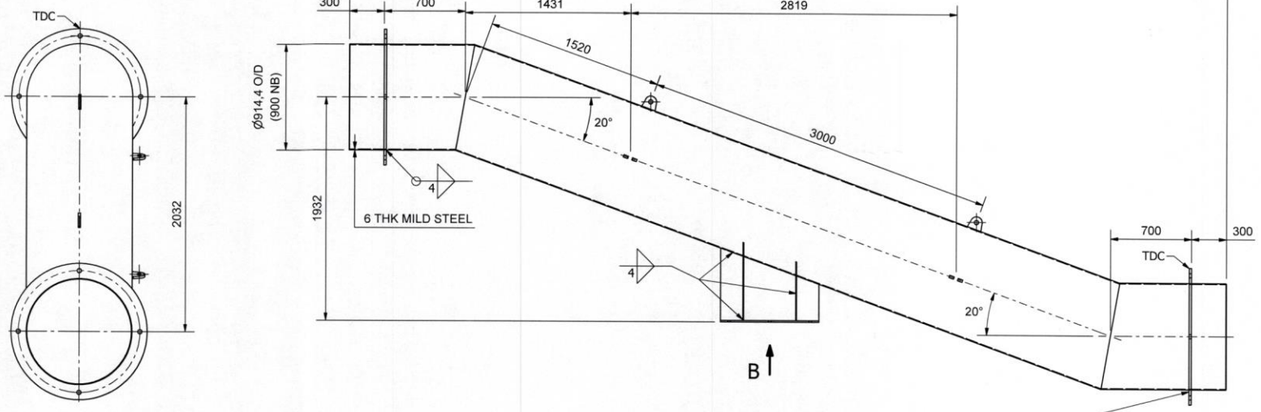


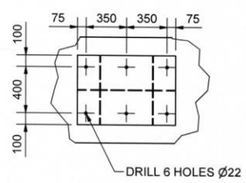




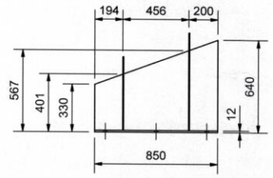
VIEW ON ARROW 'A'
SCALE 1 : 50

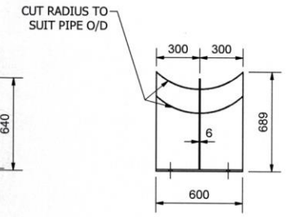
ITEM 1	STRAIGHT PIPE L = 12000
MATL.: MILD STEEL	QTY.: 2
MASS: 2024 kg	SCALE: 1 : 25





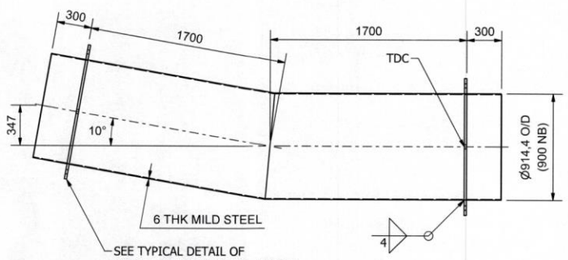
VIEW ON ARROW 'B'
SCALE 1 : 25

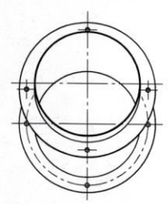




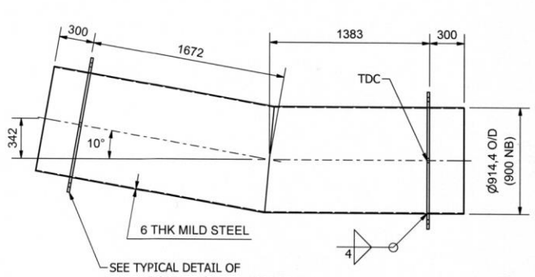
DETAIL OF 20° OFFSET BEND
PIPE - FOOT PIECE (ITEM 4)
SCALE 1 : 20

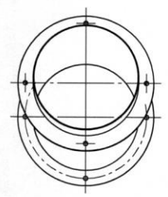
ITEM 2	20° DOUBLE OFFSET BEND PIPE
MATL.: MILD STEEL	QTY.: 2
MASS: 1301 kg	SCALE: 1 : 25





ITEM 3	10° BEND PIPE
MATL.: MILD STEEL	QTY.: 1
MASS: 671 kg	SCALE: 1 : 25





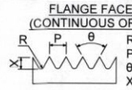
ITEM 4	10° BEND PIPE
MATL.: MILD STEEL	QTY.: 1
MASS: 624 kg	SCALE: 1 : 25

GENERAL WELDING NOTES:
- PERFORM NECESSARY WELD PREPS.
- SEAL WELD ALL OPEN INTERFACES BETWEEN PLATE CONNECTIONS.
- IDENTICAL WELDS SYMBOLISED ONCE ONLY.
- ALL WELDS SHALL BE CONTINUOUS FULL PENETRATION WELDS.
- REMOVE WELD SPATTER.
- WELDERS SHALL BE APPROPRIATELY QUALIFIED.
- ALL FLANGES TO BE WELDED ON PIPES IN ACCORDANCE WITH BS 806, TYPE 6.
- SEE TYPICAL WELD PREPARATION DETAIL ON DRG. REG. NO. 174423/24 ME.

MATERIAL:
- ALL ITEMS TO BE MILD STEEL U.O.S.
- ALL MILD STEEL ITEMS TO BE IN ACCORDANCE WITH SANS 50025 / EN 10025 GRADE S355JR

GENERAL DIMENSIONAL TOLERANCES (U.O.S):
SEE DRG. REG. NO. 174420/24 ME.

FLANGE FACE FINISH DETAIL (U.O.S.)
(CONTINUOUS OR CONCENTRIC GROOVES)



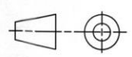
R: NOSE RADIUS	0,2–0,6
P: PITCH	1,5–2,0
θ: ANGLE	50°–60°
X: DEPTH	0,7–0,9

ROUND ALL SHARP EDGES / REMOVE BURRS

ALL DIMENSIONS IN MILLIMETERS

DO NOT SCALE DRAWING

PROJECTION SANS 10111



REV No.	DATE	REVISION DESCRIPTION	SIGNED
0	10/24	ISSUED FOR CONSTRUCTION	
1	05/25	DESIGN CHANGE	

DEPARTMENT OF WATER AND SANITATION
REPUBLIC OF SOUTH AFRICA

HEAD OFFICE
M / E ENGINEERING
PRIVATE BAG X313
PRETORIA 0001

SEDIBENG BUILDING
185 FRANCIS BAARD STREET
PRETORIA
(012) 336-7500

DIRECTOR GENERAL

CHECKED: DJS Schutkamp 28/5/2025 DATE: | DESIGN: T. DE LANGE

ENGINEER: DATE: | DRAWN: T. DE LANGE

CHIEF ENGINEER / APP (Pr. Eng.): E Lutsi 18/06/2025 DATE: | EXTERNAL APPROVAL: DATE:

DIRECTOR: 09/06/2025 DATE:

OLIFANTS-DOORN RIVER WATER RESOURCES PROJECT

RAISING OF CLANWILLIAM DAM

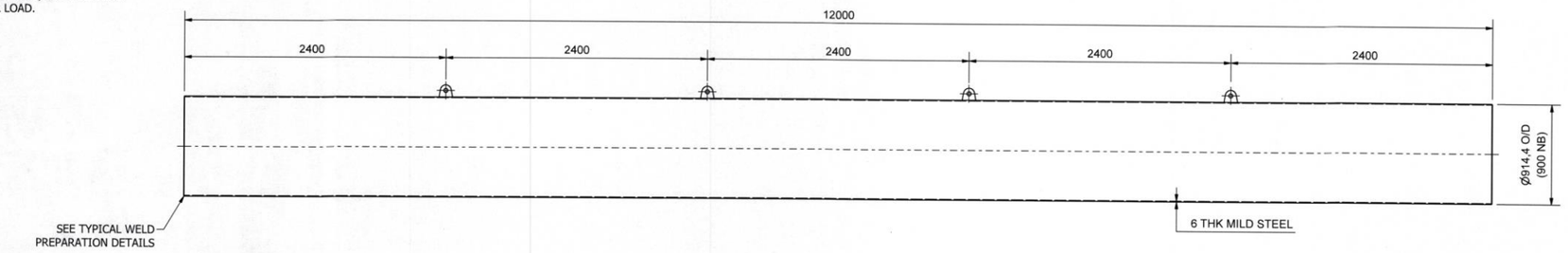
TEMPORARY RIGHT BANK BYPASS:

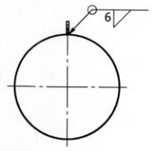
PIPES & SPECIALS

-DETAILS-

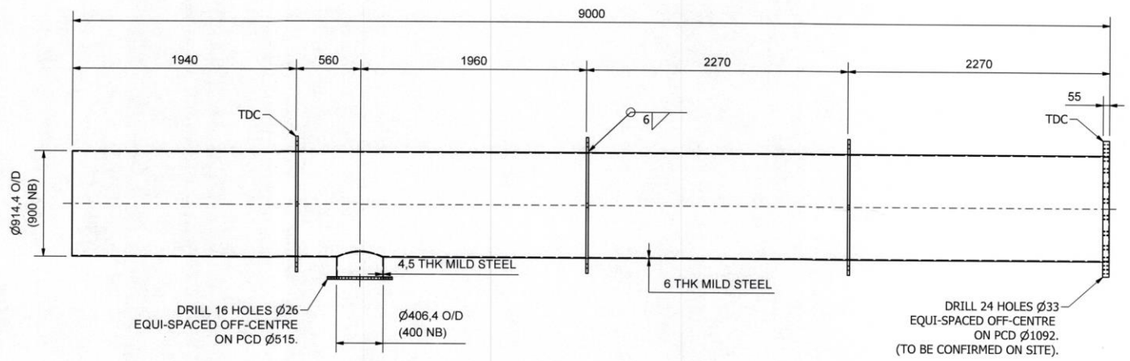
PROVINCE: WESTERN CAPE	KEYCODES:	OTHER NUMBER: CWD 7143	
LOCALITY No.: E100-02	DISTRICT: CLANWILLIAM	SHEET 3 OF 6	REG. No. 174422/24 ME
CALCULATION FILE: ME/E100-02	TENDER/ CONTRACT No.		REV. No. 1

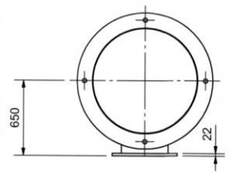
NOTE 'A':
WHEN LIFTING ITEM 5 SHALL BE SUSPENDED ON AT LEAST TWO LIFTING LUGS, BOTH BEARING EQUAL LOAD.





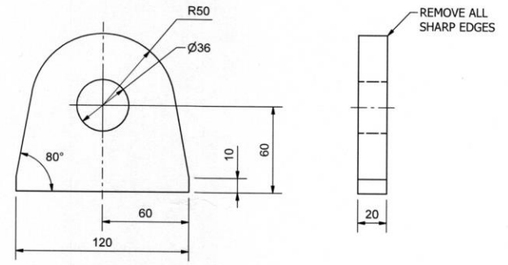
ITEM 5	STRAIGHT PIPE L = 12000
MATL.: MILD STEEL	QTY.: 20
MASS: 1618 kg	SCALE: 1 : 25



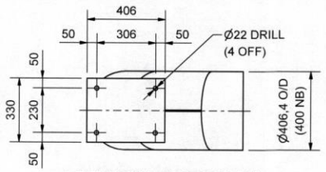


ITEM 6	STRAIGHT PIPE L = 9000
MATL.: MILD STEEL	QTY.: 2
MASS: 1608 kg	SCALE: 1 : 25

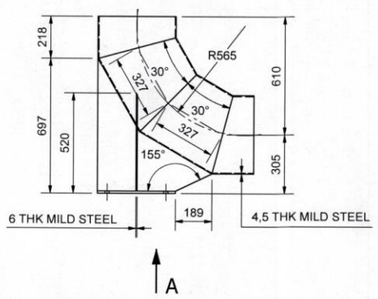
NOTE 'A':
- TOTAL LUGS REQUIRED = 85
- MATERIAL TO BE MILD STEEL (U.O.S)

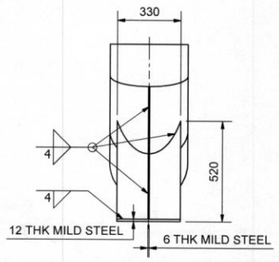


TYPICAL DETAIL OF LIFTING LUG
SCALE 1 : 2

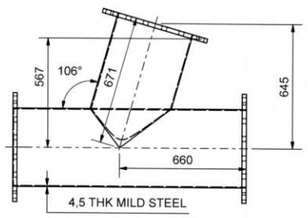


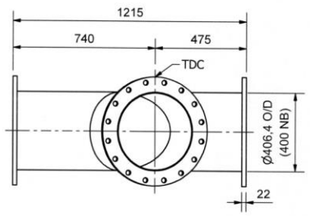
VIEW ON ARROW 'A'
SCALE 1 : 15

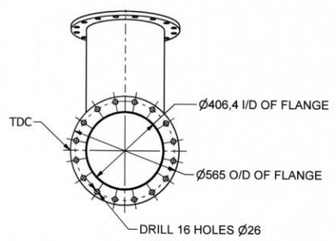




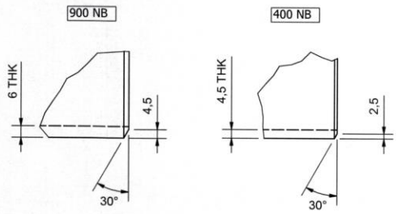
ITEM 8	90° BEND (400 NB)
MATL.: MILD STEEL	QTY.: 1
MASS: 70 kg	SCALE: 1 : 15







ITEM 14	TEE (400 NB)
MATL.: MILD STEEL	QTY.: 1
MASS: 141 kg	SCALE: 1 : 15

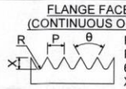


TYPICAL DETAIL OF WELD PREPARATION FOR PIPE ENDS
SCALE 1 : 2

GENERAL DIMENSIONAL TOLERANCES (U.O.S):
DIMENSIONS UP TO 120: ± 0,3 mm
DIMENSIONS ABOVE 120 TO 400: ± 0,5 mm
DIMENSIONS ABOVE 400 TO 1000: ± 0,8 mm
DIMENSIONS ABOVE 1000: ± 2 mm
PIPE MANUFACTURING AND TOLERANCES SHALL BE IN ACCORDANCE WITH SANS 719.
GENERAL WELDING NOTES:
SEE DRG. REG. NO. 174 422/24 ME.

CORROSION PROTECTION:
- SEE DRG. NO. CWD 7141.
FLANGES:
- ALL FLANGES SHALL BE FLAT FACED TYPE.

FLANGE FACE FINISH DETAIL (U.O.S.)
(CONTINUOUS OR CONCENTRIC GROOVES)



R: NOSE RADIUS 0,2–0,6
P: PITCH 1,5–2,0
θ: ANGLE 50°–60°
X: DEPTH 0,7–0,9

0 5 10 SCALE (mm) 100

ROUND ALL SHARP EDGES / REMOVE BURRS

ALL DIMENSIONS IN MILLIMETERS

DO NOT SCALE DRAWING

PROJECTION SANS 10111

REV No.	DATE	REVISION DESCRIPTION	SIGNED
0	10/24	ISSUED FOR CONSTRUCTION	
1	05/25	DESIGN CHANGE	

DEPARTMENT OF WATER AND SANITATION
REPUBLIC OF SOUTH AFRICA

HEAD OFFICE
M / E ENGINEERING
PRIVATE BAG X313
PRETORIA 0001

SEDIBENG BUILDING
185 FRANCIS BAARD STREET
PRETORIA
(012) 336-7500

DIRECTOR GENERAL

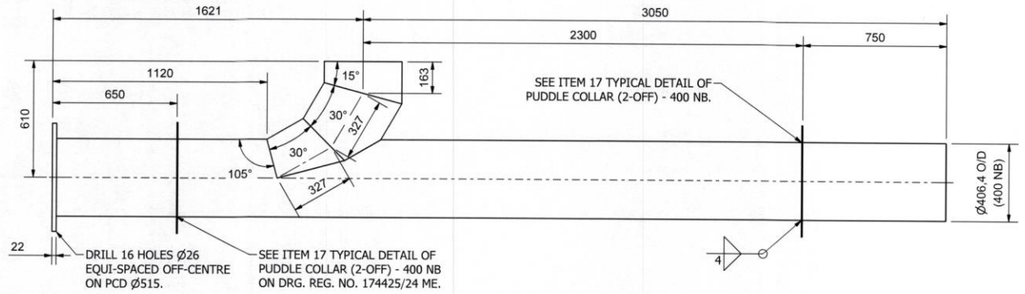
CHECKED: 28/05/2025 DESIGN: T. DE LANGE
ENGINEER: 28/05/2025 DRAWN: T. DE LANGE
CHIEF ENGINEER / APP (Pr. Eng.): 18/06/2025 DATE: EXTERNAL APPROVAL: DATE:
DIRECTOR: 19/06/2025 DATE:

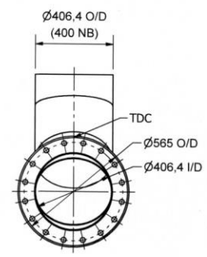
OLIFANTS-DOORN RIVER WATER RESOURCES PROJECT

RAISING OF CLANWILLIAM DAM

TEMPORARY RIGHT BANK BYPASS:
PIPES & SPECIALS
-DETAILS-

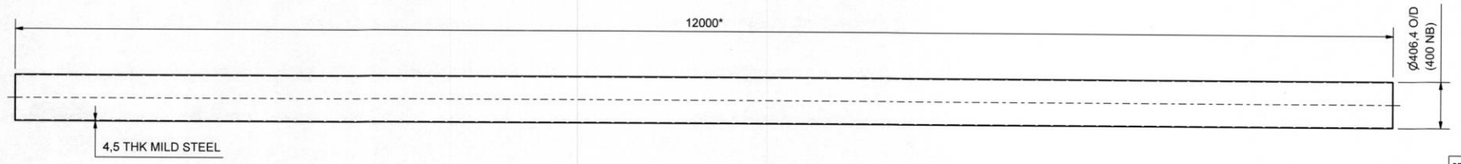
PROVINCE: WESTERN CAPE	KEYCODES:	OTHER NUMBER: CWD 7144	
LOCALITY No.: E100-02	DISTRICT: CLANWILLIAM	SHEET 4 OF 6	REG. No. 174423/24 ME
CALCULATION FILE: ME/E100-02	TENDER/ CONTRACT No.		REV. No. 1



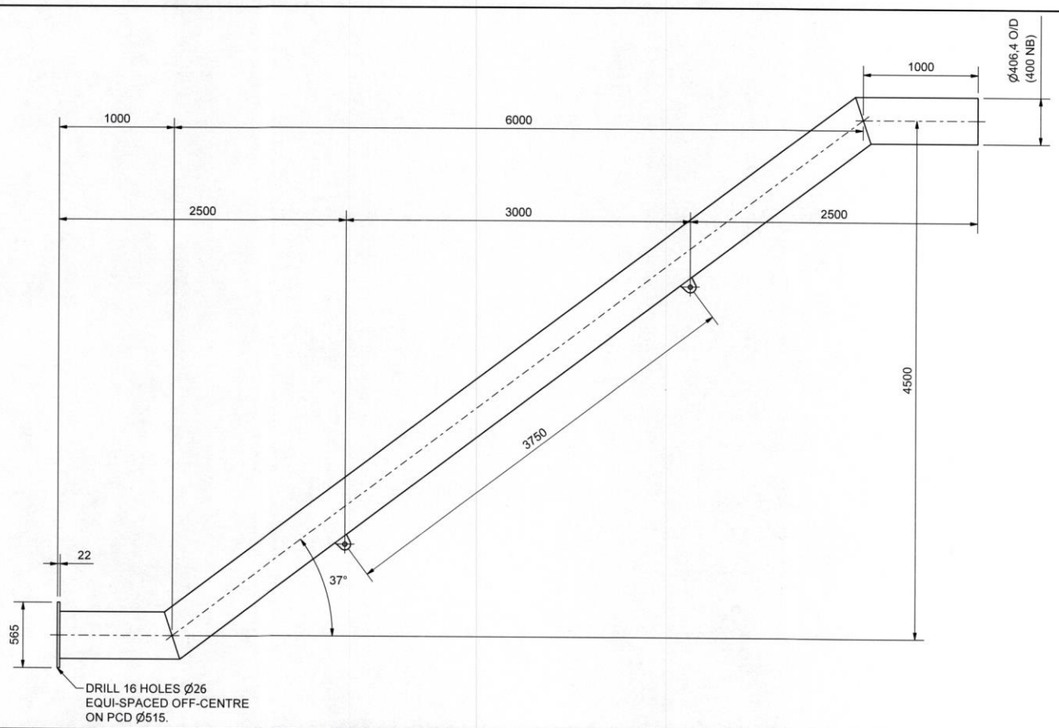


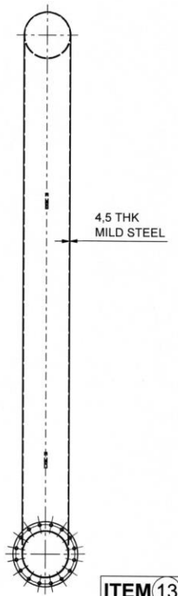
ITEM 9	SWEEP TEE
MATL.: MILD STEEL	QTY.: 1
MASS: 276 kg	SCALE: 1 : 10

NOTE '*':
PIPE LENGTH TO BE CUT ON SITE TO SUIT LOCATION OF 300NB SLEEVE VALVE IN CANAL.

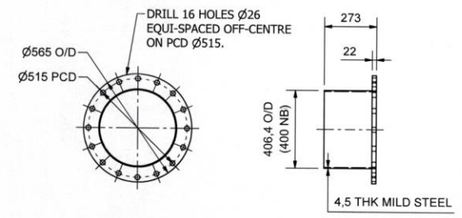


ITEM 12	STRAIGHT PIPE L = 12000
MATL.: MILD STEEL	QTY.: 3
MASS: 535 kg	SCALE: 1 : 10

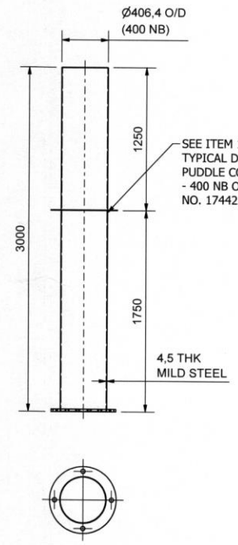




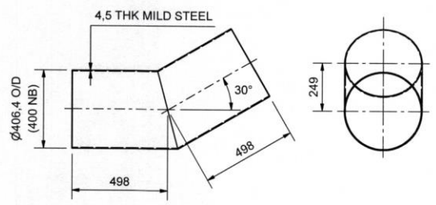
ITEM 13	DOUBLE OFFSET BEND PIPE (400 NB)
MATL.: MILD STEEL	QTY.: 1
MASS: 430 kg	SCALE: 1 : 20



ITEM 7	STRAIGHT PIPE L = 273
MATL.: MILD STEEL	QTY.: 2
MASS: 31 kg	SCALE: 1 : 10



ITEM 10	STRAIGHT PIPE L = 3000
MATL.: MILD STEEL	QTY.: 1
MASS: 158 kg	SCALE: 1 : 10



ITEM 11	30° BEND (400 NB)
MATL.: MILD STEEL	QTY.: 1
MASS: 44 kg	SCALE: 1 : 10

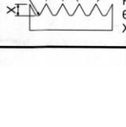
GENERAL WELDING NOTES:
- PERFORM NECESSARY WELD PREPS.
- SEAL WELD ALL OPEN INTERFACES BETWEEN PLATE CONNECTIONS.
- IDENTICAL WELDS SYMBOLISED ONCE ONLY.
- ALL WELDS SHALL BE CONTINUOUS FULL PENETRATION WELDS.
- REMOVE WELD SPATTER.
- WELDERS SHALL BE APPROPRIATELY QUALIFIED.
- ALL FLANGES TO BE WELDED ON PIPES IN ACCORDANCE WITH BS 806, TYPE 6.
- SEE TYPICAL WELD PREPARATION DETAIL ON DRG. REG. NO. 174423/24 ME.

GENERAL DIMENSIONAL TOLERANCES (U.O.S):

DIMENSIONS UP TO 120:	± 0,3 mm
DIMENSIONS ABOVE 120 TO 400:	± 0,5 mm
DIMENSIONS ABOVE 400 TO 1000:	± 0,8 mm
DIMENSIONS ABOVE 1000:	± 2 mm

PIPE MANUFACTURING AND TOLERANCES SHALL BE IN ACCORDANCE WITH SANS 719.

FLANGE FACE FINISH DETAIL (U.O.S.)
(CONTINUOUS OR CONCENTRIC GROOVES)



R: NOSE RADIUS	0,2–0,6
P: PITCH	1,5–2,0
θ: ANGLE	50°–60°
X: DEPTH	0,7–0,9

0 5 10 SCALE (mm) 100

ROUND ALL SHARP EDGES / REMOVE BURRS

ALL DIMENSIONS IN MILLIMETERS

DO NOT SCALE DRAWING

PROJECTION SANS 10111

REV No.	DATE	REVISION DESCRIPTION	SIGNED
0	10/24	ISSUED FOR CONSTRUCTION	
1	05/25	DESIGN CHANGE	

DEPARTMENT OF WATER AND SANITATION
REPUBLIC OF SOUTH AFRICA

HEAD OFFICE
M / E ENGINEERING
PRIVATE BAG X313
PRETORIA 0001

SEDIBENG BUILDING
185 FRANCIS BAARD STREET
PRETORIA
(012) 336-7500

DIRECTOR GENERAL

CHECKED: JD v Schalkwyk	DATE: 28/5/2025	DESIGN: T. DE LANGE	
ENGINEER:	DATE: 28/05/2025	DRAWN: T. DE LANGE	
CHIEF ENGINEER / APP (Pr. Eng.):	DATE: 18/06/2025	EXTERNAL APPROVAL: DIRECTOR:	DATE: 04/06/2025

OLIFANTS-DOORN RIVER WATER RESOURCES PROJECT

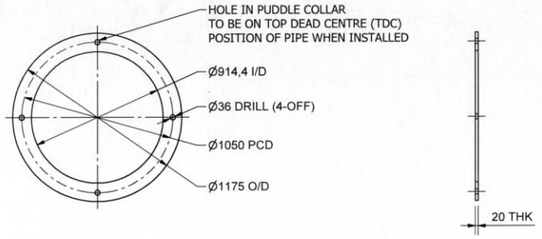
RAISING OF CLANWILLIAM DAM

TEMPORARY RIGHT BANK BYPASS:

PIPES & SPECIALS

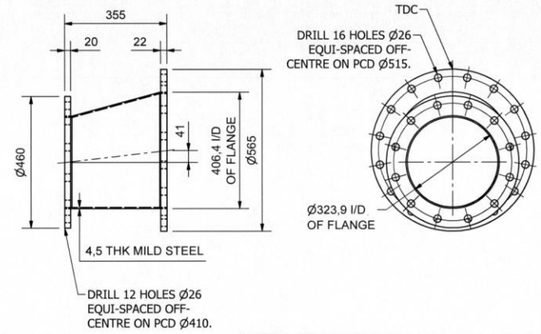
-DETAILS-

PROVINCE: WESTERN CAPE	KEYCODES:	OTHER NUMBER: CWD 7145	
LOCALITY No.: E100-02	DISTRICT: CLANWILLIAM	SHEET: 5 OF 6	REG. No.: 174424/24 ME
CALCULATION FILE: ME/E100-02	TENDER/ CONTRACT No.		REV. No.: 1

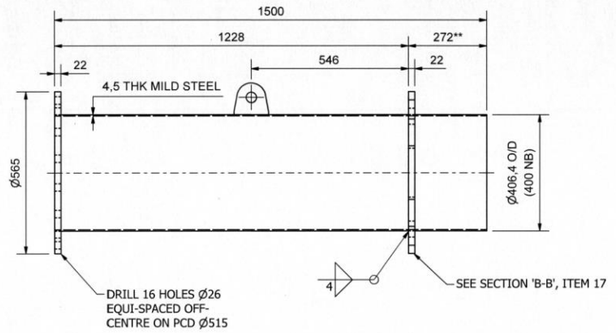


TYPICAL DETAIL OF PUDDLE COLLAR - 900 NB

SCALE 1 : 20



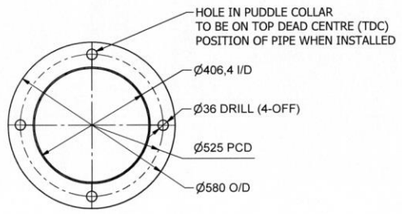
ITEM 15	400 - 300 NB ECCENTRIC REDUCER
MATL.: MILD STEEL	QTY.: 1
MASS: 45 kg	SCALE: 1 : 10



NOTE "**":
WELDING IN THIS AREA
TO BE DRESSED FLUSH.

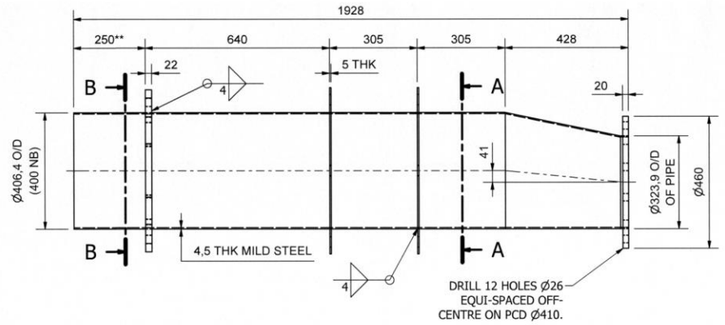
ITEM 16	STRAIGHT PIPE (400 NB)
MATL.: MILD STEEL	QTY.: 1
MASS: 111 kg	SCALE: 1 : 10

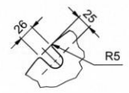
NOTE "**":
WELDING IN THIS AREA
TO BE DRESSED FLUSH.



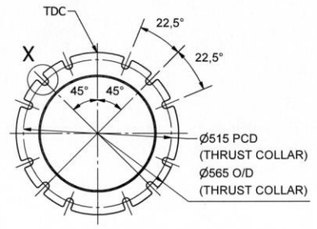
SECTION A-A
TYPICAL DETAIL OF
PUDDLE COLLAR - 400 NB

SCALE 1 : 10





DETAIL X
SCALE 1 : 5



SECTION B-B
TYPICAL DETAIL OF THRUST COLLAR

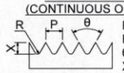
SCALE 1 : 10

ITEM 17	STRAIGHT PIPE (400 NB)
MATL.: MILD STEEL	QTY.: 6
MASS: 133 kg	SCALE: 1 : 10

GENERAL WELDING NOTES:
- PERFORM NECESSARY WELD PREPS.
- SEAL WELD ALL OPEN INTERFACES BETWEEN PLATE CONNECTIONS.
- IDENTICAL WELDS SYMBOLISED ONCE ONLY.
- ALL WELDS SHALL BE CONTINUOUS FULL PENETRATION WELDS.
- REMOVE WELD SPATTER.
- WELDERS SHALL BE APPROPRIATELY QUALIFIED.
- ALL FLANGES TO BE WELDED ON PIPES IN ACCORDANCE WITH BS 806, TYPE 6.
- SEE TYPICAL WELD PREPARATION DETAIL ON DRG. REG. NO. 174423/24 ME.

GENERAL DIMENSIONAL TOLERANCES (U.O.S):
DIMENSIONS UP TO 120:
DIMENSIONS ABOVE 120 TO 400:
DIMENSIONS ABOVE 400 TO 1000:
DIMENSIONS ABOVE 1000:
PIPE MANUFACTURING AND TOLERANCES SHALL BE IN ACCORDANCE WITH SANS 719.

FLANGE FACE FINISH DETAIL (U.O.S.)
(CONTINUOUS OR CONCENTRIC GROOVES)



R: NOSE RADIUS 0,2–0,6
P: PITCH 1,5–2,0
θ: ANGLE 50°–60°
X: DEPTH 0,7–0,9

0 5 10 SCALE (mm) 100

ROUND ALL SHARP EDGES / REMOVE BURRS

ALL DIMENSIONS IN MILLIMETERS

DO NOT SCALE DRAWING

PROJECTION SANS 10111

REV No.	DATE	REVISION DESCRIPTION	SIGNED
0	10/24	ISSUED FOR CONSTRUCTION	
1	05/25	DESIGN CHANGE	

DEPARTMENT OF WATER AND SANITATION
REPUBLIC OF SOUTH AFRICA

HEAD OFFICE
M / E ENGINEERING
PRIVATE BAG X313
PRETORIA 0001

SEDIBENG BUILDING
185 FRANCIS BAARD STREET
PRETORIA
(012) 336-7500

DIRECTOR GENERAL

CHECKED: J J Schalkwyk DATE: 20/5/2025
DESIGN: T. DE LANGE
DRAWN: T. DE LANGE
ENGINEER: DATE: 20/05/2025
EXTERNAL APPROVAL: DATE:
CHIEF ENGINEER / APP (Pr. Eng.): E Keller DATE: 19/06/2025
DIRECTOR: DATE: 20/06/2025

OLIFANTS-DOORN RIVER WATER RESOURCES PROJECT

RAISING OF CLANWILLIAM DAM

TEMPORARY RIGHT BANK BYPASS:

PIPES & SPECIALS

-DETAILS-

PROVINCE: WESTERN CAPE	KEYCODES:	OTHER NUMBER: CWD 7146	
LOCALITY No.: E100-02	DISTRICT: CLANWILLIAM	SHEET: 6 OF 6	REG. No.: 174425/24 ME
CALCULATION FILE: ME/E100-02	TENDER/ CONTRACT No.		REV. No.: 1

- **Appendix B: CWD 45**

PARTICULAR SPECIFICATION CWD 45
VALVES

PRELIMINARY SPECIFICATION

INDEX TO PARTICULAR SPECIFICATION CWD 45

PARTICULAR SPECIFICATION CWD 45
VALVES

CWD 45.1 **SCOPE**

CWD 45.1.1 Services required

The scope of work shall include the design, preparation of Drawings, supply of all materials, manufacture, shop assembly and testing, corrosion protection, delivery to Site, storage and installation at Site, site corrosion protection repairs, putting to work, testing (both at the Manufacturer's Works and on Site), Tests on Completion, and maintenance (other than normal operating maintenance) and provision of Operation and Maintenance Manuals of the following Equipment and which is described in detail hereinafter:

All valves complete with actuators, as specified in TABLE 2, suitable for the conditions as indicated and as further specified in this Particular Specification.

All bolts, nuts, studs, washers, packing for mounting the valves and all components required for the valve installation into the pipe system are included in this Particular Specification. Where valves are refurbished, one complete set of fasteners shall be supplied for each flange of such a valve.

The Tenderer's offer shall be in accordance with the following Drawings:

TABLE 1: LIST OF DRAWINGS

Access Gallery:	####
Bottom outlets:	####
Crossover Chamber (L/Bank):	CWD 7063 – CWD 7066
Crossover Chamber (R/Bank):	####
Discharge Chamber (R/Bank):	####
Flow Meter Chamber (L/Bank):	CWD 7067 – CWD 7068
Flow Meter Chamber (R/Bank):	####
Intake Tower:	CWD 7056 – CWD 7059
Offtake Chamber (L/Bank):	CWD 7072
Offtake Chamber (R/Bank):	####
Valve Control Room Chamber:	CWD 7069 – CWD 7071
Hydraulic lines for bottom outlet valve control:	####

The work on Site further includes the Mechanical Sub-contractor's establishment on Site at commencement of his work on Site and de-establishment at completion thereof.

All drawings required for manufacture of the valves and all accessories to be supplied under this Contract shall be prepared by the Mechanical Sub-contractor for approval by the Engineer. The provisional drawings prepared by the Engineer, and included in the Tender Document, serve to illustrate in conjunction with the Project Specification the philosophy required in the Mechanical Sub-contractor's design with particular reference to functional requirements.

CWD 45.1.2 General requirements

The valves specified in this Particular Specification have been designated by The Department of Trade and Industry as a sector for local production content. The stipulated minimum threshold percentage for local production and content of valves and actuators is 70%. Tenderers shall indicate in Form SBD 6.2 the local content of each of the valves and actuators offered.

Contracts will only be awarded to Tenderers who are capable of manufacturing and supplying to the required standard. Only Tenderers who can demonstrate that they are bona fide manufacturers of the equipment as specified in this Particular Specification, with their own manufacturing and service workshop, may tender. An established local service and spare parts network for the equipment offered shall be available at the time of Tender closing. Workmanship shall conform to accepted industrial standards and welders shall be coded. The size of tools and equipment used shall be proportional to the task being carried out.

CWD 45.1.3 Guarantee

The Defects Notification Period shall read 12 (twelve) months from the date of issue of the Commissioning Certificate by the Engineer to the Contractor and shall terminate with the issue of the Final Certificate. It is envisaged that commissioning will take place within 30 days of completion of all outstanding points. The Contractor's Guarantee shall include all aspects of the manufacturing process, including work done by any Mechanical Sub-contractors.

Due to the valves being purchased ahead of time, the actual date of installation at the dam is uncertain.

In order to avoid expiry of the guarantee while these valves are still in storage prior to installation and commissioning, the Main Contractor will request the reinstatement of the guarantee at the time of commissioning. Tenderers shall indicate in the Bill of Quantities the cost of reinstating the guarantee as at the time of Tender. Should the implementation of this option be free of charge, the Tenderer shall state this on the Bill of Quantities.

If valves are to be stored at the Clanwilliam Dam Site, the Tenderer shall, together with his offer provide the requirements for storage of the valves by the Main Contractor, prior to installation, in order for him to honour the implementation of the guarantee at a later stage. The Tenderer shall inspect and approve the storage area at the Clanwilliam Dam Site prior to delivery of the valves.

CWD 45.1.4 Target date for delivery

The target dates for delivery and installation of the valves to the Clanwilliam Dam Site shall be in accordance with the Main Contractors construction programme.

All sleeve valve hoods shall be delivered to Site for building into the civil structure by the Main Contractor as per the construction programme.

All items must be priced in order for the tenderer to be considered.

TABLE 2
SCHEDULE OF VALVES TO BE SUPPLIED AND STORED ON SITE: SIZE, PRESSURE RATING

Location	Use	Type	Size DN [mm]	Nominal Pressure Rating PN [bar]	Number Off	Gearbox	Flow velocity (m/s)		Notes	Item No on Drawing Column ***	Drawing No (Column***)
						Orientation (See Note g)	Normal	Maximum			
Access Gallery											
Access Gallery	Drainage and Backfill	Ball	100	10	4		-	-	(d)		
Access Gallery	Wash Water and Isolation	Ball	80	25	4		-	-	(i)		
Access Gallery	Pressurised Air Isolation	Ball	25	25	11		-	-	(d),(h)		
Access Gallery	Wash Water Isolation and Drainage	Ball	25	25	10		-	-	(i),(h)		
Access Gallery	Chamber Drainage	Non Return Valve	100	10	2				-		
Bottom outlets											
Bottom outlets	Drainage and Backfill	Ball	100	10	6		-	-	(d)		
Bottom outlets	Isolation (existing) (Refurbish-Permanent) Or Supply new (see CWD 45.4.8)	Butterfly	1 000	10	1	L/H Valve L/H Proj.	5	10	(a),(b), (f),(g)		

Location	Use	Type	Size DN [mm]	Nominal Pressure Rating PN [bar]	Number Off	Gearbox	Flow velocity (m/s)		Notes	Item No on Drawing Column ***	Drawing No (Column***)
						Orientation (See Note g)	Normal	Maximum			
Bottom outlets	Flow Control (existing) (Temporary-Refurbish-Storage)	Fixed Cone Sleeve	900	10	1		±16	±23	(c),(e)		
Bottom outlets	Flow Control (existing) (Refurbish-Permanent)	Fixed Cone Sleeve	900	10	1		±16	±33	(c),(e)		
Bottom outlets	Flow Control (existing) (Refurbish-Storage)	Fixed Cone Sleeve	300	10	1		±15	±23	(c),(e)		
Bottom outlets	Isolation (existing) (Refurbish-Storage)	Knife Gate Galve	1 000	10	1		5	10			
Bottom outlets	Chamber Drainage	Non Return Valve	100	10	3				-		

Location	Use	Type	Size DN [mm]	Nominal Pressure Rating PN [bar]	Number Off	Gearbox	Flow velocity (m/s)		Notes	Item No on Drawing Column ***	Drawing No (Column***)
						Orientation (See Note g)	Normal	Maximum			
Crossover Chamber (L/Bank)											
Crossover Chamber (L/Bank)	Air	Air	200	10	4		-	-	-		
Crossover Chamber (L/Bank)	Wash Water Isolation and Drainage	Ball	25	25	4				(i),(h)		
Crossover Chamber (L/Bank)	Isolation	Butterfly	1 800	10	2	R/H Valve L/H Proj.	5	10	(a),(b), (f),(g)		
Crossover Chamber (L/Bank)	Isolation	Butterfly	1 800	10	4	L/H Valve R/H Proj.	5	10	(a),(b), (f),(g)		
Crossover Chamber (L/Bank)	Drainage and Backfill	RSV	300	10	6		-	-	(d)		
Crossover Chamber (L/Bank)	Air Valve Isolation	RSV	200	10	4		-	-	(d)		
Crossover Chamber (R/Bank)											
Crossover Chamber (R/Bank)	Air	Air	200	10	2		-	-	-		
Crossover Chamber (R/Bank)	Wash Water Isolation and Drainage	Ball	25	25	2				(i),(h)		
Crossover Chamber (R/Bank)	Isolation	Butterfly	1 000	10	2	R/H Valve L/H Proj.	5	10	(a),(b), (f),(g)		

Location	Use	Type	Size DN [mm]	Nominal Pressure Rating PN [bar]	Number Off	Gearbox	Flow velocity (m/s)		Notes	Item No on Drawing Column ***	Drawing No (Column***)
						Orientation (See Note g)	Normal	Maximum			
Crossover Chamber (R/Bank)	Isolation	Butterfly	1 000	10	3	L/H Valve R/H Proj.	5	10	(a),(b), (f),(g)		
Crossover Chamber (R/Bank)	Chamber Drainage	Non Return Valve	150	10	1				-		
Crossover Chamber (R/Bank)	Drainage and Backfill	RSV	300	10	3		-	-	(d)		
Crossover Chamber (R/Bank)	Air Valve Isolation	RSV	200	10	2		-	-	(d)		
Discharge Chamber (R/Bank)											
Discharge Chamber (R/Bank)	Air	Air	200	10	2		-	-	-		
Discharge Chamber (R/Bank)	Wash Water Isolation and Drainage	Ball	25	25	1				(i),(h)		
Discharge Chamber (R/Bank)	Isolation	Butterfly	1 000	10	1	L/H Valve R/H Proj.	5	10	(a),(b), (f),(g)		
Discharge Chamber (R/Bank)	Isolation	Butterfly	1000	10	1	R/H Valve L/H Proj.	5	10	(a),(b), (f),(g)		
Discharge Chamber (R/Bank)	Flow Control (new) (Permanent)	Fixed Cone Sleeve	600	10	2		±14	±22	(c),(e)		

Location	Use	Type	Size DN [mm]	Nominal Pressure Rating PN [bar]	Number Off	Gearbox	Flow velocity (m/s)		Notes	Item No on Drawing Column ***	Drawing No (Column***)
						Orientation (See Note g)	Normal	Maximum			
Discharge Chamber (R/Bank)	Chamber Drainage	Non Return Valve	150	10	1				-		
Discharge Chamber (R/Bank)	Drainage and Backfill	RSV	300	10	4		-	-	(d)		
Discharge Chamber (R/Bank)	Air valve isolation	RSV	200	10	2		-	-	(d)		
Flow Meter Chamber (L/Bank)											
Flow Meter Chamber (L/Bank)	Air	Air	200	10	2		-	-	-		
Flow Meter Chamber (L/Bank)	Wash Water Isolation and Drainage	Ball	25	25	2				(i),(h)		
Flow Meter Chamber (L/Bank)	Isolation	Butterfly	1 800	10	1	R/H Valve L/H Proj.	5	10	(a),(b), (f),(g)		
Flow Meter Chamber (L/Bank)	Isolation	Butterfly	1 800	10	1	L/H Valve R/H Proj.	5	10	(a),(b), (f),(g)		
Flow Meter Chamber (L/Bank)	Drainage and Backfill	RSV	300	10	3		-	-	(d)		

Location	Use	Type	Size DN [mm]	Nominal Pressure Rating PN [bar]	Number Off	Gearbox	Flow velocity (m/s)		Notes	Item No on Drawing Column ***	Drawing No (Column***)
						Orientation (See Note g)	Normal	Maximum			
Flow Meter Chamber (L/Bank)	Drainage and Backfill	RSV	200	10	2		-	-	(d)		
Flow Meter Chamber (R/Bank)											
Flow Meter Chamber (R/Bank)	Chamber Drainage	Non Return Valve	150	10	1		-	-	-		
Intake Tower											
Intake Tower	Wash Water Isolation and Drainage	Ball	25	25	10		-	-	(i)		
Intake Tower	Offtake Level Selection	Butterfly	1 800	10	3	L/H Valve R/H Proj.	5	10	(a),(b), (f),(g)		
Intake Tower	Offtake Level Selection	Butterfly	1 800	10	4	R/H Valve L/H Proj.	5	10	(a),(b), (f),(g)		
Intake Tower	Water level recorder	RSV	100	10	1		-	-	(d)		
Offtake Chamber (L/Bank)											
Offtake Chamber (L/Bank)	Air	Air	200	10	4		-	-	-		

Location	Use	Type	Size DN [mm]	Nominal Pressure Rating PN [bar]	Number Off	Gearbox	Flow velocity (m/s)		Notes	Item No on Drawing Column ***	Drawing No (Column***)
						Orientation (See Note g)	Normal	Maximum			
Offtake Chamber (L/Bank)	Wash Water Isolation and Drainage	Ball	25	25	2				(i),(h)		
Offtake Chamber (L/Bank)	Isolation	Butterfly	1 000	10	1	L/H Valve R/H Proj.	5	10	(a),(b), (f),(g)		
Offtake Chamber (L/Bank)	Isolation	Butterfly	1 000	10	1	R/H Valve L/H Proj.	5	10	(a),(b), (f),(g)		
Offtake Chamber (L/Bank)	Air Valve Isolation	RSV	200	10	4		-	-	(d)		
Offtake Chamber (R/Bank)											
Offtake Chamber (R/Bank)	Chamber Drainage	Non Return Valve	150	10	2				-		
Offtake Chamber (R/Bank)	Drainage, Backfill and Pumpstation Supply	RSV	300	10	4		-	-	(d)		

Location	Use	Type	Size DN [mm]	Nominal Pressure Rating PN [bar]	Number Off	Gearbox	Flow velocity (m/s)		Notes	Item No on Drawing Column ***	Drawing No (Column***)
						Orientation (See Note g)	Normal	Maximum			
Valve Control Room Chamber (L/Bank)											
Valve Control Room Chamber	Air	Air	200	10	4		-	-	-		
Valve Control Room Chamber	Wash Water Isolation and Drainage	Ball	25	25	4				(i),(h)		
Valve Control Room Chamber	Isolation	Butterfly	1 800	10	2	L/H Valve R/H Proj.	5	10	(a),(b), (f),(g)		
Valve Control Room Chamber	Isolation	Butterfly	1 000	10	2	R/H Valve L/H Proj.	5	10	(a),(b), (f),(g)		
Valve Control Room Chamber	Flow Control	Fixed Cone Sleeve	1 000	10	2		±16	±33	(c),(e)		
Valve Control Room Chamber	Flow Control	Fixed Cone Sleeve	600	10	2		±14	±28	(c),(e)		
Valve Control Room Chamber	Drainage and Backfill	RSV	300	10	5		-	-	(d)		

Location	Use	Type	Size DN [mm]	Nominal Pressure Rating PN [bar]	Number Off	Gearbox	Flow velocity (m/s)		Notes	Item No on Drawing Column ***	Drawing No (Column***)
						Orientation (See Note g)	Normal	Maximum			
Valve Control Room Chamber	Air Valve Isolation	RSV	200	10	4		-	-	(d)		

Notes: (Refer to text for detailed Specifications)

(a) (i) To BS 5155: Double flanged short so as to be retained by upstream flange when downstream pipe work removed; normally fully open or closed. Emergency closure under power or by hand, under flow velocities up to 10 m/s.
(ii) Flanges to SANS 1123, to appropriate pressure rating; flat face; gramophone finish (see elsewhere in Particular Specification CWD 45 for details).
(b) Complete with electric actuator, and manual override.
(c) Electro-hydraulic operation, with manual hydraulic override.
(d) Valve shall be required to open and close against maximum unbalanced head (45 m), manually.
(e) Valve shall be required to close against maximum flow at full head (45 m).
(f) Valve shall be required to open and close against maximum unbalanced head (45 m), electrically and manually.
(g) Gearbox Orientation is only applicable to butterfly valves. The first description is the gearbox orientation, either left hand side (L/H) or right hand side (R/H). The second description is the hand wheel projection, either left hand side (L/H) or right hand side (R/H).
(h) Valve shall have 1" female thread on both sides.
(i) Valve shall be required to open against maximum unbalanced head (350 m), manually.

CWD 45.2 **INTERPRETATIONS**

CWD 45.2.1 Specifications and Supporting Standards

This Particular Specification CWD 45 shall where applicable, have preference over all other sections of this Tender Document or any Standard Specifications referred to.

This Particular Specification shall be read in conjunction with the following:

Project Mechanical Specifications for Clanwilliam Dam:

Particular Specification DWS 1601 – GENERAL MECHANICAL SPECIFICATION

Project Electrical Specifications for Clanwilliam Dam:

Particular Specification CWD 51 – CABLES, TERMINATIONS, JUNCTION BOXES AND SOCKETS
Particular Specification CWD 52 – LOW VOLTAGE EQUIPMENT
Particular Specification CWD 53 – EARTHING SYSTEMS

Departmental Standard Specifications (which are available on request):

STANDARD SPECIFICATION DWS 1601:	GENERAL MECHANICAL SPECIFICATION (November 2015 edition)
STANDARD SPECIFICATION DWS 2020:	QUALITY CONTROL SPECIFICATION (October 2001 edition)
STANDARD SPECIFICATION DWS 2510/01:	SUPPLY OF VALVES – GENERAL VALVE SPECIFICATION (January 2007 edition)
STANDARD SPECIFICATION DWS 2510/02:	SUPPLY OF VALVES – AUXILIARY DRIVES (January 2007 edition)
STANDARD SPECIFICATION DWS 2510/03:	SUPPLY OF VALVES – AIR RELEASE AND VACUUM CONTROL VALVES (June 2000 edition)
STANDARD SPECIFICATION DWS 2510/04:	SUPPLY OF VALVES – BUTTERFLY VALVES (January 2007 edition)
STANDARD SPECIFICATION DWS 2510/06:	SUPPLY OF VALVES – GATE VALVES (June 2000 edition)
STANDARD SPECIFICATION DWS 2510/13:	SUPPLY OF VALVES – SLEEVE VALVES (January 2007 edition)
STANDARD SPECIFICATION DWS 9900:	CORROSION PROTECTION SPECIFICATION (October 2002 edition)
STANDARD SPECIFICATION DWS 1601:	GENERAL MECHANICAL SPECIFICATION (November 2015 edition)

This Particular Specification is supported by the following standards of which the latest publication shall apply:

(a) South African Bureau of Standards:

SANS 121:	Hot dip galvanized coatings on fabricated iron and steel articles – Specifications and test methods
SANS 564:	Rubber insertion sheeting
SANS 1123:	Pipe flanges (2011 Edition 3.2)
SANS 1700:	Fasteners

(b) **British Institute:**

BS 5155:	Specification for cast iron and carbon steel butterfly valves for general purposes
BS EN 593:	Industrial Valves—Metallic Butterfly Valves
BS EN 1562:	Founding – Malleable Cast Irons

(c) **Other:**

EN 558:	Industrial Valves - Face-to-Face and Centre-to-Face Dimensions of Metal Valves for Use in Flanged Piping Systems
AWWA M11:	Steel Pipe—a Guide for Design and Installation

CWD 45.2.2 Definitions

Mechanical Sub-contractor:	The Party to whom the Tender, comprising of this Particular Specification, is awarded
Employer:	Chief Directorate Infrastructure Development of the Department of Water and Sanitation
Engineer:	The Engineer as appointed by the Department: Water and Sanitation.
Main Contractor:	The Contractor appointed, who shall be responsible for the raising of the Clanwilliam Dam.
Specification:	This Particular Specification together with any references therein to other documents.
Resident Engineer:	The supervising authority appointed by the Employer.

CWD 45.3 **MATERIALS**

Materials and equipment, where not specified, shall be in accordance with relevant SANS or BS specifications.

Hydraulic cylinders shall be of stainless steel.

Sleeve valves and ball valves shall be manufactured of stainless steel. Sleeve valve hoods shall be of stainless steel 304 L.

All fasteners, including washers, used in the construction of the valves shall be of stainless steel Grade 304 or better.

All fasteners, including washers, for joining of the valves to the pipe work, shall be hot dip galvanised to SANS 121.

Welding electrodes for welding mild steel to stainless steel shall have high nickel/chrome content.

CWD 45.4 **MECHANICAL AND ELECTRICAL DETAILS AND REQUIREMENTS**

CWD 45.4.1 General

The quality of the raw water shall be regarded as highly corrosive.

Tolerances shall be regarded as part of the Mechanical Sub-contractor's design for the equipment supplied under this Contract.

CWD 45.4.2 Flange drilling and dimensions

Flanges shall be designed to have a uniform thickness, adequate in terms of an appropriate design code, to withstand the design working pressure within specified stress levels, and subject to the approval of the Engineer. Flange faces shall be in accordance with TABLE 3 below unless otherwise stated on the Drawings:

TABLE 3
SCHEDULE OF FLANGE TYPES ACCORDING TO SIZE AND PRESSURE RATING

NOMINAL DIAMETER NB (mm)	PRESSURE RATING ≤ 1600 kPa	PRESSURE RATING ≥ 2500 kPa
0 ≤ Ø ≤ 400	Full face gasket (i.e. flat faced flange)	Full face gasket (i.e. flat faced flange)
400 < Ø ≤ 2 500	Full face gasket (i.e. flat faced flange)	Raised face
Ø > 2 500	O-ring	O-ring

Details of the proposed "O" ring groove design shall accommodate corrosion protection requirements and shall be furnished at Tender stage for consideration.

The mounting flanges of the valves shall be drilled equi-spaced, off-centre in accordance with TABLE 4 below.

TABLE 4
SCHEDULE OF FLANGE DIMENSIONS AND DRILLING ACCORDING TO PRESSURE RATING

PRESSURE RATING (kPa)	VALVE SIZE (mm)	FLANGE BODY DIMENSIONS (SANS 1123, Ed. 3.2)	DRILLING TABLE (SANS 1123, Ed. 3.2)
1 000	1 600 & 1800	1 000/1B	1 000/1B
1 000	< 1 600	1 000/3	1 000/3
1 600	ALL	1 600/3	1 600/3
2 500	ALL	2 500/3	2 500/3
4 000	≤ 500	SANS 1123	SANS 1123
4 000	> 500	NWS 1676	NWS 1676

CWD 45.4.2.1 Joints rated below 4 000 kPa

The flange body dimensions (excluding thickness) for sizes smaller than 1 600 mm NB shall be as for steel plate flanges for welding as detailed in SANS 1123 Table 1000/3. The minimum flange rating shall be SANS 1123 Table 1000/3 for all working pressures up to 1 000 kPa. The minimum pressure rating for the drilling of flanges shall be according to SANS 1123 Table 1000/3.

The flange body dimensions (excluding thickness) for size 1 600 mm NB and 1 800 mm NB shall be as for integral iron flanges as detailed in SANS 1123 Table 1 000/1B.

CWD 45.4.2.2 Joints rated 4 000 kPa

- The following shall apply to the flanges for the high-pressure pipes.
- Flanges up to and including 500 mm NB shall be in accordance with SANS 1123.
- Flanges larger than 500 mm NB shall be in accordance with NWS 1676.

CWD 45.4.3 Electrical supply

The power available is 400 V, 3 phase, 50 Hz.

CWD 45.4.4 Bolts and nuts

All bolts and nuts shall be in accordance with DWS 1601: GENERAL MECHANICAL SPECIFICATION and SANS 1700. Bolts, nuts, studs, etc. which are out of the waterway, shall be hot dip galvanised to SANS 121. Bolted joints shall have a washer underneath both the bolt head and nut.

CWD 45.4.5 Rubber gaskets

The gaskets needed for mounting the valve to the pipe work are included in this Tender.

All gaskets shall be rubber insertion gaskets in accordance with SANS 564.

CWD 45.4.6 Valve supports

The Mechanical Sub-contractor shall advise the Department at the time of Tender if any supports are required for any of the valves supplied. If required, all such supports shall be removable and height adjustable (with a minimum of 100 mm to compensate for irregularities in concrete work) and shall be deemed to be included in this Particular Specification.

CWD 45.4.7 Valve transport trolley

The design, manufacture, shop assembly and testing, corrosion protection, and delivery to Site of a valve trolley shall be included of this Tender. The trolley shall be used in the gallery of the dam to transport valves and sump pumps in and out of the gallery. The trolley shall be able to transport, with minimum levels of effort, the sump pumps, bottom outlet 1000 mm NB butterfly valve and 1000 mm NB knife gate valve.

The trolley shall be of mild steel which shall be hot dip galvanised. The trolley shall fit the provision made available, on the sides of the concrete stairs, to traverse the trolley up and down the stairs. See Drawing Reg. No CWD #### to view spacing and wheel base constraints. The trolley shall furthermore have provision on it to pull the device when moving up or down the concrete staircase. The trolley shall have the ability to move around a corner inside the gallery by means of swiveling wheels. The wheels shall have a means to lock the swivels, enabling the operator to move the trolley in a determined direction. See Drawing Reg. No CWD #### and CWD #### for passage dimensions inside the gallery.

Lugs mounted on the walls on both sides of the stair case shall be provided by the Department to assist the operators to maneuver the trolley up and down the stairs in the gallery. See Drawing Reg. No CWD ####

CWD 45.4.8 Valve refurbishment

The Mechanical Subcontractor shall remove the existing bottom outlet 1000 mm NB butterfly valve, inspect the overall condition in the presence of the Engineer and advise on the feasibility of refurbishing and upgrading to electric actuator or replacing the valve with a complete new 1000 mm NB butterfly valve. The Mechanical Subcontractor shall provide tendered amounts in the Bill Of Quantities for both refurbishment and the supply of a new valve (all in accordance with this specification) in order for the Engineer to make an informed decision.

The refurbishment, in accordance with DWS 2510 and DWS 9900, of the following valves shall be included in this Particular Specification CWD 45:

- The bottom outlet 1000 mm NB butterfly valve, including upgrade to electric actuator (If deemed feasible to refurbish).
- The bottom outlet 1000 mm NB knife gate valve.
- The two, bottom outlet, 900 mm NB sleeve valves.
- The one, existing, 300 mm NB sleeve valve

CWD 45.4.9 Operating actuators and control gear

Electrical actuators and control gear shall be removed from the valves prior to dispatch to avoid damage during transport and storage at Site. In order to ensure correct reinstallation of actuators on Site, each actuator shall be linked to its specific valve through the valve's unique identification number.

The Valve Supplier shall be responsible to wrap and pack each actuator in accordance with the requirements of the Original Equipment Manufacturer and shall give clear, written instructions to the Main Contractor with regard to the requirements for storage at Site to avoid cancellation of the Actuator Warrantee. Covers and cable entrances shall be protected in accordance with the requirements for the specified environmental protection IP-rating. Only the Valve Supplier (or the Actuator Supplier as his Mechanical Sub-contractor) shall be allowed to unpack and install actuators on Site. Only the Actuator Supplier shall make the final electrical connection and shall also do final settings on all valve actuators.

CWD 45.4.10 Technical schedules

Tenderers shall fully complete the Technical Schedules included in this Tender Document for all the valves offered. Failure to do so may result in the Tender being disregarded. In cases where no Technical Schedule is provided in this Tender Document, Tenderers shall submit comprehensive technical information to enable the Engineer to make a proper assessment of the equipment offered.

CWD 45.4.11 Operation and Maintenance Manuals

In addition to the requirements in the document DWS 2510/01: SUPPLY OF VALVES – GENERAL VALVE SPECIFICATION, the Mechanical Sub-contractor shall also provide one complete electronic copy of the Operation & Maintenance Manual on compact disk.

The Operation and Maintenance Manuals shall include A3 size drawings of the hydraulic power pack supplied by the Contractor, indicating all hydraulic design specifications.

CWD 45.5 **DESIGN AND MANUFACTURE OF VALVES**

CWD 45.5.1 Air Valves

Air valves shall be supplied and installed as indicated in TABLE 2 and all the relevant drawings.

CWD 45.5.2 Ball (Spherical) Valves

Ball valves shall be supplied and installed as indicated in TABLE 2 and all the relevant drawings. They are used for isolation, drain and scour of small bore pipes.

The 25 mm NB ball valves shall be installed onto the wash water- and pressurized air pipes in the drainage gallery in the dam wall, as shown on Drawing Reg. No CWD ####. These ball valves shall be female threaded and installed at approximately 27 m intervals for connection of high-pressure hoses for cleaning purposes.

The 80 mm NB ball valves shall be double flanged in accordance with CWD 45.4.2 and installed onto the wash water pipes in the drainage gallery in the dam wall, as shown on Drawing Reg. No CWD ####. These valves will be used for wash water isolation.

CWD 45.5.3 Butterfly Valves

Butterfly valves shall be supplied and installed as indicated in TABLE 2 and all the relevant drawings.

CWD 45.5.3.1 Installation Layout

The seven 1 800 mm NB butterfly valves installed in the outlet works inlet tower, as shown on the Drawing Reg. No. CWD 7056 – CWD 7059 will serve as draw-off level selector valves. The six 1 800 mm NB butterfly valves installed in the two left bank crossover chambers (three butterfly valves in each chamber) , as shown on Drawing Reg. No. CWD 7063 – CWD 7066 will be used to isolate any of the pipe outlets to the left bank flow meter chamber, river outlet chamber or isolating valve chamber as well as to provide for a cross over between the two 1 800 mm NB pipes in each left bank crossover chamber.

The current 1000 mm NB bottom outlet butterfly valve, after it has been refurbished, will be used to isolate the 900 mm NB sleeve valve situated at the new extension of river outlet.

The two 1 800 mm NB butterfly valves installed in the isolating valve chamber to the hydro power plant, as shown on Drawing Reg. No. CWD 7067 – CWD 7068 will be used to isolate any of the two pipe outlets to the hydro power plant. The two 1 000 mm NB butterfly valves installed in the isolating valve chamber, as shown on Drawing Reg. No. CWD 7072 will be used to isolate any of the two pipe outlets to the right bank crossover chamber.

The two 1 000 mm NB and two 1 800 mm NB butterfly valves in the river outlet chamber, as shown on Drawing Reg. No. CWD 7069 – CWD7071, will serve as isolating valves to the sleeve valves. The five 1 000 mm NB butterfly valves installed in the right bank crossover chamber, as shown on Drawing Reg. CWD ####, will be used to isolate any of the two outlet pipes to the right bank flow meter chamber as well as to provide for a cross over between the two 1 000 mm NB pipes in the right bank cross over chamber. The 600 mm NB and 1 000 mm NB butterfly valves installed in the right bank discharge chamber, as shown on Drawing Reg. No. CWD ####, will serve as isolating valves to the sleeve valves.

CWD 45.5.3.2 Valve Requirements

(a) Duty

The butterfly valves will be operated either in the fully open or fully closed position. They may however be required to open and close under unbalanced conditions during emergency conditions as outlined below.

The butterfly valves are required to work under a maximum static head of 45 meters. Each 1 800 mm NB butterfly valve shall be capable of passing a minimum of 15 m^3/second at a minimum static head of 3 m.

The valves shall be designed for a pressure of 1 000 kPa and be capable of opening and closing under these conditions.

Under normal operating conditions, the maximum flow rate will result in a mean velocity not exceeding 5 m/s. The head loss at this flow rate shall be given in the Technical Schedule. Under emergency conditions however, the valves shall be subjected to a maximum flow velocity of 10 m/s (see figure

below). The complete valve with actuator shall be designed to withstand and operate under these conditions for a limited period, which shall be stated in the Technical Schedule.

(b) Valve design

Butterfly valves shall be double flanged and the design shall be in accordance with DWS 2510: SUPPLY OF VALVES. Flange face-to-face dimensions shall be strictly in accordance with EN 558 for Class 125 / Class 150 valves (Table 4, Basic series 13).

The resilient seal as described in DWS 2510/04: SUPPLY OF VALVES – BUTTERFLY VALVES shall be mounted on the valve blade. The Mechanical Sub-contractor shall ensure that the design of the valve eliminates cavitation.

The 309L or 316L deposit weld specified in DWS 2510/04: SUPPLY OF VALVES – BUTTERFLY VALVES for the seal retaining groove shall apply to all seal types. This deposit welding shall extend onto the circumference of the valve blade, away from the bottom of the cut-out for deposit welding, by a distance of 10 mm for valves up to and including 1000 mm NB and by a distance of 20 mm for valves larger than 1000 mm NB. Similarly, the mounting flange of the removable seat in the valve body shall also be deposit welded by using stainless steel 309L or 316L. The minimum thickness of all deposit welded sections shall be 1 mm of pure, uncontaminated stainless steel deposit weld material after final machining. These deposit welding procedures shall be performed by a welder coded for hard facing (wear resistant) and corrosion resistant overlays.

The valve seat shall be located on the valve body. The stainless steel seat shall be removable, but positively held to the mounting flange in the body bore with stainless steel screws. Pressed-in, bonded-in or weld deposited seats shall not be acceptable.

The stub axles shall have thrust support bearings that shall keep the valve blade concentrically in the valve body.

All valves shall be tested for tight shut-off to a pressure of 600 kPa. Valves on cross-over connections shall be tested at this pressure from both sides.

(c) Mounting

The valves will be mounted onto stainless steel 304 L pipe work with mild steel flanges for which the necessary hot dip galvanized bolts, studs, nuts, washers, packing, fibre insulating sleeves, etc. shall be supplied by the Tenderer.

The Tenderer shall in indicate in his offer if any of his valves require to be supported on the floor below such valve. If required, all such supports shall be deemed to be included in this Particular Specification. All the 1 000 mm and 1 800 mm NB butterfly valves shall however be supplied complete with supports. These supports shall be easily removable from the cast concrete plinths as shown on Drawing Reg. No CWD 7003. Valve supports shall not interfere with the installation and tightening of flange bolts. Details of all valve support installations shall be provided with the tenderer.

CWD 45.5.3.3 Operating Actuator

Each valve shall be operated by means of an electric actuator with a manual override facility. The manual override shall operate by means of a hand wheel integral with the electric actuator. The orientation of the hand wheels and gearboxes shall be in accordance with TABLE 2 and the Drawings.

The operating actuator shall also make provision for future telemetry control (4 to 20 mA signal basis). It shall therefore contain a three-pole “Local/Remote” switch. All limit switches shall also be telemetry compatible.

Full details of the actuator shall be supplied with the valves and facilities for inspection and testing shall be given by the Mechanical Sub-contractor to the Departmental Inspector to verify that the equipment conforms to this Particular Specification.

All actuators and gearboxes shall fully comply with the corrosion protection specification as for the valves.

The actuators shall not be mounted on the valves during transport to Site. After installation, the Actuator Supplier shall be required to install the actuators and readjust the limit settings. This service by the Actuator Supplier shall be regarded as part of the Mechanical Sub-contractor’s original Tender Offer.

CWD 45.5.3.4 Operating actuator (1 000 mm NB bottom outlet butterfly valve)

The current bottom outlet 1 000 NB butterfly valve currently has a manually operated actuator. The 1 000 mm NB butterfly valve refurbishment shall include a new, electrically operated actuator. The new actuator will replace the existing, manually operated actuator

CWD 45.5.3.5 Valve Design Integrity

The Tenderer shall submit comprehensive, detailed and accurate calculations at the Tender stage for the requirements below. Failure to submit such calculations with the Tender Offer may lead to the Tender being disqualified.

1. The dynamic torque generated during unbalanced conditions at the design head of 1 000 kPa and a flow velocity of 10 m/s.

2. The unseating and bearing friction torque under unbalanced conditions at the design head of 1 000 kPa and a flow velocity of 10 m/s.

3. The maximum combined stresses in the blade when conforming to Clause 2.2 of DWS 2510/04: SUPPLY OF VALVES – BUTTERFLY VALVES.

4. The maximum stress in keys, dowel pins or taper pins when conforming to Clause 2.6 of DWS 2510/04: SUPPLY OF VALVES – BUTTERFLY VALVES.

5. The maximum shaft stress generated whilst unseating a closed valve as well as the maximum shaft stress generated by the dynamic torque under the design head and velocity of 10 m/s.

6. Valve cavitation characteristics for the flow conditions as specified.

CWD 45.5.4 Non-Return Valves

Waver type check valves shall be supplied and installed as indicated in TABLE 2 and all the relevant mechanical drawings.

The purpose of the check valves at the upstream end of the stainless steel drainage pipe shall be to prevent high tail water from entering the chambers from the downstream side of the dam.

The purpose of the check valve at the upstream end of the gallery sump drainage pipe shall be to prevent high tail water from entering the sump from the downstream side of the dam and to allow water to freely drain from the sump, avoiding unnecessary strain on the sump pump.

This unit shall be of lightweight construction without a return spring and shall open under a minimum head of 100 mm to allow water to freely drain from the valve chambers and sump. The valve shall be equally suited to positively close off water from the downstream side under a very low head in order to prevent water from seeping into the valve chamber and sump and thereby balancing the reflux valve. To assist this operation, the reflux valve will be mounted at an angle of 5 degrees as shown on Drawing Reg. No CWD ####.

The material of the check valve shall be of one of the following; HDPE, PVC, Polypropylene or equal. The Mechanical Sub-contractor shall supply the valves with all necessary installation components, including but not limited to all bolts, nuts and gaskets. The loose flange required to install the check valves shall be of stainless steel and sized to fit the fixed mounting flange shown on Drawing Reg. No. CWD ####.

CWD 45.5.5 Resilient Seal Valves (RSV)

Resilient seal valves are used as isolating- and drain valves. They shall be supplied and installed in accordance with DWS 2510: SUPPLY OF VALVES (January 2007 Edition). RSV valves shall be capable to open and close under a maximum static head of 45m through manual operation.

CWD 45.5.6 Sleeve Valves

Sleeve valves shall be supplied and installed as indicated in TABLE 2 and all the relevant Drawings.

CWD 45.5.6.1 Installation Layout

The two 600 mm NB and two 1000 mm NB sleeve valves shall be installed at the downstream end of the valve control room on the left bank as shown on Drawing Reg. No. CWD 7069 - CWD 7071, The hydraulic operating equipment, remote valve position indicator and flow discharge charts shall be installed inside the valve control room at RL 93,400 masl as shown on Drawing Reg No…….

The 600 mm NB sleeve valve shall be installed at the downstream end of the discharge chamber on the right bank as shown on Drawing Reg. No…… for discharging water into the irrigation canal.

The existing two 900 mm NB sleeve valves shall be temporarily used on the extended bottom outlets during construction and shall be refurbished in accordance with DWS 9900 once they are not required on Site during construction any more. One of these refurbished 900 mm NB sleeve valves shall be reinstalled on the extended bottom outlet after construction as shown on Civil Design Drawing Reg. No. 169008/16 – 169009/16

The refurbished 900 mm NB sleeve valve in the retained bottom river outlet shall be operated by the same hydraulic power pack as the 600 mm NB and 1 000 mm NB sleeve valves installed in the valve control room at RL 93,400 masl.

The existing refurbished hydraulic operating equipment, remote valve position indicator and flow discharge chart for the 600 mm NB sleeve valve shall be installed inside the right bank discharge chamber at RL 81,900 masl as shown on Drawing Reg No…….

CWD 45.5.6.2 Valve requirements

All of the sleeve valves will normally operate under free discharge conditions. Should it be necessary to limit the opening of the valve, Tenderers shall state such limitations in the Technical Schedule.

(a) Duty

(i) 1 000 kPa rated sleeve valves

The 1 000 kPa rated sleeve valves are required to work under a maximum static head of 45 metres. The 1 000 mm NB sleeve valve shall be able to discharge a minimum of 6,0 m^3/second at a minimum static head of 3 m and the 600 mm NB sleeve valve a minimum of 2,1 m^3/second at a minimum static head of 3 m. The sleeve valve characteristics shall not impede negatively on the system discharge requirements.

The time allowed to close any one of the sleeve valves shall typically be 60 seconds for the 1000 NB sleeve valves and 30 seconds for the 600 NB sleeve valves, in order to avoid pressure surges in the vertical pipe stack.

(b) Valve design

A sleeve valve design with the back seal mounted on the barrel of the valve shall incorporate bearing strips welded onto the barrel portion upstream of the rear seal to serve as guides for the sleeve while opening.

Sleeve valve seals shall be of a material which is suitable for periods of stationary valve position of up to 60 days without sticking to the valve sliding element.

The design shall be of a standard type which has been proven in use and Tenderers shall state in the Schedule of Similar Work Undertaken on which dams their valves, of similar type and size, have been used with success.

Also see Clause CWD 45.5.6.7 for the hoods required.

(c) Mounting

The valves will be mounted onto stainless steel 304 L reducers with a mild steel flange for which the necessary hot dip galvanized bolts, studs, nuts, washers, packing, fiber insulating sleeves, etc. shall be supplied by the Tenderer.

CWD 45.5.6.3 Operating actuator (600 mm NB, 900 mm NB and 1000 mm NB sleeve valves)

These valves shall be hydraulically operated by means of two electro-hydraulic power packs. The power pack for the 600 mm NB and 1000 mm NB sleeve valves shall be mounted on the floor inside the control room at RL 93,400 masl as shown on Drawing Reg No CWD ####. The power pack for the 900 mm NB sleeve valve shall be mounted on the floor inside the existing gallery chamber at RL 84,430 masl, (see Drawing Reg. no. 161054/10 ME). The valve supplier shall advise on the efficiency and functionality of the power pack to operate the 900 mm NB bottom outlet sleeve valve with the new extended layout.

The hydraulic power packs and operating consoles shall also make provision for future telemetry control (4 to 20 mA signal basis). It shall therefore contain a three-pole “Local/Remote” switch. Dual contactors, each with four sets of contacts, shall be supplied for each of the “Open” and “Close” push buttons. All limit switches shall also be telemetry compatible. A terminal strip with potential free contacts for remote indication and control of the following functions shall be provided:

- All indicating signals provided on the operating console
- Remote selected
- Valve opening
- Valve closing
- Pump running
- Pump trip
- High pressure
- High hydraulic fluid temperature
- High motor temperature
- A 4-20 mA position indication signal

The console of each hydraulic power pack shall include push buttons to control “Open” (green), Close” (red) action, three hydraulic pressure gauges (each indicating “Pump Pressure”, “Line Pressure Out” and Line Pressure In”), warning lights (red) for clogged filter, low oil level, three phase and low voltage power supply available, solenoid manually detented and valve jammed. Different coloured indicator lights shall indicate “Open” (green), “Intermediate” (yellow) and “Closed” (red) positions of the valve. A flashing warning light with reset facility shall indicate possible jamming of the valve motion by foreign objects. All indicator lights shall be of the 230 V LED multi-cluster type and shall be clearly visible in bright daylight. Indicator lights shall be mounted next to the relevant switches. Multi-position switches shall have name plates clearly indicating the function of each position.

The hydraulic gear pump shall be mounted from the top, inside of the hydraulic fluid reservoir.

Provision shall be made for manual override in the case of a power failure. Solenoid valve shall be detentable for one-man operation in the manual override condition. In the manual override condition, a warning light on the operating console shall indicate that a solenoid has been manually overridden and the “Pump Start” function shall be disabled. The double action hand pump lever shall be positioned vertically for a horizontal stroke. Under no circumstances shall the force necessary for manual operation of the valve exceed 90 N. An appropriate storage facility shall be provided for the removable hand pump lever.

Each hydraulic power pack shall be capable of opening and closing the valves (both in electrical and manual operation) under a differential pressure of 45 m across the valve.

An electrical isolating switch shall be provided on the outside of the console. A warning sign prohibiting unauthorized persons to work on the power pack shall be provided and clearly displayed on the console. The operating voltage of the control equipment inside the operating console shall not be higher than 50 V. All electrical connections inside the cabinet shall be protected to SANS 60529, IP 65. Approved junction boxes shall be used inside the cabinet where required. The control console and hydraulic power pack shall be generally laid out as shown on Drawing Reg. No. 161054/10ME and 161055/10 ME.

No part of the electrical installation shall be able to be contaminated by hydraulic oil.

The oil reservoir shall contain a glass tube-type fluid level indicator (visible from the outside of the cabinet) with integral thermometer. This unit shall indicate the minimum and maximum fluid levels with all the hydraulic cylinders at either their fully contracted or fully extended positions. Minimum and maximum oil levels shall be indicated with appropriate engraved name plates.

All piping, connection pieces, brackets and fasteners, unless otherwise specified in this Particular Specification, shall be of stainless steel 304 or better and form part of this Tender. All pipe connections to and from valves shall be identified with engraved name plates.

All name- and indicator plates shall be mounted with stainless steel or nickel-plated brass hammer drive screws or stainless steel screws with nuts and washers.

The drip tray underneath the power pack console shall be removable. Metal pockets shall be provided on the inside of the applicable cabinet doors to store laminated hydraulic- and electric wiring diagrams of minimum A-3 size.

Details of the design of the hydraulic power pack and control console shall be supplied with the Tender. No manufacture of the power pack or control shall take place without approval by the Engineer of manufacturing and layout drawings.

Provision shall be made for shut-off ball valves in close proximity of each sleeve valve in order to isolate hydraulic oil during sleeve valve maintenance.

Hydraulic pipes routed through conduits that are imbedded into the concrete shall be of approved hydraulic rubber hose. Pipes mounted in open areas shall be of stainless steel 304 or better and mounted to the wall with approved stainless steel saddles.

CWD 45.5.6.4 Operating actuator (400 mm NB sleeve valve)

The newly supplied 400 mm NB sleeve valve shall replace the existing 300 mm NB canal outlet sleeve valve.

This 400 mm NB sleeve valve shall be operated by the existing hydraulic power pack currently operating the 900 mm NB and 300 mm NB sleeve valves.

The Mechanical Sub-contractor shall carry out a full service of the existing hydraulic power pack, including the replacement of filters and oil, flushing of oil tank and pipes as well as ensuring that all components are functional. Any modifications to the hydraulic power pack required to operate the new 400 mm NB sleeve valve shall be done in consultation with the original manufacturer. The refurbished hydraulic power pack shall be transported from and to the Site and reinstalled, by the Mechanical Sub-contractor, inside the right bank discharge chamber after construction to operate the new 400 mm NB sleeve valve in the discharge chamber.

The refurbished hydraulic power pack, including any modifications, shall carry the same guarantee as any other new equipment supplied under this Contract.

CWD 45.5.6.5 Refurbishment of existing equipment

The existing hydraulic power pack, the existing two 900 mm NB sleeve valves and the existing 300 mm NB sleeve valve shall be refurbished in accordance with DWS 2510 and DWS 9900 once it is not required on Site during construction any more. The services of the sleeve valve supplier under this particular specification shall be utilised for all such refurbishment work.

Upon completion of refurbished, one 900 mm NB sleeve valve shall be installed at the downstream end of the extended bottom river outlet as indicated on Drg. Reg. No…..

The second refurbished 900 mm NB sleeve valve and the refurbished 300 mm NB sleeve valve shall be delivered to and stored by the Departmental Office in Worcester.

Provision shall be made for shut-off ball valves in close proximity of each sleeve valve in order to isolate hydraulic oil during sleeve valve maintenance.

CWD 45.5.6.6 Remote valve position indicator

A valve position indicator with indicator “percentage open” scale, mounted in the hydraulic power pack console, shall be provided for each sleeve valve. All components of the valve position indicator system shall be mounted inside the hydraulic power pack console and no position indicating sensors shall be allowed at the valves themselves. The position indicator shall have a facility for extending it to future telemetry control. The use of electronic equipment for the local position indicator shall be minimised. In the event where electronic equipment is deemed necessary, such units shall be equipped with lightning and surge protection in accordance with CWD53 – Earthing Systems on both the main power supply to the unit and the signal cable to transducer. Full details shall however be supplied with the Tender and no work shall be done without prior approval by the Engineer.

If a hydraulic cylinder is used for position indication, this shall at all times give a true indication of the actual valve position and shall not be affected by temperature changes in the environment. Further to this, the indicating cylinder shall reset automatically at the end of each fully closing stroke in order to give a true “Closed” reading.

CWD 45.5.6.7 Hoods

All sleeve valves shall be supplied with hoods as described below.

The hoods for the 1000 mm NB and 600 mm NB sleeve valves shall be built into the downstream concrete wall of the valve control room, on the valve centerlines. The Mechanical Sub-contractor shall supply all the necessary primary built-in parts (if any), anchorage and stainless steel 304 fasteners and shall be responsible to fully install and adjust the hoods. The Main Contractor shall be responsible to finally cast the hoods into the concrete wall after having confirmed proper alignment in the presence of the Mechanical Sub-contractor.

Hoods shall be manufactured from stainless steel 304L. The refurbished 900 mm NB sleeve valve installed on the extended bottom outlet shall have no hood. The 400 mm NB sleeve valve installed at the downstream end of the discharge chamber shall have no hood.

The Tenderer shall submit sufficient details of the hood design concept and mounting details with the offer for consideration by the Engineer. The hood design shall restrict the backwash to a minimum. A hood having a conical shape may be required to facilitate the above requirement.

The positioning of the sleeve valves with regard to their respective hoods (including the length and relative diameter of the hood compared to the valve) shown on the drawings shall be re-assessed by the valve Supplier. This shall be confirmed by model testing in the absence of hydraulically identical case study material to minimize the risk of excessive back-flow at various valve openings. The method by which the valve Supplier arrives at the dimensions showing the relative position of the hood to the sleeve valve (and the size and length of the hood) shall be submitted for approval by the Engineer as part of the pre-manufacturing documentation.

Provision shall be made for a removable segment, if necessary, to facilitate ease of sleeve valve removal and maintenance.

CWD 45.5.6.8 Flow Discharge Chart

A flow discharge chart shall be provided for each of the sleeve valves supplied under this Particular Specification as well as for the existing 900 mm NB sleeve valve to be retained as a low level bottom outlet.

The flow discharge curves provided shall give a true reflection of the actual amount of water being discharged (indicated in m^3/second) from any particular sleeve valve, taking into account the complete outlet pipe system.

CWD 45.5.7 Wedge Gate Valves

Wedge gate valves are not required at the time of Tender. Should wedge gate valves be required at a later stage, these shall be supplied and installed in accordance with STANDARD SPECIFICATION DWS 2510: SUPPLY OF VALVES (January 2007 Edition).

CWD 45.6 **CORROSION PROTECTION**

Corrosion protection of equipment supplied under this Particular Specification shall conform to DWS 9900 – CORROSION PROTECTION. Colour coding shall be in accordance with Annexure C3. Technical details of all corrosion protection products shall be submitted to the Engineer for approval before application. The Technical Schedule for Corrosion Protection shall be fully completed by the Tenderer and submitted with the Tender Documents (see section CWD 45.4.10)

CWD 45.6.1 Toxicity of Lining Material

Materials used for the lining of valves and pipes shall be non-toxic and shall not impart any odour, taste, or colour to the water. Certification shall be submitted to the Corrosion Engineer for his approval.

CWD 45.6.1.1 Proprietary Items

Components that are supplied painted or protected e.g. gearboxes, actuators etc. **shall only be accepted** provided that they meet the corrosion protection requirements of this Particular Specification. If this specification cannot be adhered to, the Mechanical Sub-contractor **shall submit full details of the equivalent paint systems** at tendering stage for approval by the Corrosion Engineer.

CWD 45.6.2 Abbreviations used in Corrosion Protection Schedules

ABS	:	Acrylnitrile-butadiene-styrene
Al	:	Aluminium
CI	:	Cast iron - grade 220
CS	:	Cast steel
DCA	:	Die cast aluminium
DFT	:	Dry film thickness
FBE	:	Fusion-bonded Epoxy
FBP	:	Fusion-bonded Polyester
FBPE	:	Fusion-bonded Polyethylene
GRP	:	Glass fibre reinforced Polyester
HDG	:	Hot-dip galvanized
HDPE	:	High Density Polyethylene
LHS	:	Left hand side
MS	:	Mild steel (grade 300WA) or any carbon steel
PC	:	Polycarbonate
PVC	:	Polyvinylchloride
RHS	:	Right hand side

SG	:	Spheroidal graphite cast iron – grade 420
SS	:	Stainless steel – grades 304, 304L, 316 and 316L
UV	:	Ultra Violet
3CR12	:	Corrosion resistant steel
µm	:	Micrometre

CWD 45.6.3 Coating Systems

(a) Valves (including hand wheels) and Flow Meters

ENVIRONMENT	MATERIAL	SURFACE	SYSTEM	MINIMUM DFT (µm)
	MS SG	Lining	1. Two pack Epoxy	400
			2. FBE	250
	SS 316	Lining	1. Two pack Epoxy	150
			2. FBE	125
			3. Pickle & passivate - See note 4 of Clause CWD 45.6.3(j)	
Dry	MS SG	Coating	1. Two pack Epoxy plus top coat of Re-coatable Polyurethane	250 40
			2. FBE plus top coat of Re-coatable Polyurethane	200 40
Wet	MS SG	Coating	1. Two pack Epoxy plus top coat of Aliphatic Polyurethane – where specified	400 25
			2. FBE plus top coat of Aliphatic Polyurethane	250 25
	SS 316	Coating	1. Two pack Epoxy plus top coat of Aliphatic Polyurethane – where specified	150 25
			2. FBE plus top coat of Aliphatic Polyurethane – where specified	125 25
			3. Pickle & passivate - See note 4 of Clause CWD 45.6.3(j)	

(b) Hoods

ENVIRONMENT	MATERIAL	SURFACE	SYSTEM	MINIMUM DFT (µm)
Wet	SS 304	Coating	1. Pickle & passivate - See note 4 of Clause CWD 45.6.3(j)	

(c) Gearboxes

ENVIRONMENT	MATERIAL	SURFACE	SYSTEM	MINIMUM DFT (µm)
Dry/Wet	CI SG	Lining	1. Two pack Epoxy	150
			2. FBE	125
		Coating	As per the valve specification	

(d) Hydraulic Cylinders

ENVIRONMENT	MATERIAL	SURFACE	SYSTEM	MINIMUM DFT (µm)
Dry/Wet	MS SS 304 SS 316	Coating	As per the valve specification	

(e) Power Packs

ENVIRONMENT	MATERIAL	SURFACE	SYSTEM	MINIMUM DFT (µm)
Dry	MS	Lining	1. Two pack Epoxy	200
			2. FBE	125
		Coating	1. Two pack Epoxy plus top coat of pure Aliphatic Polyurethane	250 40
			2. FBE plus top coat of Re-coatable Polyurethane	200 40
Wet	MS	Coating	1. Two pack Epoxy plus top coat of pure Aliphatic Polyurethane	400 25
			2. FBE plus top coat of pure Aliphatic Polyurethane	250 25
	3CR12	Lining	1. Two pack Epoxy	150
			2. FBE	125
		Coating	1. Two pack Epoxy plus top coat of pure Aliphatic Polyurethane	250 25
			2. FBE plus top coat of pure Aliphatic Polyurethane	125 25
	SS 304	Coating	Pickle and passivate - See note 4 of Clause CWD 45.6.3(j)	

(f) Actuators

ENVIRONMENT	MATERIAL	SURFACE	SYSTEM	MINIMUM DFT (µm)
Dry/Wet	SG CI	Coating	1. Two pack Epoxy plus top coat of Re-coatable Polyurethane – where specified	250 40
			2. FBE plus top coat of Re-coatable Polyurethane – where specified	200 40
	DCA	Coating	1. Two pack Epoxy plus top coat of Re-coatable Polyurethane – where specified	200 40
			2. FBE plus top coat of Re-coatable Polyurethane – where specified	150 40
	SG/CI gearbox	Lining	1. Two pack Epoxy	125
			2. FBE	100

(g) Electrical Panels and Enclosures

ENVIRONMENT	MATERIAL	SYSTEM	MINIMUM DFT (µm)
Indoor – Dry	MS	1. Multi-purpose Epoxy plus Re-coatable Polyurethane if required	250 40
		2. Two pack Epoxy plus Re-coatable Polyurethane	250 40
		3. FBE	125
	PC ABS DCA	Un-coated	
	GRP	Polyester gelcoat	250
	3CR12	1. Multi-purpose Epoxy plus Re-coatable Polyurethane if required	125 40
		2. Two pack Epoxy plus Re-coatable Polyurethane	125 40
		3. FBE	100
Indoor – Wet	3CR12 or SS 304	1. Two pack Epoxy plus Re-coatable Polyurethane	250 40
		2. FBE	125
	DCA	FBE	75
	PC ABS	Un-coated	
	GRP	Polyester gelcoat	250
Outdoor	3CR12 or SS 304	1. FBP	150
		2. Multi-purpose Epoxy plus Re-coatable Polyurethane if required	250 40

(h) Fasteners and Anchors

Fasteners

ENVIRONMENT	MATERIAL	SYSTEM	MINIMUM DFT (µm)
Fasteners and washers - Dry	MS	HDG plus threads coated with Molybdenum Disulphide lubricant or wax	45
	SS 304	Threads coated with Molybdenum Disulphide lubricant or Nickel Anti-seize compound	Uniform cover
Fasteners and washers - Wet/Submerged	SS 316	1. Pickle and passivate - See note 4 of Clause CWD 45.6.3(j) plus threads coated with Molybdenum Disulphide lubricant or Nickel Anti-seize compound	Uniform cover
		2. FBE coated (thread surfaces excluded) plus threads coated with Molybdenum Disulphide lubricant or Nickel Anti-seize compound.	50
Fasteners for flanges	MS	HDG plus complete fastener system coated with an approved spray type lubricant. Bolt heads and nuts to be covered with plastic bolt caps.	45
Fasteners and washers –Buried in soil	MS	HDG plus threads coated with Molybdenum Disulphide lubricant and wax plus Bitumen or Tape wrapping, covered with sealed plastic sheeting.	45
	SS 304	Threads coated with Molybdenum Disulphide lubricant or Nickel Anti-seize compound plus Bitumen or Tape wrapping, covered with sealed plastic sheeting.	Uniform cover
Fasteners for flange adaptors – Drilled and tapped	MS	HDG plus wet assembly with Epoxy or threads coated with Molybdenum Disulphide lubricant	45
	SS 304	Pickle and passivate - See note 4 of Clause CWD 45.6.3(j) plus wet assembly with Epoxy	Uniform cover
Fasteners for flange adaptors – Welded	SS 304	Pickle and passivate - See note 4 of Clause CWD 45.6.3(j)	

Anchors

ENVIRONMENT	MATERIAL	SYSTEM	MINIMUM DFT (µm)
Anchors in concrete -Dry See Paragraph 4.5.2 of DWS 9900.	SS 316	Threads coated with Molybdenum Disulphide Lubricant or Nickel Anti-seize compound	*Uniform cover*
Anchors in concrete – Wet See Paragraph 4.5.2 of DWS 9900.	SS 316	Threads coated with Molybdenum Disulphide Lubricant or Nickel Anti-seize compound plus nut and washer FBE coated	*Uniform cover* *50*

(i) Stainless Steel Items

SURFACES	COATING	MINIMUM DFT (µm)
Stainless steel components (Dissimilar materials in submerged conditions)	Two pack Epoxy or FBE to a smooth, glossy and uniform finish	125
3CR12 steel components (All submerged conditions)	Two pack Epoxy or FBE	400 250
Stainless steel components (Dry or compatible metal conditions)	Pickle and passivate – See note 4 of Clause CWD 45.6.3(j)	
3CR12 steel components (Dry conditions only)	Pickle and passivate – See note 4 of Clause CWD 45.6.3(j)	

(j) Notes

The following items shall be approved by the Corrosion Engineer

1.	Hot-dip galvanizing	-	Only for pipes up to 200 mm diameter maximum and flow velocity less than 2 m/s. - Pipes shall not be embedded in concrete. - Water analysis shall be provided. - Pipes over 200 mm diameter to be coated with a duplex system
2.	Sealant	-	Interfaces of different environments shall be sealed with a Polyurethane or Polysulphide flexible sealant to be applied in accordance with the manufacturer's data sheets.
3.	Un-coated stainless steel	-	Only to be used if no galvanic reaction and anaerobic conditions are found.
4.	Pickle and passivate	-	If not in contact with less noble material. - If exposed to anaerobic conditions seal-coat all crevices with solvent free Epoxy. - Shall be done by the dipping process.
5.	Galvanic cells	-	Where a galvanic cell is situated within a water path <150 mm and concrete cover <75 mm, both the MS, 3Cr12 or SS shall be coated.
6.	Anaerobic conditions	-	SS grade 316L shall be used under anaerobic and aggressive water conditions.
7.	Polyurethane for coding	-	Re-coatable or pure Aliphatic Polyurethane where required colour for colour coding. Only UV resistant Polyurethane shall be used.
8.	Primers	-	Primers shall only be used in special cases i.e. over-coating of galvanized surfaces.
9.	3CR12	-	In view of superior corrosion resistance, coated 3CR12 material is preferred
10.	Mild steel	-	Mild steel may only be used where the pipe lining can be refurbished in situ
11.	Items subjected to high temperatures	-	Items to be manufactured out of stainless steel or coated with heat resistant paint.
12.	Epoxy primer	-	Epoxy primer may not be required if appropriate two pack Epoxy/ Re-coatable or pure Aliphatic Polyurethane is being used.

CWD 45.7 **HANDLING AND TRANSPORT**

The Mechanical Sub-contractor shall provide all the necessary balks of timber and sawdust bags used to support the components on soil, concrete or other hard surface and to separate them from each other, both at his Works and on Site.

Butterfly valve actuators shall be removed after final testing of the valve and prior to transport to Site prevent it from being damaged in transit.

All damage that occurs during handling, assembly, storage prior to delivery and transport, shall be repaired to the requirements of this Particular Specification and shall be for the Mechanical Sub-contractor's account.

CWD 45.8 **INSTALLATION AND COMMISIONING**

CWD 45.8.1 Valve Distance Pieces

In the event of valves not being on Site at the time when required for installation of adjacent pipe work, the Supplier of such valves shall upon request by the Engineer, supply and deliver to Site a distance piece that shall accurately resemble the flange to flange dimension (including gaskets that will be supplied with the valve) and flange drilling of such valve. The distance piece shall have at least one quarter of the total number of flange bolt holes (with a minimum of four holes) of the specific valve. These holes shall be equally spaced around the circumference of the distance piece flange. Distance pieces shall be of sturdy construction in order to allow the pipe installer to install the pipes in an accurate manner and to allow for the easy installation of the specific valve upon removal of the distance piece.

Distance pieces for sleeve valves shall also make provision for centralizing the hood of each specific sleeve valve with its particular pipe mounting flange. This is to eliminate the requirement of installing a sleeve valve already during the construction stage purely for pipe – and hood alignment purposes.

CWD 45.8.2 Butterfly Valves

Butterfly valves shall be installed by the Main Contractor after the pipe work has been installed. Pipe works are being manufactured with make-up sections to ensure alignment during pipe installation without the need to use the actual valves. These make-up pieces will be removed, by the Main Contractor, prior to the installation of butterfly valves.

The butterfly valve Supplier shall be responsible, upon request by the Main Contractor, to reinstall and fully adjust the actuators to factory and tight shut off specifications. During these operations, the valve Supplier shall provide, if required, the temporary power supply to the valves. It is important to note that these operations might not all take place at the same time. All reinstallation and adjustment procedures on Site shall however be deemed as part of the original Tender Offer.

Permanent power supply shall be installed by the Electrical Subcontractor. For this purpose, an appropriate length of the required electrical power supply cable shall be permanently connected to the valve actuator, for connection to the permanent supply by the Electrical Subcontractor.

CWD 45.8.3 Sleeve Valves

The existing two 900 mm NB sleeve valves shall be installed at the ends of the two temporary extended bottom outlet pipes during construction, complete with the existing hydraulic operating system. When these 900 mm NB sleeve valves are no longer required during construction on Site any more, they shall both be refurbished in accordance with DWS 2510 and DWS 9900 and one shall be reinstalled on the extended bottom outlet after construction (also see Clause CWD 45.4.8). The services of the sleeve valve supplier under this Particular Specification shall be utilized for all such refurbishment and permanent sleeve valve installation operations.

The existing hydraulic power pack shall be used during construction to operate the two 900 mm NB sleeve valves at the ends of the extended bottom outlet pipes. When these valves are no longer required during construction on Site any more, the existing power pack shall be refurbished. The Mechanical Sub-contractor shall carry out a full service of the existing hydraulic power pack (also see Clause CWD 45.5.6.5). The refurbished hydraulic power pack shall be transported and reinstalled, by the Mechanical Sub-contractor, inside the right bank discharge chamber after construction to operate new 400 mm NB sleeve valve in the right bank discharge chamber.

The sleeve valves, control console and hydraulic power pack with all connections, all hydraulic tubing, remote valve position indicator and flow discharge charts shall be installed by the Mechanical Sub-contractor. See elsewhere with regard to lifting equipment at Site.

∅ 200 mm HDPE conduits as well as recesses in the wall shall be provided by the Main Contractor for routing of hydraulic lines through concrete floors from the sleeve valves to the hydraulic power pack (shown on Drawing Reg. No CWD ####) located in the valve control room and right bank discharge chamber as indicated on Drawing Reg. No CWD ####, CWD #### and CWD ####. The Tenderer shall state in his offer if the proposed conduits as indicated on Drawing Reg. No CWD ####, CWD #### and CWD #### are in accordance with his requirements. Hydraulic lines shall be mounted on the surface of the concrete wall and out of the waterway to prevent damage by water spray.

The Mechanical Sub-contractor shall be responsible to install and align the hoods and any anchors and built-in plates required to mount them. Dummy make-up pieces shall be used to facilitate accurate alignment of sleeve valve mounting flanges on pipes with hoods. Under no circumstances shall the actual sleeve valves be used for the purpose of aligning or installing of the hoods. The Main Contractor shall finally cast the hoods into the concrete wall after having confirmed proper alignment in the presence of the Mechanical Sub-contractor.

Subject to the available water level and not later than 2 months after delivery to Site, the Mechanical Sub-contractor shall arrange for the "dry" functional tests of the valves. "Wet" functional tests shall be arranged with the Resident Engineer and be scheduled according to the availability of sufficient water head.

The "Wet Test" shall be on the date of Commissioning from which date the guarantee period shall start. In the event where the water level in the dam is too low for wet testing of the valves, extension of the guarantee in terms of Clause CWD 45.1.3 shall apply. All outstanding defects encountered during this test, shall be attended to by the Mechanical Sub-contractor within the next five weeks.

The Final Certificate and the full retention moneys will be released on completion of the guarantee period of 12 months.

CWD 45.9 **TESTS**

All equipment supplied under this Particular Specification shall be tested for compliance with this Particular Specification as well as any other Specification referred to herein.

In the case of castings not being produced within the Republic of South Africa, all components for valves of 600 mm NB and larger and for which spheroidal graphite iron is specified, shall be subject to the following:

- Cast-on samples of the same material as that used for the component itself shall be provided in accordance with BS EN 1563 Clause 8.3. This shall be done for each valve component.
- The position of the cast-on sample in BS EN 1563 Clause 8.3 shall be subject to the approval by the Engineer before any castings are produced.
- A third party inspector, approved by the Engineer, shall corroborate the cast and test bar for identification before the test bar is separated from the main casting. The test bar shall be traceable to the main casting.
- Each test bar shall be tested by a recognized testing facility in the Republic of South Africa, approved by the Engineer, for compliance with the Specification.
- Tests shall be carried out to verify that the tensile strength and impact resistance at room temperature of the casting material conform to the relevant material specification. Castings that do not conform to the requirements of the relevant material specification shall be scrapped.
- The Mechanical Sub-contractor shall supply together with each casting a material certificate giving the material composition of each casting, including the batch number of the specific pour.

Full mechanical (including welding preparation and welding) and corrosion protection inspection of the items shall be carried out at the Manufacturer's Works in the presence of an Inspector appointed by the Engineer. Workmanship and dimensional correctness shall be checked prior to corrosion protection procedures. All equipment shall be completely assembled for functional tests and inspection at the Manufacturer's Works. Each valve supplied shall be operated in both opening and closing directions and through its full travel by means of the specific operating actuator for that valve. For this purpose and for correct reinstallation of actuators on Site, each actuator shall be linked to its specific valve through the valve's unique identification number.

The following shall be regarded as minimum hold points (as listed on the *Quality Control Plan for Manufacture*) by the Engineer and shall be carried out in his presence:

- Point 11: Flange Inspection (prior to assembly of the valve)
- Point 12: Hydrostatic test of valve components (uncoated)
- Point 18: Hydrostatic test of assembled valve
- Point 20: Final inspection and functional test

The Engineer may, in his own discretion, require the Mechanical Sub-contractor to obtain the services of an accredited and approved independent third party Inspectorate to verify any of the above points, should he not be able to attend these tests in person. Any such inspectorate shall report to the Engineer in writing the outcome of his inspection.

All of the above requirements form part of this Contract and shall be provided as part of the rates by the Mechanical Sub-contractor.

CWD 45.10 MEASUREMENT AND PAYMENT

CWD 45.10.1 Basic Principles

Notwithstanding the breakdown as indicated in the Bill of Quantities, all the work and requirements of any nature as specified in this Particular Specification shall be covered by the Mechanical Sub-contractor in the pricing as reflected in the Bill of Quantities. No additional cost for any work or requirement in this Particular Specification shall be allowed.

CWD 45.10.2 General

Items are provided for the Tenderer to price for:

- Design, Refurbishment, Procurement and Manufacture of valves and equipment;
- Corrosion Protection;
- Delivery to Main Contractor's Site store;
- Installation and testing of sleeve valves and associated manual and hydraulic control gear;
- Installation and testing of operation / control gear for electrically operated valves (excluding sleeve valves);
- Distance Pieces
- Reinstatement of Guarantee

Tenderers shall price each of these items separately for each specific type and size of valve supplied.

CWD 45.10.3 Scheduled Items

Tenderers shall price each of the under mentioned items separately for each specific piece of equipment supplied.

CWD 45.10.3.1 Design, Refurbishment, Procurement and Manufacture of valves and equipment

Unit : No

The rates tendered against the items in the Bill of Quantities shall include for full compensation of all costs incurred in the design, refurbishment, procurement, manufacture, inspection and testing of the specified valves, jointing material and fasteners, associated operating or control equipment, Operating and Maintenance Manuals and record Drawings. Payment will be made per unit. No separate payment will be made for Tender, manufacturing and Site construction Drawings. Payment will only be effected after full compliance of the items with the Particular Specification has been certified by the Engineer.

CWD 45.10.3.2 Corrosion Protection

Unit : No

The rates tendered against the items in the Bill of Quantities shall include for full compensation of all costs incurred in the preparation for corrosion protection, procurement, application, inspection, testing of corrosion protection of the specified valves, jointing material and fasteners and associated operating or control equipment. Payment will be made per unit. Payment will only be effected after full compliance of the items with the Particular Specification has been certified by the Engineer.

CWD 45.10.3.3 Delivery to Main Contractor's Site store

Unit : No

The rates tendered against the items in the Bill of Quantities shall include for full compensation of all costs incurred in the packaging and delivery into storage on Site of the specified valves, jointing material and fasteners and associated operating or control equipment. Payment will be made per unit. Payment will only be effected after full compliance of the items with the Particular Specification has been certified by the Engineer.

CWD 45.10.3.4 Installation and testing of sleeve valves and associated manual and hydraulic control gear

Unit : No

The rates tendered against the items in the Bill of Quantities shall include for full compensation of all costs incurred in the installation of fixed cone sleeve valves and associated manual and hydraulic control gear, valve position indicators, all hydraulic pipe work, electrical equipment, local wiring up to the Mechanical Sub-contractor's local distribution board, calibration of the fixed cone sleeve valves and all other aspects necessary for the operation and control of the valves in terms of the Particular Specification and Mechanical Sub-contractor's design and other documentation. The rate shall also include the provision of all labour, equipment, transport, materials and temporary works necessary to install the sleeve valves, install and adjust associated control gear and auxiliary equipment for sleeve valves, on-site quality assurance and quality control, inspection and testing in accordance with the Particular Specification. Payment will be made per unit. Payment will only be effected after full compliance of the items with the Particular Specification has been certified by the Engineer.

CWD 45.10.3.5 Installation and testing of associated operation / control gear for electrically & manually operated valves (excluding sleeve valves)

Unit : No

The rates tendered against the items in the Bill of Quantities shall include for full compensation of all costs incurred in the installation of all valve control gear, electrical equipment, local wiring up to the Mechanical Sub-contractor's local distribution board, functional testing of all valve control gear and all other aspects necessary for the operation and control of the valves in terms of the Particular Specification and Mechanical Sub-contractor's design and other documentation. The rate shall also include the provision of all labour, equipment, transport, materials and temporary works necessary to install and adjust associated control gear and auxiliary equipment for all valves, on-Site quality assurance and quality control, inspection and testing in accordance with the Particular Specification. Payment will be made per unit. Payment will only be effected after full compliance of the items with the Particular Specification has been certified by the Engineer.

CWD 45.10.3.6 Distance Pieces

Unit : No

The rates tendered against the items in the Bill of Quantities shall include for full compensation of all costs incurred in the procurement, manufacture, inspection and testing of the specified distance pieces (to suit each specific valve), jointing material and fasteners. Payment will be made per unit. Payment will only be effected after full compliance of the items with the Particular Specification has been certified by the Engineer.

CWD 45.10.3.7 Reinstatement of Guarantee

Unit : No

The rates tendered against the items in the Bill of Quantities shall include for full compensation of all costs incurred for reinstating and extending the full manufacturer's guarantee from the date of Commissioning of each valve. This means that the guarantee on each valve shall commence at the date of Commissioning, irrespective of when it was delivered or installed. Payment will be made per unit. Payment will be made at the time of Commissioning.

BIDDERS MUST INITIAL ALL PAGES UNDER SECTION 3 SPECIFICATIONS AND SIGN THE DECLARATION BELOW.

Therewith I, _____ (Bidder's Name) declare that I have read, completed and understood the above specifications and that I comply.

Furthermore, I declare that the Technical Datasheets/Brochures submitted under the mandatory requirements (Phase 1) of this bid will be the items that the bidder will deliver.

_____
BIDDER'S SIGNATUR

DEPARTMENT OF WATER AND SANITATION

BID: WTE-0402 CS

SUPPLY AND DELIVERY OF VALVES, FLANGES, PUDDLE FLANGES, FASTENERS AND WELDING MATERIALS FOR RIGHT HAND BYPASS PIPELINE FOR CLANWILLIAM DAM.

SECTION 4: SBD 3.1 – PRICING SCHEDULE

CONTENTS

PREAMBLE TO THE SBD 3.1 – PRICING SCHEDULE

1. GENERAL

The Schedule of Quantities forms part of the Contract Documents and must be read and priced in conjunction with all the other documents comprising the Contract Documents which include the Conditions of Tender, Conditions of Contract, the Specifications (including the Project Specification) and the Drawings.

2. DESCRIPTION OF ITEMS IN THE SCHEDULE

The Schedule of Quantities has been drawn up generally in accordance with Civil Engineering Quantities 1990 issued by the SA Institution of Civil Engineers.

The short descriptions of the items in the Schedule of Quantities are for identification purposes only and the measurement and payment clause of the Standardised Specifications and each Particular Specification, read together with the relevant clauses of the Project Specification and directives on the drawings, set out what ancillary or associated work and activities are included in the rates for the operations specified.

3. QUANTITIES REFLECTED IN THE SCHEDULE

The quantities given in the Schedule of Quantities are estimates only, and subject to remeasuring during the execution of the work. Where quantities or sums are indicated as "Provisional, the Employer reserves the right to adjust the quantity or sum upwards or downwards as necessary, or the item can be omitted altogether. The Contractor shall obtain the Engineer's detailed instructions for all work before ordering any materials or executing work or making arrangements for it.

The Works as finally completed in accordance with the Contract shall be measured and paid for as specified in the Schedule of Quantities and in accordance with the General and Special Conditions of Contract, the Specifications and Project Specifications and the Drawings. Unless otherwise stated, items are measured net in accordance with the Drawings, and no allowance has been made for waste.

The validity of the contract will in no way be affected by differences between the quantities in the Schedule of Quantities and the quantities finally certified for payment.

4. PRICING OF THE SCHEDULE

The prices and rates to be inserted in the Schedule of Quantities shall be the full inclusive prices to be paid by the Employer for the work described under the several items, and shall include full compensation for all costs and expenses that may be required in and for the completion and maintenance during the defects liability period of all the work described and as shown on the drawings as well as all overheads, profits, incidentals and the cost of all general risks, liabilities and obligations set forth or implied in the documents on which the Tender is based.

Each item shall be priced and extended to the "Total" column by the Tenderer. If the Contractor omits to price any items in the Schedule of Quantities, then these items will be Considered to have a nil rate or price.

All items for which terminology such as "inclusive" or "not applicable" have been added by the Tenderer will be regarded as having a nil rate which shall be valid irrespective of any change in quantities during the execution of the Contract.

All rates and amounts quoted in the Schedule of Quantities shall be in Rand and shall include all levies and taxes (other than VAT). VAT will be added in the summary of the Schedule of Quantities.

5. CORRECTION OF ENTRIES

Incorrect entries shall not be erased or obliterated with correction fluid but must be crossed out neatly. The correct figures must be entered above or adjacent to the deleted entry, and the alteration must be initialled by the Tenderer.

6. MONTHLY PAYMENTS

Unless otherwise specified in the Specifications and Project Specifications, progress payments in Interim Certificates, referred to in Clause 16 of the National Treasury General Conditions of Contract, July 2010, in respect of "sum" items in the Schedule of Quantities shall be by means of interim progress instalments assessed by the Employers Agent and based on the measure in which the work actually carried out relates to the extent of the work to be done by the Contractor.

7. UNITS OF MEASUREMENT

The units of measurement described in the Schedule of Quantities are metric units for which the standard international abbreviations are used. Non-standard abbreviations which may appear in the Schedule of Quantities are as follows:

Non-Standard Abbreviations	
Abbreviation	Unit
%	Percent
No.	Number
Prov sum ; PS	Provisional sum
R/only ; R/o	Rate only
Sum, Lump sum	sum
W/day	Work day
h	Hour
wk	Week
d	Day
Standard Abbreviations	
kPa	kilopascal
mm	millimetre
m	metre
km	kilometre
m²	square metre
ha	hectare
m³	cubic metre
kN	Kilonewton
MN	meganewton
MN.m	meganewton-metre
MPa	megapascal
kg	kilogram
t	ton (1000 kg)

PRICING SCHEDULE
(Firm Price)

DEPARTMENT OF WATER AND SANITATION

BID: WTE-0402 CS

PRICING SCHEDULE FOR SUPPLY AND DELIVERY OF VALVES, FLANGES, PUDDLE FLANGES, FASTENERS AND WELDING MATERIALS FOR RIGHT HAND BYPASS PIPELINE FOR CLANWILLIAM DAM IN THE WESTERN CAPE FOR DWS CONSTRUCTION SOUTH.

THIS BILL OF QUANTITIES MUST BE COMPLETED IN FULL – FAILURE TO COMPLY WILL INVALIDATE YOUR BID.

OFFER TO BE VALID FOR 120 DAYS FROM CLOSING DATE OF BID

NOTE: NO PRICE ADJUSTMENTS WILL BE ALLOWED

NAME OF BIDDER:…….. BID NO: WTE-0402 CS

CLOSING DATE: 23 SEPTEMBER 2025 CLOSING TIME: 11H00

Item	SHORT DESCRIPTION	Unit	Provisional QTY	RATE	AMOUNT
1	**DELIVERY TO SITE**	**No**	**1**		
2	**GASKETS**	**N/A**	**N/A**	**N/A**	**N/A**
2.1	GASKET 3mm THK FULL FACE TYPE TO SUIT 900 NB FLANGE RUBBER	No	5		
2.2	GASKET: 3mm THK FULL FACE TYPE TO SUIT 400 NB FLANGE RUBBER	No	11		
2.3	GASKET: 3mm THK FULL FACE TYPE TO SUIT 300 NB FLANGE RUBBER	No	3		
2.4	GASKET: 3mm THK FULL FACE TYPE TO SUIT 200 NB FLANGE RUBBER	No	5		
3	**VALVES AND COUPLINGS**	**N/A**	**N/A**	**N/A**	**N/A**
3.1	RSV GATE VALVE: 400 NB, DOUBLE FLANGED	No	3		
3.2	FLANGED AIR VALVE PN10: 200 NB	No	2		
3.3	FLEXIBLE PIPE COUPLING TO SUIT 400 NB PIPE, PN10 HDG & EPDM	No	1		
4	**FASTNERS**	**N/A**	**N/A**	**N/A**	**N/A**
4.1	HEX. HEAD BOLT M30 x 160, C/W HEX. NUT & 2 WASHERS	No	101		
4.2	HEX. HEAD BOLT M24 x 90, C/W HEX. NUT & 2 WASHERS	No	152		
4.3	HEX. HEAD BOLT M20 x 65, C/W HEX. NUT & 2 WASHERS	No	34		
				Carried Forward	

Item	SHORT DESCRIPTION	Unit	Provisional QTY	RATE	AMOUNT
				Brought Forward	
4.4	**ADHESIVE ANCHOR**	**N/A**	**N/A**	**N/A**	**N/A**
4.4.1	M20 x 240 LONG FULL THREAD, C/W 2 HEX. NUTS & 2 WASHERS	No	51		
4.4.2	CHEMICAL ANCOR COMPOUND SUFFIESENT TO INSTALL ITEM D-4.1 INCLUDING APPLICATOR GUN.	Sum	1		
4.5	STUD - M24 x 650 LONG FULL THREAD, C/W 4 HEX. NUTS & 2 WASHERS, INCL. 2 DOUBLE THICK WASHERS	No	13		
5	**FLANGES, LUGS PUDDLES- AND THRUST COLLARS**	**N/A**	**N/A**	**N/A**	**N/A**
5.1	900 FLANGE	No	4		
5.2	900 PUDDLE COLLAR	No	22		
5.3	400 FLANGE	No	12		
5.4	400 PUDDLE COLLAR	No	5		
5.5	400 THRUST COLLAR	No	2		
5.6	300 FLANGE	No	2		
5.7	200 FLANGE	No	2		
5.8	LIFTING LUG	No	90		
6	**FLAT STEEL STOCK**	**N/A**	**N/A**	**N/A**	**N/A**
6.1	12mm thick Mild steel plate 1,2m x 2,5m	No	1		
6.2	6mm think Mild steel plate 1,2m x 2,5m	No	2		
7	**WELDING MATERIAL**				
7.1	Allowance for welding material (cost price)	PC Sum	1	N/A	R50 000.00
7.2	Profit on PC Sum	%	1	5%	R 2 500.00
				TOTAL BID AMOUNT (Excluding VAT)	
				15% VAT	
				TOTAL BID AMOUNT (Including VAT)	

NB: IN TERMS OF THE DWS SCM POLICY, THE TENDER PRICE MAY BE SUBJECTED TO PRICE NEGOTIATION WITH THE PREFERRED BIDDER, PRIOR THE SIGNING OF THE CONTRACT.

NOTE: ALL FIELDS ON THIS FORM SHOULD BE COMPLETED IN FULL. IF A FIELD IS NOT APPLICABLE, THE FIELD SHOULD BE INDICATED AS "NOT APPLICABLE".

THE DEPARTMENT OF WATER AND SANITATION WILL NOT ENTERTAIN ANY CLAIMS FOR NON-FIRM PRICES INCREASES CLAIMED AT A LATER DATE, UNLESS SUCH NON-FIRM PRICE ADJUSTMENTS ARE CLEARLY MOTIVATED IN THIS FORM.

- Required by:	Construction South
- At (Place where service is required):	Clanwilliam Dam
Delivery basis. See note hereunder	To Site
- **Period required for delivery after receipt of order**:	**21 Days**……
- Delivery period: *	FIRM / **(6 MONTHS)**

AND / OR

Are you a manufacturer of the items offered by you?	*YES / NO
- Name and addresses of the factories where the goods will be manufactures and may be inspected, if required?	……..
Does the item offered comply with any recognise Standards body (e.g. SANS)	* YES / NO
- If so furnish valid certificate to this end	*ATTACHED / NOT ATTACHED
Is offer strictly to specification?	*** YES / NO**
- If not to specification, state deviation(s)	……...…… ……

****"All Applicable Taxes" includes value-added tax, pay as you earn, income tax, unemployment insurance fund, Contributions and skills development levies.**

NOTE: All delivery and/or transport costs must be included in the bid price.

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Any enquiries regarding bidding procedures may be directed to the –

For administrative enquiries
T. Daniels
danielst@dws.gov.za

Or

For technical or site information
Mr. B van HEERDEN
vanheerdena@dws.gov.za