DEPARTMENT OF WATER AND SANITATION
REPUBLIC OF SOUTH AFRICA

DUE AT 11:00 ON

CLOSING DATE: 23 SEPTEMBER 2025

BID: WTE-0409 CS

WRITING OF WELDING PROCEDURES AND QUALIFYING OF WELDERS FOR CLANWILLIAM DAM.

SUBMIT BID DOCUMENTS TO:

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

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

COMPILED BY: SCM CONSTRUCTION SOUTH MANAGEMENT

DEPARTMENT OF WATER AND SANITATION

BID: WTE-0409 CS

WRITING OF WELDING PROCEDURES AND QUALIFYING OF WELDERS FOR CLANWILLIAM DAM.

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-0409 CS**	CLOSING DATE:	**23 SEPTEMBER 2025**	CLOSING TIME:	**11H00**
DESCRIPTION	**WRITING OF WELDING PROCEDURES AND QUALIFYING OF WELDERS 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 AND SANITATION					
CONSTRUCTION SOUTH					
CLANWILLIAM DAM SITE: N7 ROUTE					
CO-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-0409 CS

WRITING OF WELDING PROCEDURES AND QUALIFYING OF WELDERS FOR CLANWILLIAM DAM.

SECTION 1: LEGALITIES

CONTENTS

DEPARTMENT OF WATER AND SANITATION

BID: WTE-0409 CS

WRITING OF WELDING PROCEDURES AND QUALIFYING OF WELDERS FOR CLANWILLIAM DAM.

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	Terry – Lee 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:

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 may be 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'' 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	Signed (by the welding engineer) curriculum vita of the welding engineer that will produce the welding procedures.		
2	Certified copy of the registration certificate as an International Welding Engineer through an Authorized National Body (ANB) affiliated with the International Institute of Welding (IIW).		
3	Conformation of employment for the welding engineer by the bidder. Alternatively should the welding engineer not be directly employed by the bidder a letter of agreement between the bidder and the welding engineer needs to be submitted.		

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	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* and the requirements as in Table 3 below by comparing it to the information submitted in Phase 1.

Failure to comply with all the 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	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?		
Requirement 1	Did the information submitted in Phase 1 meet the following requirement? **The CV should show:** • Should be signed by the welding engineer • 5 or more years of experience as a welding engineer (post registration) • In order to confirm experience and level of qualification the CV should show at least the following details: 1) Personal particulars a) Position/s held [does it relate to the scope of work?] b) Full name [is it included and does it correlate to qualifications, agreements, etc?] 2) Qualifications (degrees, diplomas, grades of membership of professional societies and professional registrations) [does it correlate with the submitted registration certificate?] 3) Name of current employer and position in enterprise [does it correlate to the letter of employment or letter of agreement] 4) Overview of postgraduate / diploma experience (year, organization and position) [is it in-line with the years of experience requirements?] 5) Outline of recent experience that has a bearing on the scope of work [is it in-line with the scope of work?] 6) Contactable references [is it included?]		
Requirement 2	Did the information submitted in Phase 1 meet the following requirement? **Registration should:** • Be certified by a commissar of oaths within the last 3 months. • Be consistent with the information submitted in the CV.		
Requirement 3	Did the information submitted in Phase 1 meet the following requirement? **Conformation of employment of the welding engineer.** • Name and details of the bidder and the welding engineer • Statement that the welding engineer is currently a full time employee of the bidder • Signed and dated by the bidder and the welding engineer. **OR** **Letter of agreement between bidder and Welding engineer should**: • Name and details of the bidder and the welding engineer • Statement that the welding engineer agrees to work with the bidder for the duration of the contract. • Signed and dated by the bidder and the welding engineer.		

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)

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**

[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.

2.2.1 If so, furnish particulars:
……
……

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]

4.6. I, 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: .....

.....

.....

.....

DEPARTMENT OF WATER AND SANITATION

BID: WTE-0409 CS

WRITING OF WELDING PROCEDURES AND QUALIFYING OF WELDERS FOR CLANWILLIAM DAM.

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.

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

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 to develop welding procedures and qualify the Client's welders against said procedures for the Field joints required for the mild steel bypass pipe and the permanent stainless steel pipes.

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 **WRITING OF WELDING PROCEDURES AND QUALIFYING OF WELDERS 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 services 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	**Field welding procedure for stainless steel 304L and 316 L Pipes. Pipes being vertically and horizontally inclined.**	Be in accordance with ***Appendix A: CWD 44, Appendix B: Site installation of pipe – welding & corrosion protection*** and ***Appendix C: Pipe assembly drawings*** where it pertains to the welding of the pipes.		
1.1	1800NB	For weld details see: *CWD 7008, CWD7006 and CWD7002* *Pipe orientation: vertical and horizontal* *Material: Stainless steel 304L*		
1.2	1000NB	For weld details see: *CWD 7008, CWD7006 and CWD7002* *Pipe orientation: horizontal* *Material: Stainless steel 304L*		
1.3	600NB	For weld details see: *CWD 7008, CWD7006 and CWD 7038* *Pipe orientation: horizontal* *Material: Stainless steel 304L*		
1.4	400NB	For weld details see: *CWD 7008, CWD7006 and CWD 7053* *Pipe Orientation: vertical* *Material: Stainless steel 316L*		
1.5	300NB	For weld details see: *CWD 7008, CWD7006 and CWD 7048* *Pipe Orientation: horizontal* *Material: Stainless steel 316L*		
1.6	100NB	For weld details see: *CWD 7008, CWD7006 and CWD 7028* *Pipe Orientation: horizontal* *Material: Stainless steel 316L*		
1.7	80NB	For weld details see: Appendix A, Appendix B *Orientation: vertical, horizontal and diagonal* *Material: Stainless steel 304L*		

2	**Field welding procedure for Mild steel (SANS 50025 / EN 10025 Gr S355JR) pipes. Pipe being horizontally inclined.**	Be in accordance with ***Appendix A: CWD 44, Appendix B: Site installation of pipe – welding & corrosion protection*** and ***Appendix D: Bypass Pipe drawings*** where is pertains to the welding of the pipes.		
3	**Qualifying of Employers staff**			
3.1 & 3.2	Qualifying to welding procedure. Per person per welding procedure **And** Testing of welds	The Contractor is to provide the following for the Employers Staff: • Introducing the employers staff to the approved welding procedure as a presentation. • Welding qualify against welding procedures. Qualifying of welders shall be in accordance with ***Appendix A: CWD 44 and Appendix B: Site installation of pipe – welding & corrosion protection*** **Take note:** All qualifications of employer's staff will take place at the employer's facility at Clanwilliam Dam. Further take note that the Employers staff that shall be sent for the qualification will have a min of 5 years welding experience and be in the possession of a red seal as a welder.		
3.3	Travel, accommodation and safety requirements for qualifying facilitator ..	Allowance should be made for 4 trips including accommodation for the facilitator. The Facilitator should have: • a valid medical certificate of fitness • a police clearance • a approved risk assessment for the testing activities. • Undergo a site induction by the client (allow for plus minus 1 hr) These documents need to be submitted by the bidder and approved by the Client before any work can commence.		

3.2.15 APPENDICES

- **Appendix A: CWD 44**

PARTICULAR SPECIFICATION CWD 44

PIPES AND SPECIALS

INDEX TO PARTICULAR SPECIFICATION CWD 44

PARTICULAR SPECIFCATIONS CWD 44

PIPES AND SPECIALS

CWD 44.1 SCOPE

CWD 44.1.1 Services Required

This Specification covers the manufacture and supply, delivery, installation and testing of electric fusion welded stainless steel grade 304L, 316L, 2205 and 3CR12 pipes and specials and low carbon steel pipes and associated specials for the conveyance of water at ambient temperatures and at medium to high pressures.

In particular, this Specification shall cover:

(a) Manufacture of pipes, pipe ancillaries, pipe specials and delivery to Site, including the supply of all materials;

(b) Installation, testing and Tests on Completion of pipes, pipe ancillaries and pipe specials;

(c) Workshop corrosion protection of specials and straight pipes, complete with (where applicable) welded in-situ ancillaries (nozzles, sliding support reinforcement, anchorages, etc.)

(d) Site corrosion protection of circumferential field welds;

(e) Remedial corrosion protection where necessary to remedy damage to shop painting of pipes, ancillaries and specials and to valves and appurtenant equipment supplied by others occurring after handover of such equipment by the Contractor;

(f) Site painting to stipulated final colour of pipe work, including Site painting of valves and appurtenant equipment supplied by others;

(g) Maintenance of pipes and pipe specials during the Defects Notification Period;

(h) Supply of all fasteners and washers for complete installation of the entire pipe system. All fasteners and gaskets for mounting of the valves (CWD45 - Valves) to the pipe work shall be supplied by the Valve Supplier.

CWD 44.1.2 Deviations

Equipment shall be manufactured and corrosion protected in accordance with the requirements specified in this Specification. No deviation from the Specification will be allowed without the written approval of the Engineer.

CWD 44.1.3 Conditions of Contract

The conditions governing this Tender are as set out in the “Conditions of Contract for Mechanical & Electrical Works (General)".

Contracts will only be awarded to Tenderers who, in the Engineer’s opinion, are capable of manufacturing to the required standard. Only Tenderers who can demonstrate that they are bona fide manufacturers of the equipment as specified in this 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. 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 44.1.4 Guarantee

The period of guarantee as stipulated in “Conditions of Contract for Mechanical & Electrical Works (General)", shall read 12 (twelve) months from the date of issue of the Commissioning Certificate by the Engineer to the Contractor or on completion of full flow testing, whichever is the latest and shall terminate with the issue of the Final Certificate by the Department.

CWD 44.1.5 Description of Pipe Outlet System

The Outlet Works at the Clanwilliam Dam include the following prime elements as shown on the Drawings:

Drawings showing pipe work layout:	Parts List	CWD 7000
	Assembly Drawings	CWD 7001 to CWD 7007
	Detail Drawings	CWD 7008 to CWD 7079

- Refer to Drawing CWD 7001 for the General Assembly and Layout of the dam’s Outlet Works.

- The outlet works structure of approximately 39 m overall height equipped with two vertical DN 1800 pipe stacks, equipped with 7 staggered and screened horizontal intakes. The intakes consist of stainless steel 316L bell mouths, isolated at their downstream ends by DN 1800 butterfly valves (level selector valves). For maintenance purposes, the bell mouths will be isolated by a single emergency gate designed to seal against the sealing faces of the bell mouths and operated by an overhead crane on top of the outlet works structure.

- 6 off 90° DN 1800 x DN 1800 branch sweep tees and 1 off 30º Y-Piece connect the staggered horizontal intakes to twin DN 1800 vertical pipe stacks, both extending horizontally through the dam wall on top of one another and bifurcating to respective crossover chambers, one leading to the isolating valve chamber that connects to a future Hydro-electric Power Plant and the other continues to the sleeve valve controlled river outlet chamber.

- Twin DN 1000 outlet pipes bifurcating from the river outlet pipes on the left bank and connecting to the right bank crossover chamber and pipe outlet chamber.

- Two operational and one spare set of stainless steel / uPVC fine screens, manually cleaned on the emergency gate control room operating floor level (RL 124,750 masl).

- Sleeve valve river outlets fed from the twin DN 1800 main outlet and twin DN 1000 branch pipes reducing to DN 1000 and DN 600 respectively. The discharge of water shall be through two DN 1000 hooded fixed cone sleeve valves and two subsidiary DN 600 hooded fixed cone sleeve valves for river compensation flow. The DN 1000 fixed cone sleeve valves shall be isolated via DN 1800 butterfly valves installed upstream of the reducers serving these valves. Similarly, the DN 600 fixed cone sleeve valves shall be isolated via DN 1000 butterfly valves.

- An electrically operated overhead crane intended to operate the emergency gate and to allow the level selector valves to be raised to emergency gate control room operating floor level for major maintenance off-site and for handling of all mechanical equipment in the outlet works.

- 2 off pipe outlet chambers containing a 3-off DN 1800 butterfly valve cross over system.

- 1 off pipe outlet chamber containing a 5-off DN 1000 butterfly valve cross over system.

- Pipe work from the pipe outlet chambers extending towards the flow meter chambers.

- Small diameter valves in bypasses, drains, back fill pipes, permanent water supply pipes to the operator's houses, etc.

CWD 44.1.6 Valves, heads and flows

Refer to CWD 45 - Valves for supply of valves, applicable water heads and flow velocities.

CWD 44.1.7 Tender Information

Sufficient information shall be supplied with the Tender giving enough information to make a proper assessment of the equipment offered. Information supplied shall include (but not necessarily be limited to):

- Pipe manufacturing process proposed, within the scope of the detailed Specifications;
- Material supplier proposed, within the ambit of the detailed Specifications;
- Slip coupling and flange adaptor supplier proposed.

CWD 44.2 INTERPRETATIONS

CWD 44.2.1 Standard specifications for steel pipes and specials

This Particular Specification CWD 44 shall where applicable, have preference over all other sections of this Tender Document or any Standard Specifications referred to. Technical drawings referred to in this Particular Specification shall have preference. Otherwise this Particular Specification shall rule.

This Particular Specification shall be read in conjunction with General Mechanical Specification DWS 1601 and the following Departmental Standard Specifications (which are available on request):

STANDARD SPECIFICATION DWS 2020:	QUALITY CONTROL SPECIFICATION (October 2001 edition)
STANDARD SPECIFICATION DWS 9900:	CORROSION PROTECTION SPECIFICATION (October 2002 edition)
STANDARD SPECIFICATION DWS 1110:	CONSTRUCTION OF PIPELINES (Latest edition)

This Specification is supported by the following standards of which the latest publication shall apply (unless otherwise specified):

(a) American Water Works Association

AWWA: C207 : Steel pipe flanges "100mm through 3600mm".
AWWA MANUAL M11: Steel Pipe - A Guide for Design and Installation

(b) South African Bureau of Standards

SANS 121:	Hot-dip galvanised coatings on fabricated iron and steel articles
SANS 564:	Rubber insertion sheeting
SANS 719:	Electric welded low carbon steel pipes for aqueous fluids (ordinary duties)
SANS 1123:	Steel Pipe Flanges (2011 Edition 3.2)
SANS 1431:	Weldable structural steels
SANS 1476:	Fabricated flanged steel pipe works
SANS 1700:	Fasteners
SANS 10044:	Welding

(c) British Standards Institution

BS 534:	Steel pipes and specials for water and sewage
BS 2494:	Materials for elastomeric joint rings for pipe work and pipelines
BS 2633:	Class I arc welding of ferritic steel pipe work for carrying fluids
BS 4677:	Arc welding of austenitic stainless steel pipework for carrying fluids

(d) American Petroleum Institute

API 5L:	Specification for line pipe
API 1104:	Standard for welding pipelines and related facilities

(e) American Society of Mechanical Engineers

ASME IX:	Boiler and Pressure Vessel Code

CWD 44.2.2 Definitions and Abbreviations

For the purposes of this Particular Specification, the following definitions shall apply:

Contractor:	The Party to whom the Tender comprising this Particular Specification is awarded.
Employer:	Chief Directorate Infrastructure Development of the Department of Water and Sanitation.
Engineer:	Chief Directorate Engineering Services of the Department of Water and Sanitation. For the purposes of this Particular Specification, the Engineer will be represented by the Mechanical & Electrical Engineering Directorate. Enquiries shall be directed to the compiler as listed in Annexure A.
Main Contractor:	The Directorate Construction of the Department of Water and Sanitation. The Main Contractor shall be responsible for the raising of Clanwilliam Dam.
Specification:	This Particular Specification together with any references therein to other documents.

Except as indicated below, the definitions given in SANS 10044 and SANS 719 shall apply:

Pipe means a straight cylinder of uniform diameter and of standard or non-standard length and having square-cut (plain or prepared) ends.

Specials means any pipe other than a pipe as defined above. Included are all types of specials such as bends, tees, crosses, angle branches, reducers, tapers, couplings and flanged pipes.

Exact Length as defined in SANS 719 shall be the standard pipe length stated in Clause CWD 44.5.2.1.

ABS	:	Acrylnitrile-butadiene-styrene
Al	:	Aluminium
BSPT	:	British Standard pipe thread
CI	:	Cast iron - grade 220

CS	:	Cast steel
DCA	:	Die cast aluminium
DFT	:	Dry film thickness
DN	:	Nominal diameter
FA	:	"VIKING JOHNSON" type flange adaptor or equal
FBE	:	Fusion-bonded Epoxy
FBP	:	Fusion-bonded Polyester
FBPE	:	Fusion-bonded Polyethylene
FTE	:	Flanged two ends
FOE	:	Flanged one end
FW	:	Field weld
GRP	:	Glass fibre reinforced Polyester
HDG	:	Hot-dip galvanized
HDPE	:	High Density Polyethylene
MS	:	Mild steel (grade 300WA, S355) or any carbon steel
NB	:	Nominal bore/diameter
PBE	:	Plain both ends
PC	:	Polycarbonate
PE	:	Plain end
PVC	:	Polyvinylchloride
RFA	:	Restrained flange adaptor
SC	:	"ARPOL", "STRAUB" or equal type slip coupling
SG	:	Spheroidal graphite cast iron – grade 420
SS	:	Stainless steel – grades 304, 304L, 316, 316L and 2205
UV	:	Ultra Violet
WP(B)	:	Weld Preparation (Butt)
3Cr12	:	Corrosion resistant steel
µm	:	Micrometer

CWD 44.3 MATERIALS

CWD 44.3.1 Pipes and Specials

Unless otherwise indicated on the Drawings or supplementary schedules:

- All pipes and specials of 600 kPa rating and smaller than nominal diameter 600 mm, as well as all sizes of bell mouths (including the section of pipe between the bell mouth and the selector butterfly valve), shall be manufactured of stainless steel 316 L and in accordance with SANS 719.
- Pipes and specials of 600 kPa rating and nominal diameter of 600 mm and larger (excluding bell mouths) shall be manufactured of stainless steel 304 L and in accordance with SANS 719, irrespective of being in concrete or not.
- Pipes and specials of 1 000 kPa rating and nominal diameter of 600 mm and larger and embedded in soil, shall be manufactured to SANS 719 from mild steel as specified and approved by the Engineer.

CWD 44.3.2 Flanges

All flanges up to and including a size of 200 mm NB shall be manufactured from stainless steel Grade 304L or equivalent, cut from plate.

All flanges of size larger than 200 mm NB shall be manufactured from mild steel to SANS 1431 Grade 300 WA, S355 or equivalent, preferably by forging or cut from plate, or (less preferably) by welded ring segments according to AWWA C207.

The Contractor shall refer to CWD45 - Valves to confirm that drilling of flanges shall match that of the appropriate valve supplied under CWD45.

CWD 44.3.3 Collars

All collars shall be manufactured from mild steel to SANS 1431 Grade 300 WA or S355.

CWD 44.3.4 Gaskets

Gaskets shall be manufactured from insertion rubber or other similar approved material which complies with the requirements of SANS 564.

All gaskets shall be 3 mm thick and purpose made to the dimensions of the matching flanges.

CWD 44.3.5 Rubber

Rubber for jointing rings in flexible couplings shall be manufactured from first grade EPDM.

CWD 44.3.6 Bolts and Nuts

Unless otherwise stated on the Drawings, bolts, nuts, studs and washers shall comply with SANS 1700 and shall be hot-dip galvanised in accordance with SANS 121.

CWD 44.4 PLANT

The Contractor shall utilise such plant and equipment as is necessary to safely and efficiently carry out the installation, testing and commissioning of the items covered by this Particular Specification.

CWD 44.5 FABRICATION AND CONSTRUCTION

CWD 44.5.1 General

CWD 44.5.1.1 Supporting Specifications

Pipes and specials shall be manufactured, tested and inspected in accordance with the latest issues of the following Standards and Codes of Practice except where amended in subsequent clauses in this Particular Specification.

CWD 44.5.1.2 Welding of Pipes & Specials

SANS 1476, SANS 719, BS 2633 and BS 534 shall also be deemed to apply to the manufacture of pipes and specials from submerged arc spirally - or longitudinally welded "cans", rolled from low carbon steel plate or 3CR12, 304L, 316L and 2205 stainless steel plate of designated Specification and then joined by submerged arc circumferential welding or MIG flux core welding to form suitable pipe lengths.

The following additional requirements shall apply with regards to welding of pipes and specials:

(a) All butt-welds and branch fillet welds on specials shall where practical, have an internal weld. The weld bead of this internal weld shall not extend above the prolongation of the original inside surface of the pipe by more than 1,0 mm. Internal reinforcement in the form of backing rings at weld seams shall not be permitted.

(b) The radiographic technique, adjudication of radiographs and repair of defects shall be in accordance with API 1104.

Refer to Drawing CWD 7008 for details of the site welded joints for DN 1800 and DN 1000 pipes.

CWD 44.5.1.3 Qualification of Welders

All manual or semi-automatic welds and repair welds shall only be undertaken by welders qualified under tests laid down in the latest issue of the ASME "Boiler and Pressure Vessel Code", Section IX.

CWD 44.5.1.4 Non-destructive Tests and Adjudication

The following standard Specifications shall apply:

- Radiographic Inspection : API 1104
- Ultrasonic Inspection : API 5L

CWD 44.5.2 Specific Requirements for Pipes and Specials

CWD 44.5.2.1 Dimensional requirements

All dimensions and tolerances shall be in accordance with the Drawings. Where not indicated, tolerances shall be in accordance with SANS 719 Clause 5.1.

The tolerance on the pipe outside diameter for pipe outside diameters above 1250 mm up to and including 1820 mm shall be ± 8 mm (excluding pipe ends).

The ovality tolerance on the pipe inside diameter of pipe ends above 1250 mm up to and including 1820 mm shall be ±1,6 mm all around the circumference over 150 mm distance from pipe ends.

Pipe ends to be joined by Site welding require appropriate spider-jacks and pipe chain clamps to ensure the acceptable ovality tolerance mentioned above is achieved and to accommodate the combined tolerance of two adjacent connecting pipes.

CWD 44.5.2.2 Specials

Specials shall generally be manufactured from pipe conforming to this Particular Specification (i.e. pipe that has been successfully subjected to a hydraulic pressure test as specified in Clause CWD 44.5.3.6). Where detailed Drawings of the specials are provided, the specials are to comply in all respects with the Drawings. Where constructional details are not indicated on the Drawings, these issues shall be communicated in writing by the Contractor to the Engineer before any work is carried out.

(a) Weld Bead

The internal weld bead for fusion welding and the height of the upset metal and flash on the inner surface of electric welding shall not exceed 1,0 mm.

Unless it is stated elsewhere in the Specification or on the Drawings that the pipes and specials are to be jointed by butt-welding, the external weld reinforcement or upset metal and flash shall be ground flush with the body for a length of 200 mm back from the ends.

(b) Bends

Bends shall have their "centre plane" marked with two small punch marks close to both ends of the bends to facilitate correct positioning of the bends during laying.

(c) Branches and Nozzles for Bypasses, Drains, Air Valves, Pressure Gauges, etc.

Centre lines of nozzles and branches shall be at right angles to the barrel of the pipe, unless indicated otherwise on the Drawings.

(d) Reducer Pieces

Reducer pieces shall be manufactured from the same type and quality steel plate as would the relevant straight pipe for the same duty. Reducer pieces shall not have more than two longitudinal weld seams and further as detailed on the Drawings.

CWD 44.5.2.3 Flanges and Gaskets

All flanges shall be supplied complete with bolts, nuts, washers and full face gaskets, except where a gasket and bolting material is specifically designated to be supplied under CWD 45 - Valves.

All bolts and nuts shall be in accordance with DWS 1601 – General Mechanical. All bolt sizes shall conform to the requirements of CWD 45 - Valves. Bolted joints shall have a washer underneath both the bolt head and nut.

Flanges shall be drilled "off-centre" and in accordance with Table 2 below and the Drawings. Flange thickness shall be in accordance with the Drawings. Flange faces shall be in accordance with Table 1 below. Where not indicated, 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. The flange face shall have a circular or gramophone finish with a maximum surface roughness of 25 µm after the application of the coating.

The following shall apply, unless otherwise stated on the Drawings:

TABLE 1
SCHEDULE OF FLANGE TYPES ACCORDING TO SIZE AND PRESSURE RATING

PIPE 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.

TABLE 2
SCHEDULE OF FLANGE DIMENSIONS & DRILLING ACCORDING TO PRESSURE RATING

PRESSURE RATING (kPa)	PIPE NB (mm)	FLANGE BODY DIMENSIONS (EXCL. THICKNESS) (SANS 1123, Ed. 3.1)	DRILLING TABLE (SANS 1123, Ed. 3.1)
1 000	1600 & 1800	1 000/1B	1 000/1B
1 000	< 1600	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	BS 4505 Table 40/3	BS 4505 Table 40/3
4 000	> 500	NWS 1676 Table 40/3	NWS 1676 Table 40/3

(a) 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 to 2 000 mm NB shall be as for integral iron flanges as detailed in SANS 1123 Table 1 000/1B.

CWD 44.5.2.4 Flexible Couplings and Flange Adaptors

Flexible couplings shall be of the Straub, Arpol or similar type at the joints indicated on the Drawings. All couplings shall permit a repeated movement to cater for thermal expansion and contraction of the pipes and shall further allow for the angular deflections, all in accordance with the supplier's Specification for each specific size. During installation, all tolerances with regard to permitted gaps, misalignment, angular deflection, differences in pipe O/D, axial movement, lateral displacement, etc. shall be complied with.

The casing of the coupling shall be manufactured from stainless steel 304 L or 316 L and the rubber seal from EPDM rubber. The locking bolts and bars of the coupling shall be stainless steel.

Flange adaptor type couplings shall be of the Viking Johnson type or equal and shall accommodate angular deflections as specified by the supplier.

CWD 44.5.3 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. All corrosion protection products shall be submitted to the Engineer for approval before application.

CWD 44.5.3.1 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 44.5.3.2 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. Other coating systems may only be used if full details of the coating system was submitted at Tender stage and approved by the Corrosion Engineer.

CWD 44.5.3.3 Coating Systems for Outlet Pipes, Specials and Bell Mouths

The following tables are abbreviated guidelines and the systems are not listed in order of preference.

See Notes under Clause CWD 44.5.3.3(i).

Refer to the Standard Specification DWS 9900 – CORROSION PROTECTION for the updated corrosion systems. The following tables provide an indication of the corrosion protection systems required:

(a) Encased in Concrete

ENVIRONMENT	MATERIAL	SURFACE	SYSTEM	MINIMUM DFT (µm)
Encased in concrete	SS 304 or SS 316 (See note 6)	Lining	1. Two pack Epoxy	250
			2. FBE	175
		Coating	1. Two pack Epoxy plus sealant of Polyurethane or Polysulphide – See note 2 of Clause CWD 44.5.3.3(i)	150
			2. FBE plus sealant of Polyurethane or Polysulphide –See note 2 of Clause CWD 44.5.3.3(i)	100
			3. Pickle and passivate – See note 4 of Clause CWD 44.5.3.3(i)	
Buried in soil - chamber to coupling	All materials	Coating	Two pack Epoxy plus Tape wrapping system	150 Min. 3 mm double tape wrap

NOTE: Interfaces of different environments shall be protected as per table above; option: Coating 1 or 2.

(b) In Chamber Walls

ENVIRONMENT	MATERIAL	SURFACE	SYSTEM	MINIMUM DFT (µm)
In chamber walls	SS 304 or SS 316	Lining	1. Two pack Epoxy	250
			2. FBE	175
		Coating	1. Two pack Epoxy plus top coat of pure Aliphatic Polyurethane plus sealant of Polyurethane or Polysulphide – See note 2 of Clause CWD 44.5.3.3(i)	150 25
			2. FBE plus top coat of pure Aliphatic Polyurethane plus sealant of Polyurethane or Polysulphide - See note 2 of Clause CWD 44.5.3.3(i)	100 25
Buried in soil - chamber to coupling	All materials	Coating	Two pack Epoxy plus Tape wrapping system	150 Min. 3 mm double tape wrap

(c) Scour-, Ventilation- and Drainage Pipes

ENVIRONMENT	MATERIAL	SURFACE	SYSTEM	MINIMUM DFT (µm)
In concrete	SS 304	Lining and Coating	Two pack Epoxy	150
In atmosphere	SS 304 / 316		Pickle & passivation	
	uPVC			

(d) In Water

ENVIRONMENT	MATERIAL	SURFACE	SYSTEM	MINIMUM DFT (µm)
In water & severe corrosion conditions	SS 304 See note 6 of Clause CWD 44.5.3.3(i)	Lining	1. Two pack Epoxy	250
			2. FBE	150
		Coating	1. Two pack Epoxy	250
			2. FBE	150

(e) Couplings and Adapters

MATERIAL	SURFACE	SYSTEM	MINIMUM DFT (µm)
MS	Lining and Coating	1. Two Pack Epoxy	400
		2. FBE	300
SS 304	Lining and coating	Pickle and passivate – See note 4 of Clause CWD 44.5.3.3(i)	
SS 304 buried	Lining and coating	1. Two pack Epoxy	150
		2. FBE	125

(f) 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 44.5.3.3(i) 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 (Molybdenum disulphide). Bolt heads and nuts to be covered with plastic bolt caps.	45
Tie rods for flanges (only threaded at ends)	MS	HDG complete fastener system, rod only threaded at ends plus FBE coated shank and coated with an approved spray type lubricant (Molybdenum disulphide) on threads prior to assembly. After drying of the spray type lubricant, stud to be covered by Carbomastic 15®.	45 30
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 44.5.3.3(i) plus wet assembly with Epoxy	Uniform cover
Fasteners for flange adaptors –	SS 304	Pickle and passivate - See note 4 of Clause CWD 44.5.3.3(i)	

(g) Coating at Joints

ENVIRONMENT	MATERIAL	SYSTEM	MINIMUM DFT (µm)
Plain ended pipes where couplings or flange adaptors are to be fitted	MS	Same as lining material for 300 mm from end	400
		Two pack Epoxy for cement mortar lining with 100 mm overlap inside and outside	400
Flanges of bitumen wrapped pipes	MS	Same as lining material on top and back of flange with an overlap of 100 mm from the flange	400
		Two pack Epoxy for cement mortar lining with 100 mm overlap inside and outside	400
Flange faces	MS	Two pack Epoxy or FBE	60 - 90
Coupling or flanged joints buried in soil or in wet chambers	MS SS 304 SS 316	Coating system plus Petrolatum wrapping system - refer Section 13 of DWS 9900.	
Welded joints buried in soil and encased in concrete	MS SS 304 SS 316	As specified for lining and coating	

(h) Stainless Steel Items

SURACES	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 44.5.3.3(i)	
3CR12 steel components (Dry conditions only)	Pickle and passivate – See note 4 of Clause CWD 44.5.3.3(i)	

(i) 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 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 44.5.3.4 QUALITY ASSURANCE, INSPECTIONS AND TESTS

Quality assurance and inspections shall be in accordance with this Particular Specification, DWS 1601: GENERAL MECHANICAL SPECIFICATION (Revision 0), STANDARD SPECIFICATION DWS 2020: QUALITY CONTROL SPECIFICATION (October 2001 edition) and as further described hereunder. The Contractor shall compile the Data Book consisting of QCP's (for manufacturing and corrosion protection), material certificates, test certificates, welder qualifications and welding procedures.

CWD 44.5.3.5 Visual Inspection

All finished pipes and specials shall be visually examined and shall be free of injurious defects as defined in API 5L Section 9.10 (44th Edition, October 2007). In addition, fillet welds and welds on specials shall be inspected by the application of a penetrant-dye, in accordance with API 1104, on the inside and outside over 100 % of any specific weld bead to determine if any cracks are present.

This procedure shall also apply to all pipe to pipe flange welds.

CWD 44.5.3.6 Testing of Pipes and Specials

In addition to the requirements of SANS 719, the following requirements shall apply to the testing and inspection of pipes and specials:

(a) Hydraulic pressure tests (pressure resistance and leakage test) shall be carried out on all pipes and specials in order to test the integrity of the material used and of welds. These tests shall take place prior to corrosion protection and concrete encasement. The hydraulic test pressure applicable to all pipes and specials shall be equivalent to 1,5 times the relevant pressure rating, e.g. 900 kPa for 600 kPa rated pipes. This is in accordance with the formula in SANS 719 Sub-clause 5.2.4 using the pressure bearing wall thickness (i.e. 6,4 mm for 10 mm wall thickness on 1800 NB pipes and 3,6 mm for 8 mm wall thickness on 1000 NB pipes obtained from the Barlow Formula). This test pressure shall be maintained for 30 minutes after which visual inspection of all welded seams shall be performed while maintaining the test pressure. The duration of the hydraulic pressure tests may be reduced by the Engineer.

(b) The pressure shall be applied gradually by approved means and maintained without variation sufficiently long for the duration of the inspection. Should leaks appear from any part or any defects of any nature be discovered, the pipe shall be emptied and the defects repaired. The pipe shall then be retested. Should a pipe, after repair, fail to pass the second hydraulic test, the Engineer may order its rejection.

(c) Where possible, specials shall be hydraulically pressure tested in the same way as specified for pipes. Specials and pipe sections that can not be practically hydraulically pressure tested, shall be subjected to 100 % radiographic testing of all the welds not subjected to the hydraulic pressure test of the original pipe.

(d) Specials manufactured completely or partially from plate that has not been subjected to a hydraulic pressure test as described above, shall be hydraulically pressure tested as specified for pipes.

(e) Specials manufactured completely or partially from plate that has not been subjected to a hydraulic pressure test as described above and that can for practical reasons not be subjected to a hydraulic pressure test, shall be subjected to a 100 % radiographic test on all welds. Such items shall however be kept to the minimum.

(f) Circumferential and longitudinal butt welds (only in the event of no hydraulic pressure test being conducted): 100 % of the length of all circumferential butt welds shall be subjected to 100 % radiographic test, provided when consistently acceptable results are obtained, the number of welds to be so tested may be reduced by the Engineer.

(g) Site welds: All site welds shall be subjected to hydraulic pressure testing to 900kPa for a duration as specified in Clause CWD 44.5.3.6 a). Where hydraulic pressure testing is not possible (or at bends that do not cater for hydraulic testing) 100 % radiographic tests shall be performed, provided when consistently acceptable results are obtained, the number of welds to be so tested may be reduced by the Engineer.

(h) The test pressure over any length or section of pipe work being tested, taking possible difference in elevation into account, shall be such that the test pressure at any point along that section does not exceed 900 kPa. Any such conditions shall only be carried out with the written approval of the Engineer.

(i) The integrity of welds on items hydraulically tested in the workshop shall not be questioned during radiographic testing of site welds.

Note that the maximum static pressure in the lowest pipe work due to head of the dam (NOC) is approximately 425 kPa.

All hydraulic pressure tests on pipes and specials shall be conducted in the Manufacturer's Workshop and before the application of any corrosion protection.

Periodic factory inspection, verification and witnessing of tests and inspection of test records may be carried out by the Engineer or an independent Inspectorate appointed by the Engineer.

Tests and inspections shall be carried out at the Manufacturer's Works at the expense of the Contractor (pipe manufacturer) who shall provide all necessary testing facilities, labour instruments, equipment and samples that might be required, free of charge. The Engineer or his representatives shall be afforded every facility during the course of manufacture and testing to enable witnessing and inspections to be carried out effectively.

All test samples shall be selected by the Engineer or his representatives and all instruments used for testing purposes shall be approved by the Engineer or his representatives. If in the opinion of the Engineer or his representatives any instrument should require calibration, such instruments shall be calibrated at the expense of the Contractor by such body as may be approved by the Engineer.

No mechanical re-working or straining of pipes and specials shall be allowed after testing and inspection.

CWD 44.5.3.7 Hydrostatic Field Testing

After complete installation, the Main Contractor shall be responsible to carry out a hydraulic pressure test to ensure that all joints and connections are leak free. This test and allowable leakage shall comply with AWWA M11 Chapter 12, over a test period of minimum two hours after the test pressure has been maintained for a minimum of 24 hours and to a test pressure (i.e. 1,25 x working pressure) of 750 kPa for all 600 kPa rated pipes.

CWD 44.5.3.8 Repair of Injurious Defects

Injurious defects found by non-destructive testing of welds, visual examination, hydrostatic testing or determined by any other means to exceed the limitations in API 5L Section 9.10 (44th Edition, October 2007) and API 1104 Section 9 (20th Edition, November 2005) shall be repaired in accordance with API 1104 Section 10 (20th Edition, November 2005) but subject always to the requirements of this Particular Specification.

The total length of all repairs shall be subjected to hydraulic pressure testing to 900 kPa. Where hydraulic pressure testing is not possible, radiographic tests shall be performed on the total length of all repairs.

CWD 44.5.4 Marking

All pipes and specials shall be clearly marked by welding alongside a longitudinal or spiral weld on one end of the pipe (at least 300mm away from the end) with the following data: Item number and specific range designation number. These numbers must in return reference to the documentation that consists of the following information:

(a) Grade and thickness of material;

(b) Item number of the pipe or special;

(c) Nominal diameter (mm); and

(d) Work pressure (kPa).

(e) Hydraulic test pressure (kPa)

The applicable drilling table shall be stamped or welded on the periphery of all flanges.

The minimum height of welded-on lettering shall be 30 mm. Hard stamping shall be legible after coating.

CWD 44.5.5 Storage, handling and transport

After testing, final inspection and approval the pipes and specials shall be securely packed to prevent any damage in transit. In order to protect the internal coating system the ends of the pipes and specials shall be securely blanked off by sturdy blanks.

The ends of all pipes and specials shall be protected against denting. Pipes shall be transported and stacked in a manner such as to prevent deformation of the pipe body in excess of 2 percent of diameter. Dents causing a protrusion in excess of 3 mm into the interior of the pipe shall result in the pipe being rejected.

Otherwise General Mechanical Specification DWS 1601 –shall apply.

CWD 44.5.6 Installation

The Main Contractor shall be responsible for the complete installation of all the equipment supplied under this Particular Specification. Installation shall be done in accordance with DWS 1110: CONSTRUCTION OF PIPELINES and AWWA Manual M11.

Installation and alignment of bell mouth sections in particular shall be in accordance with the tolerances stated on the Drawing Reg. No. CWD XXXX to ensure accurate installation of the sealing frames around the bell mouths for proper functioning of the emergency gate.

Alignment and reforming of pipe ends at joints for site welding purposes shall be achieved using suitable pipe chain clamps. The *EZPCC/10-72 SS 'E-Z Fit' Pipe Chain Clamp* or equal is recommended. Pipe ends shall be reformed from the inside using suitable spider jacks. Stainless steel contact points and chain shall be used on the pipe clamps and spiders to reduce possible contamination on the stainless steel pipes.

Installation procedures shall include transport from the point of storage at Site to the location of installation of each item, alignment of all pipes and specials according to the Drawings, connecting of flanges and couplings, site welding, field testing and making good of corrosion protection, etc.

Distance pieces (closer pipes) shall be installed in positions reserved for valves. These distance pieces shall be cut to length when installing the valves.

CWD 44.6 TOLERANCES

The Contractor shall refer to the tolerances specified in Clause CWD 44.5.2 and the relevant Drawings.

CWD 44.7 TESTS ON COMPLETION

Tests on Completion of the Works and pipelines shall be carried out in accordance with Clause CWD 44.5.3.7. These tests shall take place as shown in the Main Contractor's Construction Programme. The Main Contractor shall submit to the Engineer for approval a method statement for this procedure and shall be responsible to provide for all the requirements and to carry out the approved procedure.

CWD 44.8 MEASUREMENT AND PAYMENT

CWD 44.8.1 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 Contractor in the pricing as reflected in the Bill of Quantities. No additional cost for any work or requirement in this Specification shall be allowed.

Items are provided for:

- Supply of all pre-manufacture documentation for approval;
- Procurement / manufacture of pipes and specials as indicated in the Bill of Quantities;
- Corrosion protection of pipes and specials as indicated in the Bill of Quantities;
- Delivery of all equipment supplied to Main Contractor's Site store as indicated in the Bill of Quantities;
- Installation and testing of pipes and specials *(to be priced by Main Contractor);*
- Tests on completion *(to be priced by Main Contractor)*;
- Preparation of Operating and Maintenance Manuals and Drawings for the operation of the pipe system, all in accordance with General Mechanical Specification DWS 1601.

CWD 44.8.2 Scheduled Items

CWD 44.8.2.1 Documentation

Separate items are provided in the Bill of Quantities for documentation with regard to the manufacture and supply of the pipes and specials as indicated on the Drawings. Unit : Sum

The rates tendered against the items in the Bill of Quantities shall include full compensation for material schedules and certificates; quality control documentation; programmes of work (manufacture and on-site); and any other work as specified.

CWD 44.8.2.2 Procurement / manufacture, hydraulic pressure testing and supply of pipes and specials.

Separate items are provided for the manufacture and supply of the pipes and specials. Unit : Sum

The rates tendered against the items in the Bill of Quantities shall include for full compensation of all costs incurred in the manufacture, procurement, inspection, testing (also including hydraulic pressure testing), trial erection and dismantling of the specified pipes, specials, bolts, nuts, washers and gaskets and any other work as specified. Payment shall be made per unit. Payment shall only be effected after full compliance of the items with the Specification has been certified by the Engineer.

CWD 44.8.2.3 Corrosion Protection

Separate items are provided for the corrosion protection of the pipes and specials. Unit : Sum

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 pipes, specials, bolts, nuts, washers and gaskets and any other work as specified. Payment will be made per unit. Payment will only be effected after full compliance of the items with the Specification has been certified by the Engineer.

CWD 44.8.2.4 Transport and delivery to Site

Separate items are provided for the delivery of the pipes and specials to Site. Unit : Sum

The rates tendered against the items in the Bill of Quantities shall include for full compensation of all costs incurred in the loading, transport, offloading and all other processes involved with the delivery into storage on Site of the specified pipes, specials, bolts, nuts, washers and gaskets and any other work as specified. Payment shall be made per unit. Payment shall only be effected after full compliance of the items with the Specification has been certified by the Engineer.

CWD 44.8.2.5 Installation and testing of pipes and specials *(to be priced by Main Contractor)*

Separate items are provided for the installation of the pipes and specials. Unit : Sum

The rates tendered against the items in the Bill of Quantities shall include for full compensation of all costs incurred in the taking from the Contractor's Site store, handling, assembly, erection, aligning, welding, inspection, testing, making good corrosion protection of the specified pipes, specials, bolts, nuts, washers and gaskets and any other work as specified. Payment shall only be effected after full compliance of the items with the Specifications has been certified by the Engineer.

CWD 44.8.2.6 Tests on Completion *(to be priced by Main Contractor)*

Separate items are provided for performing Test on Completion. Unit : Sum

Payment will be made for the complete outlet pipe work system, including valves successfully tested before. The rate tendered shall include for full compensation for all Tests on Completion including labour, supervision, materials, tools, instruments, etc., necessary for the testing of the system, remedial work and any other work as specified. All costs incurred in pressure testing and completion testing the system during both pressure testing and flow testing, shall be included in the tendered rate.

ANNEXURE A

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MAY 2014

- **Appendix B: Site installation of pipe – welding & corrosion protection**

OLIFANTS-DOORN WATER RESOURCES PROJECT

RAISING OF CLANWILLIAM DAM

-PIPEWORK-

SITE INSTALLATION OF PIPES – WELDING & CORROSION PROTECTION

water & sanitation
Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

NWRI
Engineering Services

OLIFANTS-DOORN WATER RESOURCES PROJECT

RAISING OF CLANWILLIAM DAM

DOCUMENT CONTROL SHEET

Report no:	20/2/E100-02/C/1/25/1/1/3 (7)
Title:	PIPEWORK
Subtitle:	SITE INSTALLATION OF PIPES – WELDING & CORROSION PROTECTION

9 MAY 2024

Rev No	Date of Issue	Originator		Reviewed by	
		Name	Signature	Name	Signature
0	09/05/2024	JD VAN SCHALKWYK		JS POTGIETER	

APPROVED		
Initials	**Signature**	**DATE**
E Manhimanzi		24/05/2024

1. Scope of Work

The following report contains details, instructions, guidelines and recommendations pertaining to the site installation of the Outlet Works pipes i.e. installation, welding, pressure testing and corrosion protection of stainless steel pipework for the conveyance of water. The Contractor shall provide the Dept. of Water and Sanitation Engineer with a method statement detailing all installation aspects for approval.

This document shall be read in conjunction with Particular Specification CWD 44 and all references therein. Refer to drawing numbers 169318/18ME – 169397/19ME & 175234/17ME – 175251/17ME (CWD 7000 - CWD 7079 & CWD 7270 – CWD 7287).

2. Installation

Horizontal pipework ≥ 600 mm NB are installed on steel trestles and tied down with either steel wire ropes or cargo straps. All pipe connections encased in concrete shall be connected using welding as a joining method. Figure 1 below illustrates 1800-, 1000- and 600 mm NB pipes installed on trestles (located and positioned at pipe ring positions a.k.a. puddle collars) and their individual installed heights above the ground level/ poured concrete level. The trestles are slightly adjustable and provide access to the bottom for welding. Note that the cofferdam pipe trestles (Item 41) differ from the illustrated trestles below. The sequence of installation shall be: pipe placement, alignment, tie-down, welding, pressure testing, corrosion protection and only then can concrete encasement follow.

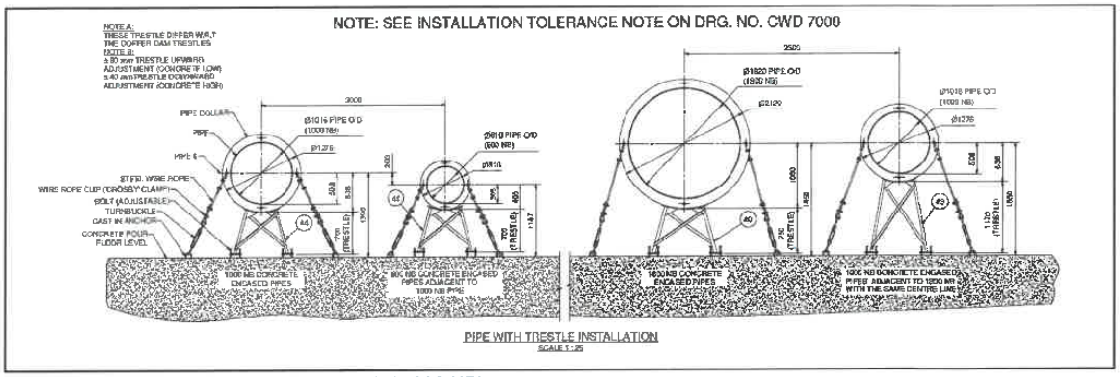


Figure 1: Installation of horizontal pipework (≥ 600 NB)

3. Type of Welds

The welds required are circumferential butt welds on pipe joints in the vertical and horizontal plane (isolated cases of diagonal welds are also present). The parent metal is austenitic stainless steel 304L and also 316L. The abovementioned welding is required for 1800-, 1000- and 600 mm NB pipes with a 10-, 8- and 6 mm wall thickness respectively.

Refer to drawing 169326/13ME (*CWD 7008*) *(Rev 1)* for the weld detail (size, sequence, pipe wall thickness and weld preparation) for 1800 mm NB and 1000 mm NB pipes. Figure 2 below indicates the typical welding of a 1000 mm NB pipe.

Circumferential butt welding in the form of purge welding is required for smaller diameter (i.e. 600 mm NB, 400 mm NB, 300 mm NB, 100 mm NB and 80 mm NB) stainless steel 304L and 316L pipework not accessible from the inside. The welded section may be blanked off at each end using '*vetter bags*' inside the pipe to isolate the inert gas (note Argon has a higher density than that of air). To reduce the use of inert gas, copper backing may be used in 600 mm NB pipes instead of gas purging.

The type, position and size of welds required on site are not necessarily limited to the welds mentioned in this report, but shall comply with CWD 44.

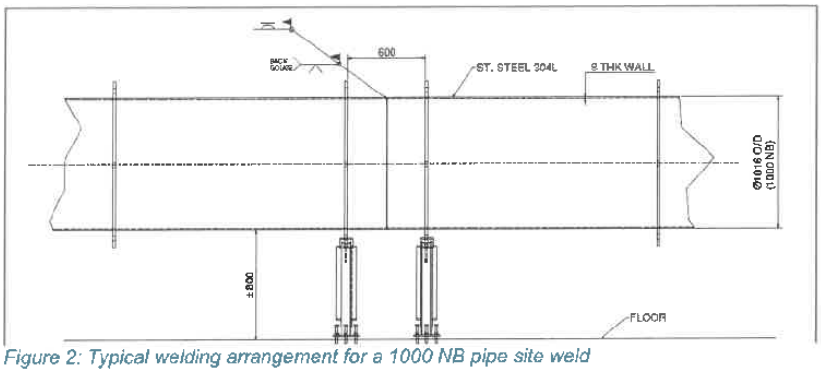


Figure 2: Typical welding arrangement for a 1000 NB pipe site weld

4. Access

Adjacent horizontal pipework shall be supported on trestles ± 700 mm above the concrete floor (refer to drawing 16920/13/ME (CWD 7002) and Figure 2 above). Vertical pipework shall be supported adequately and have suitable access to perform the required welds (i.e. platform or man-cage for the 1800 NB stacks in the intake tower).

No person shall coat or weld inside a pipe with a diameter smaller than 800 mm (Government Gazette No. 37305 dated 7 Feb 2014). Ventilation is required where welding on the inside of the pipe takes place to ensure adherence to the OHS-Act. Pipes smaller than 800 NB shall be blasted and lined using machinery to gain access (limited to ± 20 to 25 m straight sections depending on machinery and contractor).

5. Welder Qualification

All welds and repair welds shall only be undertaken by welders qualified under the latest issue of the ASME "Boiler and Pressure Vessel Code", Section IX for the relevant scope of weld required. The qualified welder is responsible for using the correct welding rod (filler material) and process suitable for the scope of the weld. The scope of the weld is defined as the type of weld, filler material (welding rods), parent material, position, orientation and environment of the weld.

It is recommended that a *Welding Procedure* be qualified at an approved institution for the welding required on site. Copies of all approved *Welding Procedures* and *Welder Qualifications* Certificates shall be submitted to the Engineer of the Directorate: Mechanical and Electrical Engineering. Also refer to the Particular Specifications CWD 44: Pipes and Specials (note sub-section CWD 44.5.1.2 Welding of Pipes and Specials).

Other welding qualifications such as: API 5L (API 1104), AWS B.1.1 or SANS 15614-1:2007 (ISO 15614-1:2004)) may also be accepted if the Engineer approves.

6. Welding Notes

All notes and specifications on drawings pertaining to welding shall be strictly adhered to. A recommendation from the welder is required with regard to the ambient temperature range suitable for welding to obtain the desired welds as required on site. Welding shall not be performed in wet or damp environments or with a wind velocity ≥ 8 km/h at the weld area.

The recommended method of site welding is 'Stick'-welding or 'Flux-core self-shielded (roll)'. *TIG*-welding shall be used for the root run. *MIG*-welding is not a preferred method.

7. Pipe Alignment

Adjacent pipe ends that are to be welded, shall be aligned using the pipe chain clamps. These clamps shall also be used to obtain the desired ovality tolerance and the line-up of adjacent pipe ends that are to be welded together. Refer to the attached pipe chain clamp data sheet. Any other proposed method for the alignment of the pipes shall be described in the method statement for the installation of pipework. This method statement is to be submitted timeously to the Engineer for approval.

8. Pipe Protection

Conveyer belts are to be placed inside pipes to protect the surrounding lining against the movement of personnel and weld spatter. Acceptable methods are required for the protection of the lined and coated pipes. Rejection of equipment due to damage shall severely impact the project program.

9. Testing of Weld Testing

All pipes and specials shall be hydraulically pressure tested to 1.5 x design pressure (i.e 900 kPa for 600kPa rated pipes). Radiographic testing shall only be performed where hydraulic pressure testing is not possible and only with the approval of the Design Engineer. Magnetic particle testing shall not be used due to the low magnetic properties of un-cold worked austenitic stainless steel.

10. Specific Cases

This section describes detailed requirements required for specific cases found on site that may deviate from the normal methodology and general specification/ layout.

10.1 Intake Tower - 400 mm NB Aeration pipes

Installation setup:	Vertical pipes (3 to 6 m segment tied down using cables), concrete encased, 4.78 mm thick stainless steel 316L.
Estimated welds:	± 28 off
Connection:	Purge welded (with Inert gas). Welding from the outside only (no access to the inside).
Corrosion protection:	Grit blasting, coating and lining of ± 300 mm long uncoated segments on the outside, and with the use of suitable equipment to gain access, to the inside of the pipes. It is recommended that only after complete installation of all connecting 400 mm NB vertically installed straight pipes (i.e. welding, testing, coating of outside and concrete encasement) that the lining of uncoated segments on the inside is applied.
Test method:	Visual inspection, with NDT (Dye-penetrant testing) upon request of the Engineer prior to encasement.

Inspection of Lining: To be performed by a video camera.

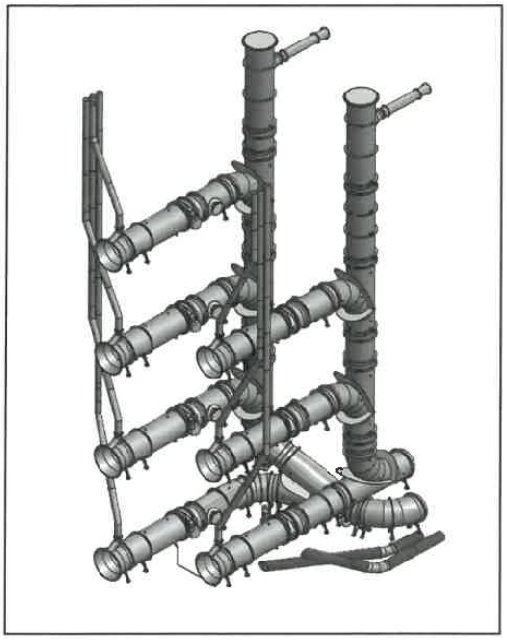


Figure 3: Intake tower pipework

10.2 Intake Tower – 1800 mm NB Vertical Stacks

Installation setup:	Vertical pipes (± 6 m segments tied down using cables), concrete encased, 10 mm thick stainless steel 304L.
Estimated welds:	± 14 off.
Connection:	Welded inside and outside. Access platform and/or man-cage required to perform inside welding.
Corrosion protection:	Grit blasting, coating and lining of ± 300 mm long uncoated segments on the inside and outside. It is recommended that only after complete installation of all 1800 mm NB pipes (i.e. welding, hydraulic testing, coating of outside and concrete encasement) that the lining of uncoated segments on the inside is applied.
Test method:	Hydraulic pressure testing.
Inspection of Lining:	Visual + DFT compliance.

10.3 Drainage pipes - 300 NB

Installation setup:	Horizontally laid pipes (± 6 m segments tied down), concrete encased, 4,57 mm thick stainless steel 316L.
Estimated welds:	Left bank 6 off, right bank 1 off.
Connection:	Purge welded (with Inert gas). Welding from the outside only (no access to the inside).
Corrosion protection:	Grit blasted, lining & coating of ± 300 mm long uncoated segments using equipment to gain access.
Test method:	Hydraulic pressure testing.
Inspection of Lining:	To be performed by a video camera.

10.4 Gallery Air & Wash Water Pipes (80 NB)

Pressure rating:	16 bar
Installation setup:	Horizontal, vertical & diagonal laid pipes (± 6 m sections), concrete encased, 3,05 mm thick stainless steel 304L.
Estimated welds:	± 100 off.
Connection:	Purge welded (with Inert gas). Welding from the outside only (no access to the inside).
Corrosion protection:	Lining: Un-lined and not pickled and passivated. Coating: pickle and passivate only.
Test method:	Hydraulic pressure testing prior to encasement (Blanking-off method to be supplied by the Main Contractor). Final hydraulic pressure testing of the complete system after complete installation and concrete encasement.

11. Weld Locations

The following table indicates the approximate number of welds for each pipe size as well as the location of these welds. Figure 4 displays the pressure testing sections and the color-coding used in Table 1.

Table 1: Weld Quantities

	Weld Quantities -Summary of Main Pipes							
	Colour Designation	1800 NB	1000 NB	600 NB	400 NB	300 NB	100 NB	80 NB
Cofferdam	Pink	2	—	—	—	—	—	—
Intake tower	Yellow	24	—	2	28	—	1	—
Tunnel	Maroon	10	—	—	—	—	—	—
Tunnel end to hydro-electric powerplant	Light Blue	27	—	—	—	6	—	—
Tunnel end to river outlet	Army Green	10	2	—	—	1	—	—
Left bank off-take chamber to the left-hand side of overspill	Pink & Green	—	22	—	—	—	—	—
Overspill & gallery	Blue	—	22	—	—	—	—	100
Right-hand side of overspill to right-hand side cross-over	Red	—	13	—	—	—	—	—
Right-hand side Cross-over	Purple	—	2	—	—	1	—	—
Right-hand side cross-over to canal outlet	Orange	—	19	—	—		—	—
River extension	N/A	—	—	—	—	—	—	—
	Total:	73	79	2	28	8	1	100

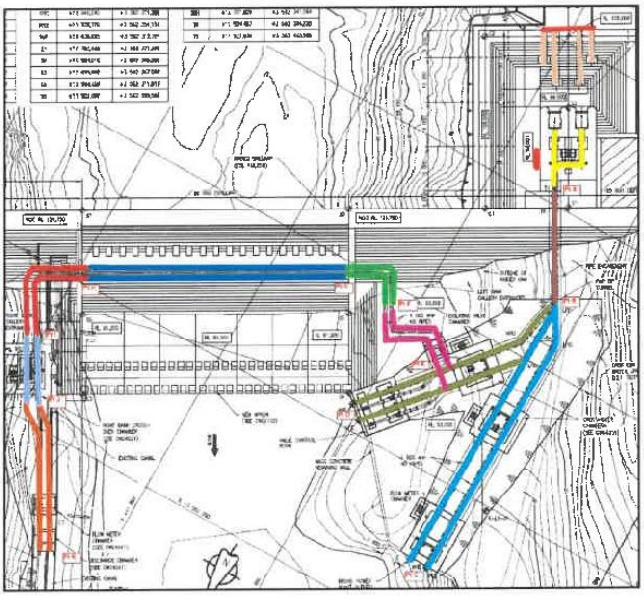


Figure 4: Colour designations of test sections

12. Coating system

The latest version of DWS 9900 shall be used for the corrosion protection of the site welds to coating thicknesses as per CWD 44. Only stainless steel-, glass- and aluminium oxide grit are to be used when blasting stainless steel. Garnet (contains ferrous salts) or platinum slag shall not be used. Grit shall also not be reused when blasting stainless steel during the final blast.

DWS 9900: STANDARD SPECIFICATION: CORROSION PROTECTION
C3. CORROSION PROTECTION OF VALVES, FLOWMETERS AND OUTLET PIPES

6.4.2 ENCASED IN CONCRETE

ENVIRONMENT	MATERIAL	SURFACE	SYSTEM	MINIMUM DFT (µm)
Encased in concrete	3CR12 (See note 9) MS (See note 10)	Lining	1. Two pack Epoxy	400
			2. FBE	300
			3. Elastoplastic Polyurethane	2 mm
	3CR12	Coating	1. Two pack Epoxy	250
			2. FBE	200
	MS	Coating	1. Two pack Epoxy	300
			2. FBE	250
	SS 304 or SS 316 See note 6	Lining	1. Two pack Epoxy	250
			2. FBE	175
			3. Elastoplastic Polyurethane	1 mm
		Coating	1. Two pack Epoxy plus sealant of Polyurethane or Polysulphide – See note 2	150
			2. FBE plus sealant of Polyurethane or Polysulphide - See note 2	100
			3. Pickle and passivate – See note 3	

Figure 5: Corrosion protection of encased pipes

Annexure

- Reference to latest version: Drawing 169324/13ME (CWD 7006) - General assembly
- Reference to latest version: Drawing 169320/13ME (CWD 7002) - Installation tolerance guide
- Reference to latest version: Drawing 169326/13ME (CWD 7008) - Detail of Site welded joint.
- Pipe chain clamp datasheet.
- Sketch D: Concrete pour levels that were used for design of pipe work in the intake tower.

'E-Z FIT' PIPE CHAIN CLAMPS

Heavy Duty Alignment and reforming clamps for Pipe and Vessels.

RANGE: 1"-72"

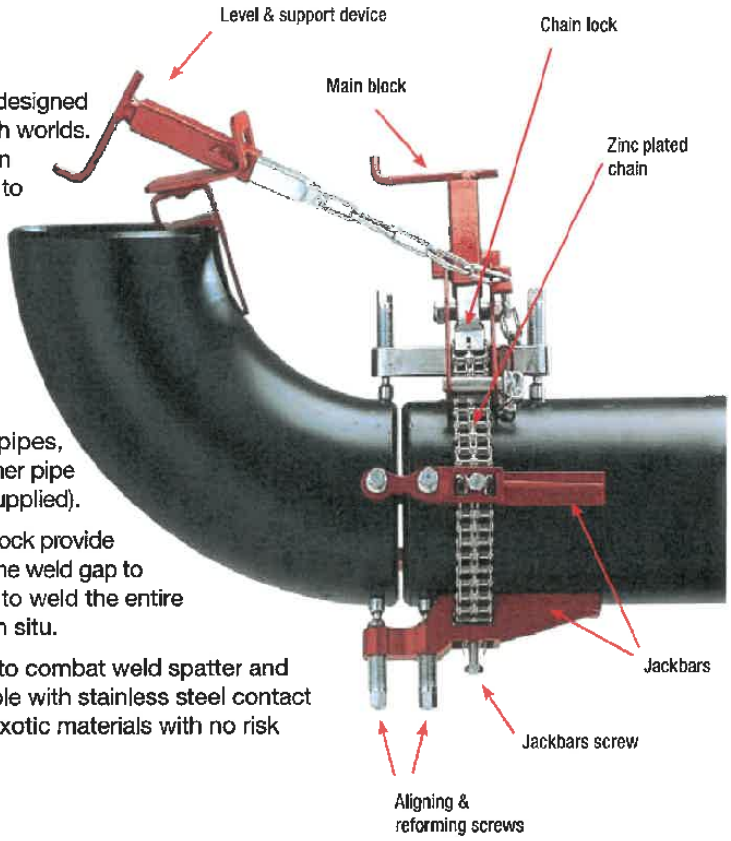
Our 'E-Z Fit' Pipe Chain Clamps have been designed to offer the welder/ pipe fitter the best of both worlds. A robust pipe clamp with the strength to align and reform, that is also lightweight and easy to operate.

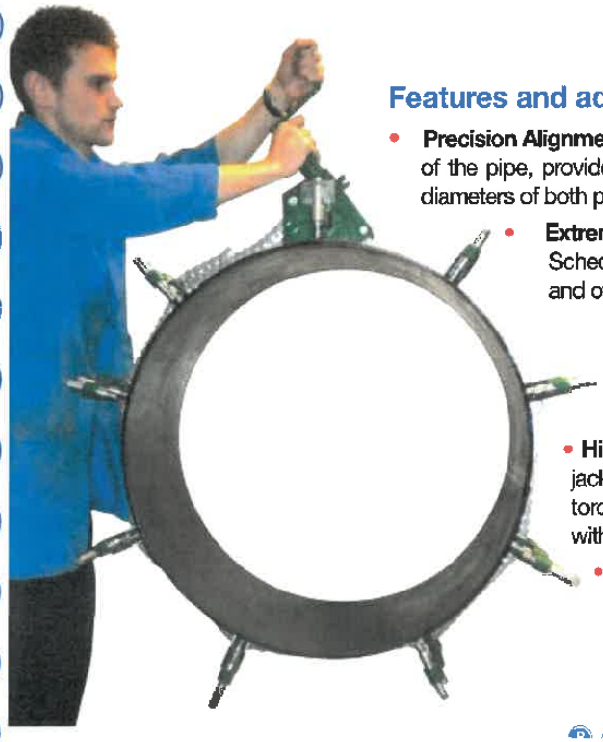
Traditional methods for aligning heavy wall pipe, such as ratchet cable pullers, lugs and bottle jacks are time consuming and inconsistent in the results they achieve, making them unsuitable for the majority of critical alignment applications.

One clamp can fit up a variety of sizes of pipes, elbows, tees, flanges end caps and most other pipe fittings (using the level and support device supplied).

The heavy duty high rise Jackbars and main block provide the strength to reform the pipe either side of the weld gap to eliminate "Hi-Lo", whilst enabling the welder to weld the entire circumference of the pipe with the clamp in situ.

Our chain and screws are zinc passivated, to combat weld spatter and corrosion. All E-Z Chain Clamps are available with stainless steel contact points and chain to enable the welding of exotic materials with no risk of contamination.



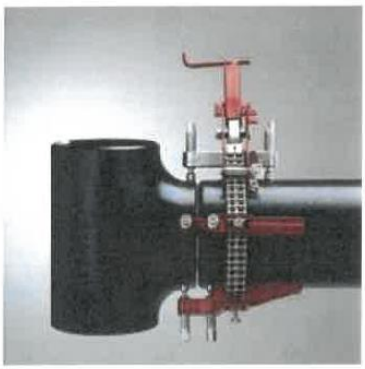


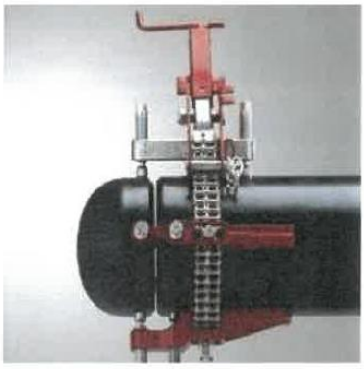
Features and advantages:

- **Precision Alignment** – The double jackbars, spaced around the outside diameter of the pipe, provide concise alignment and reforming of the internal or external diameters of both pipes within 0.5mm.
- **Extremely Tough** – Reforms pipes on both sides of the weld joint to Schedule 40 pipe and aligns any wall schedule of pipe, elbows, tees and other fittings.
- **Adaptable** – The Chain Clamp can be used to align, and reform elbows, tees and other fittings that a cage clamp can not manage. One Chain Clamp covers the range of eight (8) cage clamps
- **High Rise Independent Jackbars** – Double jackscrew 'high rise' jackbars have extra clearance enabling easy access with welding torch/rod. Each Jackscrew has independently pivoting feet to cope with uneven surfaces.
- **Safe** – Elbows, tees and other fittings can be held safely and securely in place during alignment with the level and support device.

'E-Z Fit' Pipe chain clamp versatility

Some examples of fit-ups with the 'E-Z Fit' Pipe Chain Clamp. Each clamp is supplied with all accessories to carry out any fit-up and includes a steel storage box

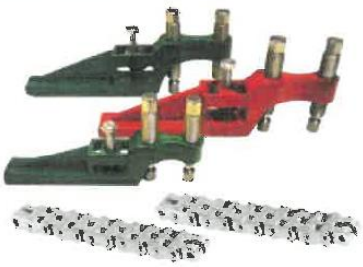




Our jackbars are cast from the highest quality alloy steels Lightweight design and construction make them strong and durable yet user-friendly. All jackbars have two aligning screws allowing reforming pressure to be applied to both pieces of pipe.

Additional jackbars can be used if extra pressure is required between the standard jackbars. The jackscrew pads independently pivot to handle uneven surfaces.

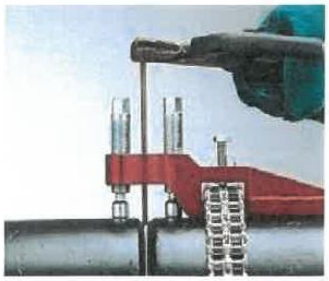
Spacing screws can also be added for precise weld gap adjustment.



Standard or heavy duty chain is available according to reforming requirements

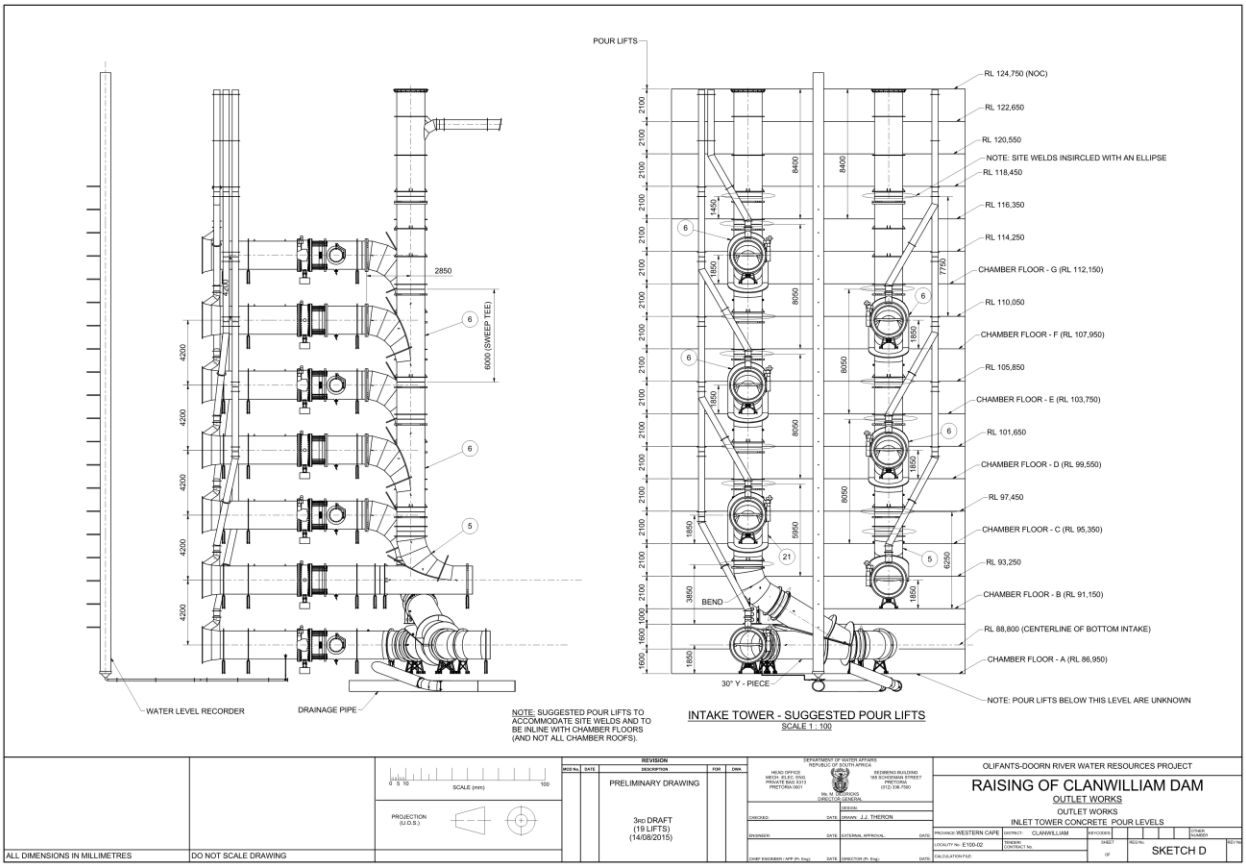
'E-Z Fit' Pipe Chain Clamps Include:

- Length of chain required for the pipe range
- Double jackscrew jackbars listed for the pipe range
- Main block
- Fine adjustment
- Level and support device
- Jackscrew wrench
- Parts and operating manual
- Metal Storage box



The jackbars are designed to allow clearance around the pipe for any welding torch or rod.

PART No.	PIPE DIAMETER RANGE "/MM	NO. OF JACKBARS	REFORMS PIPE TO SCHEDULE	CLAMP WEIGHT KG	SHIPPING WEIGHT KG / LBS
EZPCC/1-8	1-8 / 25-203	3	40	9 / 20	12 / 27
EZPCC/1-8 SS	1-8 / 25-203	3	40	9 / 20	12 / 27
EZPCC/4-20	4-20 / 102-500	7	40	25 / 55	33 / 72
EZPCC/4-20 SS	4-20 / 102-500	7	40	25 / 55	33 / 72
EZPCC/10-36	10-36 / 254-914	8	40	35 / 77	67 / 144
EZPCC/10-36 SS	10-36 / 254-914	8	40	35 / 77	67 / 144
EZPCC/10-54	10-54 / 254-1372	13	40	45 / 99	82 / 180
EZPCC/10-54 SS	10-54 / 254-1372	13	40	45 / 99	82 / 180
EZPCC/10-72	10-72 / 254-1829	16	40	55 / 122	90 / 199
EZPCC/10-72 SS	10-72 / 254-1829	16	40	55 / 122	90 / 199



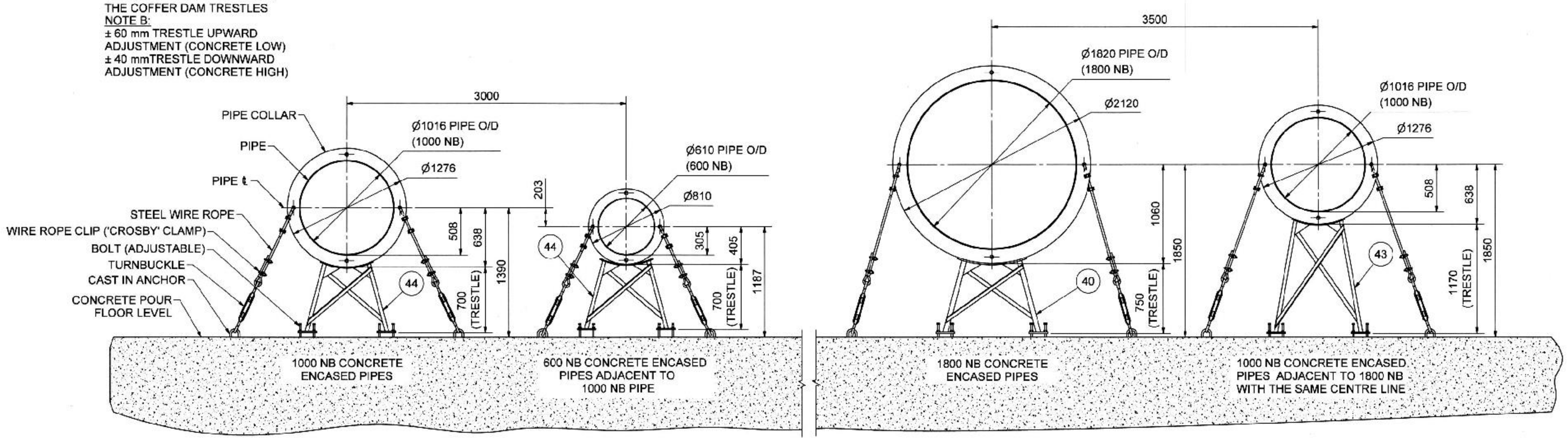
		SCALE (mm) 0 5 10 100	REVISION: MOD No. / DATE / DESCRIPTION / FOR / DWN	PRELIMINARY DRAWING	DEPARTMENT OF WATER AFFAIRS, REPUBLIC OF SOUTH AFRICA	OLIFANTS-DOORN RIVER WATER RESOURCES PROJECT
		PROJECTION (U.O.S.)		3rd DRAFT (19 LIFTS) (14/08/2015)	DESIGN: CHECKED: DATE: DRAWN: J.J. THERON; ENGINEER: DATE: EXTERNAL APPROVAL: DATE:	RAISING OF CLANWILLIAM DAM; OUTLET WORKS; OUTLET WORKS; INLET TOWER CONCRETE POUR LEVELS
ALL DIMENSIONS IN MILLIMETRES	DO NOT SCALE DRAWING				PROVINCE: WESTERN CAPE; DISTRICT: CLANWILLIAM; LOCALITY No: E100-02; TENDER/ CONTRACT No.; CALCULATION FILE:	SHEET OF; DRG No.: SKETCH D

- **Appendix C: Pipe assembly drawing**
    - **CWD 7002**
    - **CWD 7006**
    - **CWD 7008**
    - **CWD 7028**
    - **CWD 7038**
    - **CWD 7049**
    - **CWD 7053**

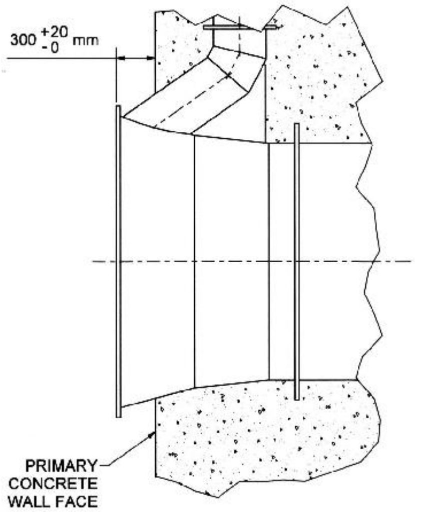
GUIDE FOR PIPE INSTALLATION TOLERANCES

NOTE: SEE INSTALLATION TOLERANCE NOTE ON DRG. NO. CWD 7000

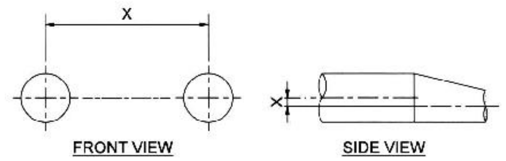
NOTE A:
THESE TRESTLE DIFFER W.R.T
THE COFFER DAM TRESTLES
NOTE B:
± 60 mm TRESTLE UPWARD
ADJUSTMENT (CONCRETE LOW)
± 40 mmTRESTLE DOWNWARD
ADJUSTMENT (CONCRETE HIGH)



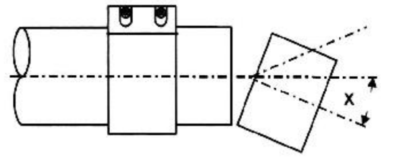
PIPE WITH TRESTLE INSTALLATION
SCALE 1 : 25



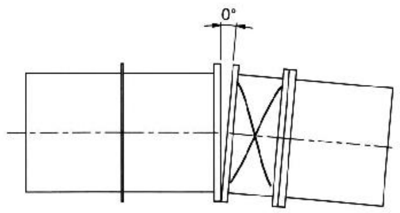
PROJECTION OF BELLMOUTH
SCALE 1 : 25



HORIZONTAL AND VERTICAL
ALLIGNMENT TOLERANCE: 3 - 5 mm

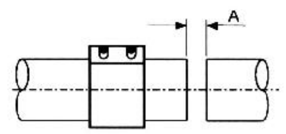


ANGULAR DEFLECTION IN ANY DIRECTION OF PIPE ENDS IN
FLEXIBLE COUPLINGS: < 1500 NB = 2°, ≥ 1500 NB = 1°



VALVE FLANGES SHALL BE ALIGNED
EXACTLY WITH THE PIPES:
(NO MISSALIGNMENT OR GAPS TO BE TAKEN UP AT THE VALVE TO PIPE JOINTING)

COUPLING WIDTH (mm)	A - GAPS SPECIFIED (mm)	
	NO INTERNAL BAND	WITH INTERNAL BAND
95	5	15
140	10	15
200	15	15



GAPS SPECIFIED FOR FLEXIBLE PIPE COUPLINGS: ± 5mm TOLERANCE

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
FLATNESS TOLERANCE: 3 mm/m WIDE
OVALITY TOLERANCE: ± 6 mm DEVIATION ON DIAMETER OF PIPE ENDS.
OUTSIDE DIAMETER TOLERANCE: ± 1,6 mm USING A DIAMETER TAPE OVER A DISTANCE OF 150 mm FROM THE PIPE END.
PIPE END ROOT FACE SHALL NOT DEVIATE FROM SQUARENESS TO THE PIPE AXIS BY MORE THAN 3 mm.

ALL DIMENSIONS IN MILLIMETRES | DO NOT SCALE DRAWING | ROUND ALL EDGES TO A 2 mm RADIUS

SCALE (mm) 0 5 10 … 100

PROJECTION (U.O.S.)

REVISION

MOD No.	DATE	DESCRIPTION	FOR	DWA
0	06/16	ISSUED FOR CONSTRUCTION		
1	10/16	ITEM NUMBER BALLOONS ADDED		

DEPARTMENT OF WATER AND SANITATION
REPUBLIC OF SOUTH AFRICA
HEAD OFFICE
MECH. /ELEC. ENG.
PRIVATE BAG X313
PRETORIA 0001
SEDIBENG BUILDING
185 FRANCIS BAARD STREET
PRETORIA
(012) 336-7500
Mr. A. SINGH
Acting DIRECTOR GENERAL

CHECKED: 30/9/2016 DATE | DESIGN: J.J THERON | DRAWN: J.J THERON
ENGINEER: 30/9/2016 DATE | EXT. APPROVAL / DESIGN CHECKED: 14/10/2016 DATE
CHIEF ENGINEER / APP (Pr. Eng): 16/01/2017 DATE | DIRECTOR (Pr. Eng): 21/10/2016 DATE

OLIFANTS-DOORN RIVER WATER RESOURCE PROJECT

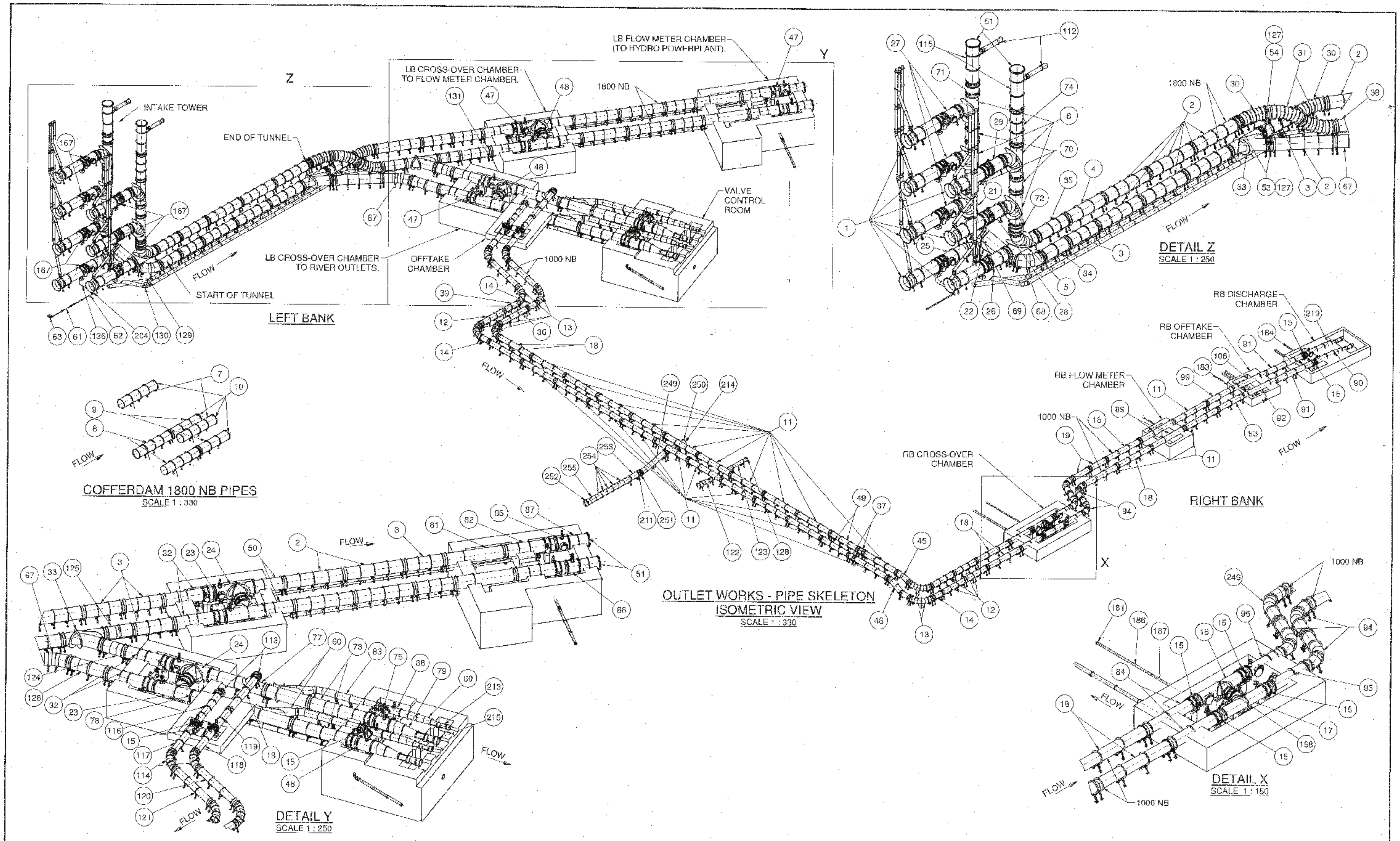
RAISING OF CLANWILLIAM DAM

OUTLET WORKS

PIPES & SPECIALS

-INSTALLATION TOLERANCE GUIDE-

PROVINCE: WESTERN CAPE | DISTRICT: CLANWILLIAM | KEYCODES: OUW INN PIA DET | OTHER NUMBER: CWD 7002
LOCALITY No.: E100-02 | TENDER/CONTRACT No.: | SHEET: 3 OF | REG No.: 169320/13 ME | REV No: 1
CALCULATION FILE: ME/E100-02



GENERAL NOTES:

EXTRA LENGTH / MAKE-UP PIECES:
- ITEM 33 - (200 mm UPSTREAM)
- ITEM 30 - (200 mm UPSTREAM)
- ALL CLOSER PIPES (ITEM 47, 48, 167, 15 & 168)
- ITEM 111 - (250 mm UPSTREAM OR DOWNSTREAM)
- ITEM 120 & 121 - (± 50 mm UPSTREAM)
- ITEM 77 - ON OFFTAKE

SPARE ITEMS:
- ITEM 133 (1800 NB)
- ITEM 134 (1000 NB)

CONCRETE DETAILS:
- CONCRETE BETWEEN CHAMBERS OMITTED FOR CLARITY & SIMPLIFICATION PURPOSES.

DRAWING LEVEL OF DETAIL:
THIS DRAWING ONLY INDICATES THE MAIN PIPE ITEMS.

SCALE (mm) 0 5 0 100

PROJECTION (U.O.S.)

ALL DIMENSIONS IN MILLIMETRES

DO NOT SCALE DRAWING

REVISION				
MOD No.	DATE	DESCRIPTION	FOR	DWA
0	12/...	ISSUED FOR CONSTRUCTION		

DEPARTMENT OF WATER AND SANITATION
REPUBLIC OF SOUTH AFRICA
HEAD OFFICE MECH./ELEC. ENG. PRIVATE BAG X313 PRETORIA 0001
SEDIBENG BUILDING 185 FRANCIS BAARD STREET PRETORIA (012) 336-7500
DIRECTOR GENERAL

DESIGN: J.J THERON
DRAWN: J.J THERON

OLIFANTS-DOORN RIVER WATER RESOURCE PROJECT

RAISING OF CLANWILLIAM DAM

OUTLET WORKS

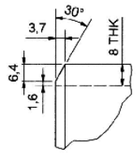
PIPES & SPECIALS
-GENERAL ARRANGEMENT & ISOMETRIC LAYOUT-

PROVINCE: WESTERN CAPE | DISTRICT: CLANWILLIAM | KEYCODES: OUW ASD GAR | OTHER NUMBER: CWE 7008

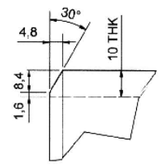
AUTHORITY No. F100-02 | CONTRACT No.

CALCULATION FILE: ME/E100 02

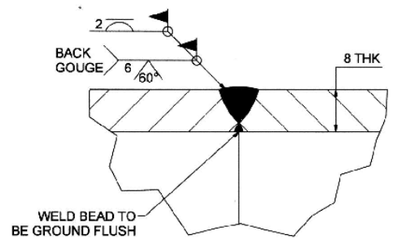
SHEET 7 OF 92 | DWG No. 169324/13 ME | REV No. 0



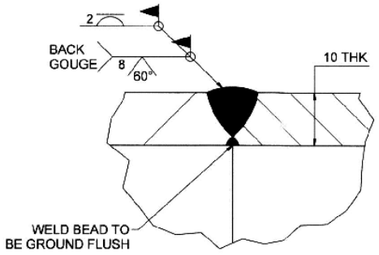
TYPICAL DETAIL OF
WELD PREPARATION
FOR 1000 NB PIPE
SCALE 1 : 1



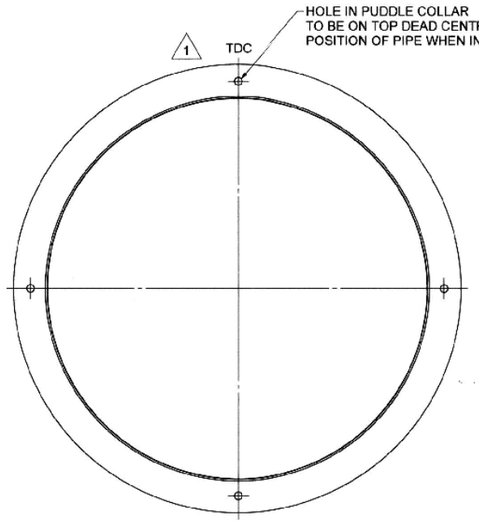
TYPICAL DETAIL OF
WELD PREPARATION
FOR 1800 NB PIPE
SCALE 1 : 1



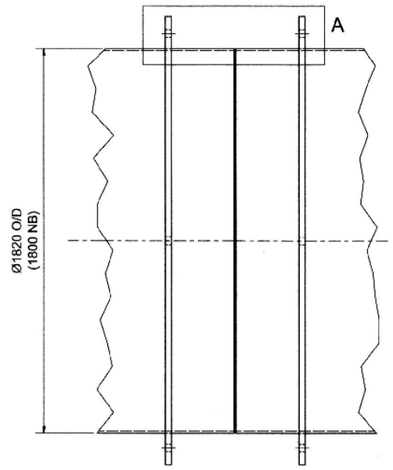
DETAIL 'C'
CIRCUMFERENCIAL WELD DETAIL
OF TWO 1000 NB PLANE ENDED PIPES
SCALE 2 : 1



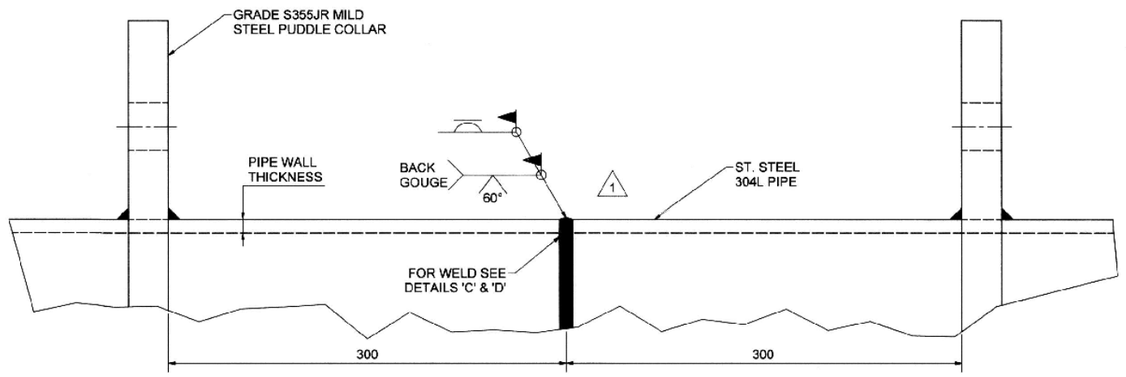
DETAIL 'D'
CIRCUMFERENCIAL WELD DETAIL
OF TWO 1800 NB PLAIN ENDED PIPES
SCALE 2 : 1



1800 NB PIPE SIDE VIEW
SCALE 1 : 12.5



DETAIL 'B'
1800 NB PIPE END JOINT
(SIMILAR FOR 1000 NB)
SCALE 1 : 12.5



DETAIL 'A'
1800 NB & 1000 NB PIPE-END
JOINING WELD (REFER TO DETAL 'C' & 'D')
SCALE 1 : 2

INSTALLATION:
- ADJACENT PIPE ENDS TO BE JOINED BY SITE WELDING TO BE ALIGNED AND REFORMED USING AN APPROPRIATE PIPE CHAIN CLAMP (AND SPIDER JACK) PRIOR TO SITE WELDING TO ENSURE ACCEPTABLE OVALITY AND DIAMETER TOLERANCES.

GENERAL WELDING NOTES:
- PERFORM NECESSARY WELD PREPARATION AS PER DETAIL.
- IDENTICAL WELDS SYMBOLISED ONCE ONLY.
- ALL WELDS SHALL BE CONTINUOUS FULL PENETRATION WELDS. REMOVE WELD SPATTER.
- WELDERS SHALL BE CERTIFIED (IN ACCORDANCE WITH ASME IX) FOR PIPE WELDING FOR THE RELEVANT SCOPE OF WELDS SPECIFIED.
- FLANGES TO BE WELDED ON PIPES IN ACCORDANCE WITH B.S. 806 TYPE 6.

PIPES AND SPECIALS: PRESSURE RATING
- WORKING PRESSURE: 600 kPa
- TEST PRESSURE: 900 kPa

TESTING OF PIPES AND SPECIALS:
- ALL PIPES AND SPECIALS SHALL BE HYDRAULICALLY PRESSURE TESTED TO 900 kPa PRIOR TO CORROSION PROTECTION. RADIOGRAPHIC TESTING SHALL BE PERFORMED WHERE HYDRAULIC PRESSURE TESTING IS NOT POSSIBLE.

GENERAL MANUFACTURING NOTES:
- HOLES IN PUDDLE COLLARS MUST ALIGN.
- PIPE MANUFACTURING, TOLERANCES AND WELDING SHALL BE IN ACCORDANCE WITH SANS 719.
- FABRICATION TO BE IN ACCORDANCE WITH PARTICULAR SPECIFICATION CWD 44 - PIPES AND SPECIALS.
- ROUND ALL EDGES TO A 2 mm RADIUS.

MATERIAL
- PIPE BARRELS TO BE ST. STEEL GRADE 304L UNLESS OTHERWISE STATED ON DETAIL.
- ALL FLANGES, COLLARS, RINGS AND GUSSETS SHALL BE MILD STEEL UNLESS OTHERWISE STATED.
- MILD STEEL TO BE IN ACCORDANCE WITH SANS 50025/EN 10025 GRADE S355JR OR SANS 1431 GRADE 350WA.

1

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
FLATNESS TOLERANCE:	3 mm/m WIDE

OVALITY TOLERANCE: ±6 mm DEVIATION ON DIAMETER OF PIPE ENDS.
OUTSIDE DIAMETER TOLERANCE: ±1,6 mm USING A DIAMETER TAPE OVER A DISTANCE OF 150 mm FROM THE PIPE END.
PIPE END ROOT FACE SHALL NOT DEVIATE FROM SQUARENESS TO THE PIPE AXIS BY MORE THAN 3 mm.

ALL DIMENSIONS IN MILLIMETRES

CORROSION PROTECTION NOTES:
- IN ACCORDANCE WITH DWA STANDARD SPECIFICATION DWS 9900.
- PIPE COATING: APPLY TWO PACK EPOXY (150 µm DFT).
- PIPE LINING: APPLY TWO PACK EPOXY (250 µm DFT).
- PUDDLE COLLAR COATING: TWO PACK EPOXY (300 µm DFT).
- AREA 270 mm FROM PIPE ENDS TO BE UNCOATED TO PERFORM SITE WELDS (THIS EXCLUDES ENDS WITH FLANGES; ONLY OPEN ENDED PIPES TO BE SITE WELDED APPLY)
- COATING AND LINING TO BE APPLIED AFTER PERFORMING SITE WELDS SHALL FULLY COMPLY WITH DWA STANDARD SPECIFICATION DWS 9900.

DO NOT SCALE DRAWING

0 5 10 SCALE (mm) 100

PROJECTION (U.O.S.)

REMOVE ALL SHARP EDGES

REVISION

MOD No.	DATE	DESCRIPTION	FOR	DWA
0	01/14	ISSUED FOR CONSTRUCTION.		
1	08/15	LOCATING LUGS AND NOTES PERTAINING TO LUGS REMOVED. TOLERANCES AN NOTES UPDATED		

DEPARTMENT OF WATER AND SANITATION
REPUBLIC OF SOUTH AFRICA
HEAD OFFICE
MECH.-ELEC. ENG.
PRIVATE BAG X313
PRETORIA 0001
SEDIBENG BUILDING
185 SCHOEMAN STREET
PRETORIA
(012) 336-7500
Ms. M. DIEDRICKS
DIRECTOR GENERAL

CHECKED: DATE: 3/3/2016 DESIGN: J.J. THERON
DRAWN: J.J. THERON
ENGINEER: DATE: 3/3/2016
EX DP APPROVAL / DESIGN CHECKED: DATE: 29/02/2016
CHIEF ENGINEER / APD (Pr. Eng): DATE:
DIRECTOR (Pr. Eng): DATE: 30.03.2016

OLIFANTS-DOORN RIVER WATER RESOURCE PROJECT

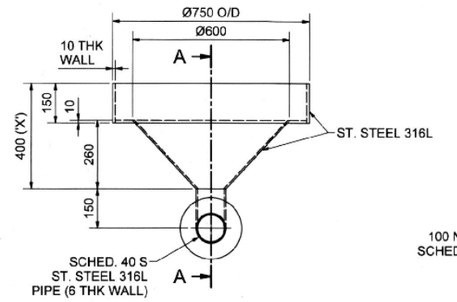
RAISING OF CLANWILLIAM DAM

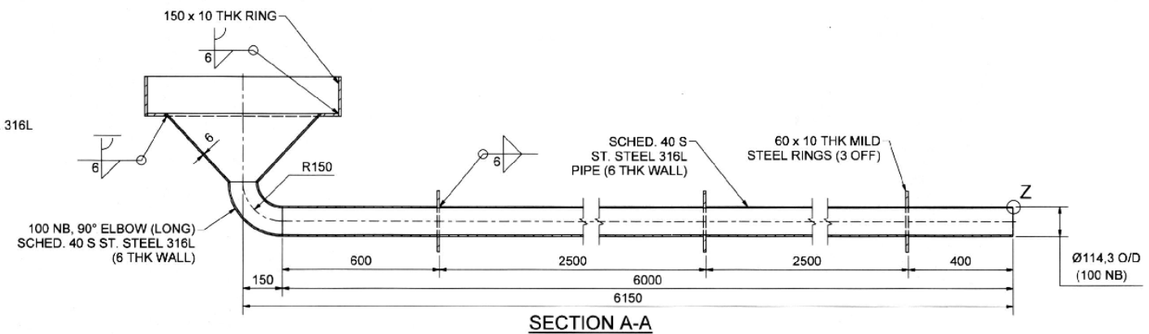
OUTLET WORKS

1800 NB & 1000 NB PIPES

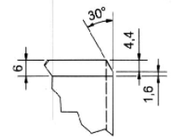
-DETAIL OF SITE WELDED JOINT-

PROVINCE: WESTERN CAPE | DISTRICT: CLANWILLIAM | KEYCODES: OUW | PIP | DET | | | OTHER NUMBER: CWD 7008
LOCALITY No.: E100-02 | TENDER/CONTRACT No.:
CALCULATION FILE: ME/E100-02
SHEET: 9 OF | REG No.: 169326/13 ME | REV No.: 1



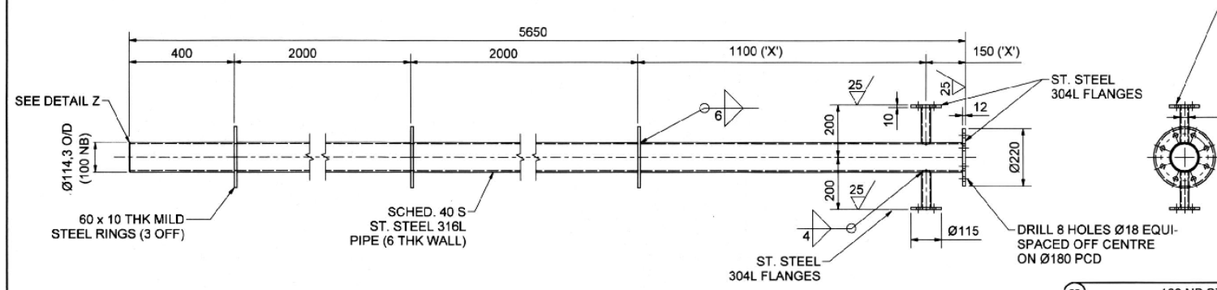


SECTION A-A
SCALE 1 : 10

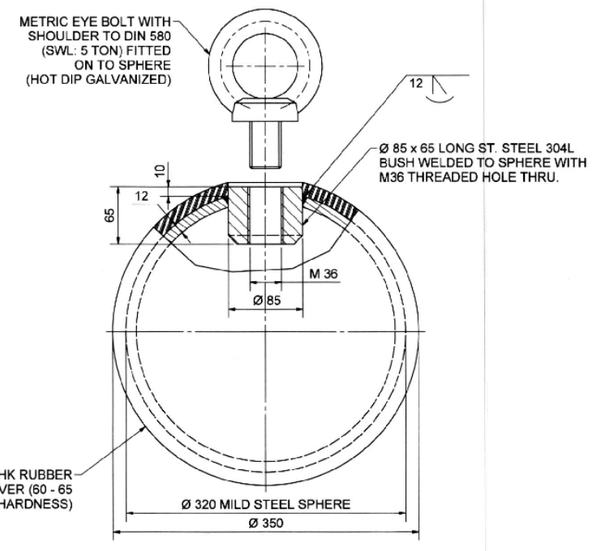


DETAIL Z
TYP. DETAIL OF WELD PREPERATION FOR A 100 NB PIPE
SCALE 1 : 1

(61) WATER LEVEL RECODER REDUCER			
MATL. : MILD & ST. STEEL		MASS :	170 kg
NO. OFF : 1		SCALE :	1:10



(62) 100 NB STRAIGHT PIPE			
MATL. : MILD & ST. STEEL		MASS :	100 kg
NO. OFF : 1		SCALE :	1:10



GENERAL WELDING NOTES:
- PERFORM NECESSARY WELD PREPARATION.
- IDENTICAL WELDS SYMBOLISED ONCE ONLY.
- ALL WELDS SHALL BE CONTINUOUS FULL PENETRATION WELDS. REMOVE WELD SPATTER.
- WELDERS SHALL BE CERTIFIED IN ACCORDANCE WITH ASME IX FOR THE RELEVANT SCOPE OF WELDS SPECIFIED.
- FLANGES TO BE WELDED ON PIPES IN ACCORDANCE WITH B.S. 806 TYPE 6.

GENERAL MANUFACTURING NOTES:
- HOLES IN PUDDLE COLLARS MUST ALLIGN.
- PIPE MANUFACTURING AND TOLERANCES SHALL BE IN ACCORDANCE WITH SANS 719.
- FABRICATION TO BE IN ACCORDANCE WITH PARTICULAR SPECIFICATION CWD 44 - PIPES AND SPECIALS.

FLANGES:
- ALL FLANGES SHALL BE FLAT FACED WITH A GRAMOPHONE FINISH.
- ALL FLANGES, EXCLUDING 1800 NB, SHALL BE IN ACCORDANCE WITH SANS 1123 TABLE 1000/3.
- 1800 NB FLANGES: OD, PCD, HOLE DIA AND NO-OFF BOLT HOLES TO BE IN ACCORDANCE WITH SANS 1123 TABLE 1000/1B.
- FLANGE THICKNESS AS PER DRAWING DETAIL.

MATERIAL
- PIPE BARRELS TO BE ST. STEEL GRADE 304L UNLESS OTHERWISE STATED.
- ALL FLANGES, COLLARS, CROTCH PLATE REINFORCEMENT, GUSSETS AND RINGS SHALL BE MILD STEEL (U.O.S).
- MILD STEEL TO BE IN ACCORDANCE WITH SANS 50025/EN 10025 GRADE S355JR OR SANS 1431 GRADE 350WA.

PIPES AND SPECIALS: PRESSURE RATING
- WORKING PRESSURE: 600 kPa
- HYDRAULIC TEST PRESSURE: 900 kPa

TESTING OF PIPES AND SPECIALS:
ALL PIPES AND SPECIALS SHALL BE HYDRAULICALLY PRESSURE TESTED TO 900 kPa. RADIOGRAPHIC TESTING SHALL BE PERFORMED WHERE HYDRAULIC PRESSURE TESTING IS NOT POSSIBLE.

SURFACE FINISH (REMOVAL OF MATERIAL): X = SURFACE ROUGHNESS IN MICROMETRES

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

OVALITY TOLERANCE: ± 1 mm DEVIATION ON DIAMETER OF PIPE ENDS (FOR 100 NB).
OUTSIDE DIAMETER TOLERANCE: +1,6 -0,8 (FOR ≤ 250 NB PIPES) USING A DIAMETER TAPE OVER A DISTANCE OF 150 mm FROM THE PIPE END.
PIPE END ROOT FACE SHALL NOT DEVIATE FROM SQUARENESS TO THE PIPE AXIS BY MORE THAN 1,5 mm (≤ 500 NB PIPES).

ALL DIMENSIONS IN MILLIMETRES

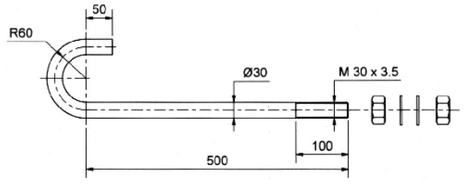
CORROSION PROTECTION NOTES:
- IN ACCORDANCE WITH DWA STANDARD SPECIFICATION DWS 9900.
- PIPE COATING: APPLY TWO PACK EPOXY (150 µm DFT). (*PLUS A TOP COAT OF PURE ALIPHATIC POLYURETHANE (25 µm DFT) OVER INDICATED AREA MARKED 'X' ON DETAIL).
- PIPE LINING: APPLY TWO PACK EPOXY (250 µm DFT).
- PUDDLE COLLAR COATING: TWO PACK EPOXY (300 µm DFT).
- AREA 100 mm FROM PIPE ENDS TO BE UNCOATED (THIS EXCLUDES ENDS WITH FLANGES. ONLY OPEN ENDED PIPES).
- FLANGE FACE: APPLY TWO PACK EPOXY (60 - 90 µm DFT).

DO NOT SCALE DRAWING

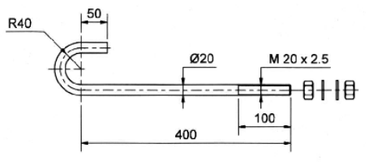
SCALE (mm): 0 5 10 100

PROJECTION (U.O.S.)

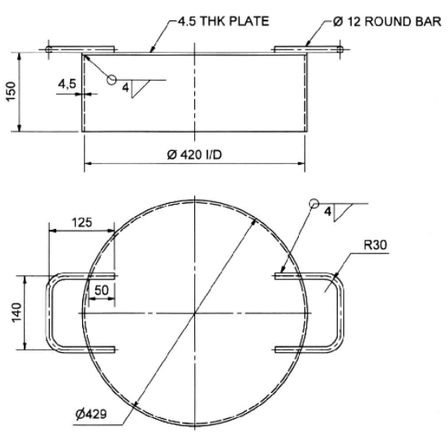
ROUND ALL EDGES TO A 2 mm RADIUS



(65) ANCHOR BOLT WITH 2 NUTS & 2 WASHERS			
MATL. : ST. STEEL 304		MASS :	4.8 kg ea.
NO. OFF : 32		SCALE :	1:5



(66) ANCHOR BOLT WITH 2 NUTS & 2 WASHERS			
MATL. : ST. STEEL 304		MASS :	1.7 kg ea.
NO. OFF : 16		SCALE :	1:5



NOTE A
ITEM 64 TO BE INSTALLED OVER THE 400 NB VENTILATION PIPES DURING CONSTRUCTION STAGES.

(64) END CAP			
MATL. : ST. STEEL 304L		MASS :	13 kg ea.
NO. OFF : 7		SCALE :	1:5

(63) ISOLATING BALL			
MATL. : MILD & ST. STEEL		MASS :	40 kg
NO. OFF : 1		SCALE :	1:3

REVISION

MOD No.	DATE	DESCRIPTION	FOR	DWA
0	07/16	ISSUED FOR CONSTRUCTION		

DEPARTMENT OF WATER AND SANITATION
REPUBLIC OF SOUTH AFRICA
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(012) 336-7500
Ms M. DIEDRICKS
DIRECTOR GENERAL:

CHECKED:	DATE: 01/07/2016	DESIGN: J J THEON	
ENGINEER:	DATE: 25/7/2016	DRAWN: J J THEON	
CHIEF ENGINEER / APP (Pr. Eng):	DATE: 08/09/2017	E.A.I. APPROVAL / DESIGN CHECKED:	DATE: 13/07/2016
		DIRECTOR (Pr. Eng):	DATE: 14/07/2016

OLIFANTS-DOORN RIVER WATER RESOURCE PROJECT

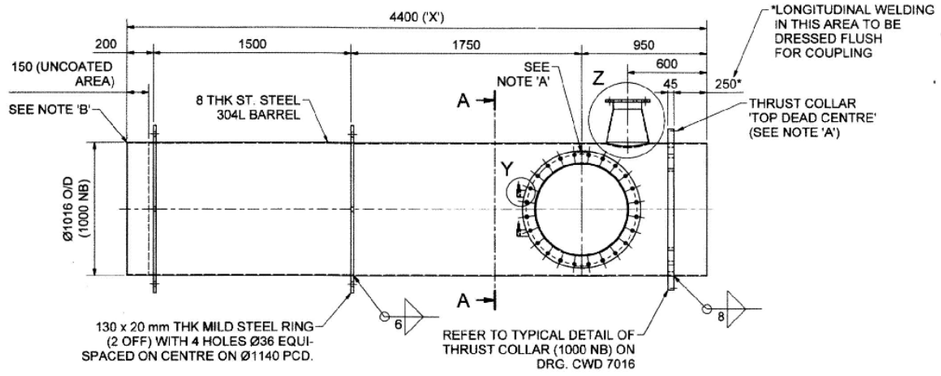
RAISING OF CLANWILLIAM DAM

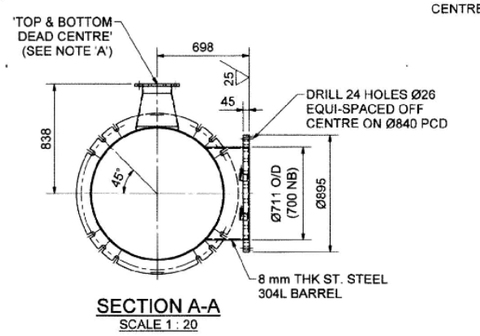
OUTLET WORKS

PIPES & SPECIALS

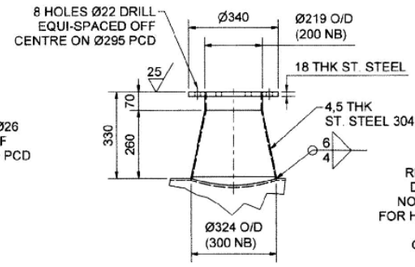
-DETAILS-

PROVINCE: WESTERN CAPE	DISTRICT: CLANWILLIAM	KEYCODES	OUW	PPB	PIP	DET		OTHER NUMBER	CWD 7028
LOCALITY No.: E100-02	TENDER/ CONTRACT No.	SHEET		REG No.					REV No.
CALCULATION FILE: ME/E100-02		29 OF		169346/13 ME					0

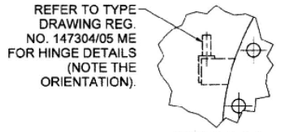




SECTION A-A
SCALE 1 : 20



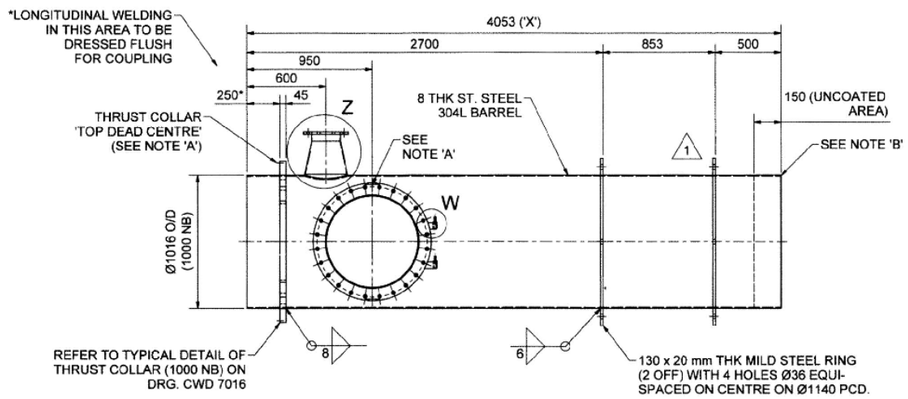
DETAIL Z
SCALE 1 : 10

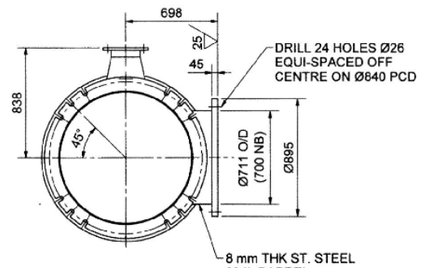


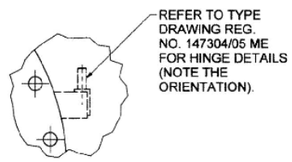
DETAIL Y
SCALE 1 : 5

FOR ('X') SEE CORROSION PROTECTION NOTES.

95	STRAIGHT PIPE		
MATL.:	MILD & ST. STEEL	MASS:	1268 kg
NO. OFF:	1	SCALE:	1:20







DETAIL W
SCALE 1 : 5

1

96	STRAIGHT PIPE		
MATL.:	MILD & ST. STEEL	MASS:	1198 kg
NO. OFF:	1	SCALE:	1:20

FOR ('X') SEE CORROSION PROTECTION NOTES.

NOTE 'A'
Ø6 x 3 mm DEEP HOLE ON Ø1205 PCD FOR 1000 NB FLANGE (Ø870 PCD FOR 700 NB FLANGE & Ø 325 PCD FOR 200 NB FLANGE) ON 'TOP-' AND 'BOTTOM DEAD CENTRE' ON MACHINED GASKET FACE OF FLANGE. (FILL WITH SIGNAL RED PVC PAINT AFTER FINAL CORROSION PROTECTION.)

NOTE 'B'
SEE TYPICAL WELD PREPARATION DETAIL 'A' ON DRG. CWD 7013.

GENERAL WELDING NOTES:
- PERFORM NECESSARY WELD PREPARATION.
- IDENTICAL WELDS SYMBOLISED ONCE ONLY.
- ALL WELDS SHALL BE CONTINUOUS FULL PENETRATION WELDS. REMOVE WELD SPATTER.
- WELDERS SHALL BE CERTIFIED IN ACCORDANCE WITH ASME IX FOR THE RELEVANT SCOPE OF WELDS SPECIFIED.
- FLANGES TO BE WELDED ON PIPES IN ACCORDANCE WITH B.S. 806 TYPE B.

GENERAL MANUFACTURING NOTES:
- HOLES IN PUDDLE COLLARS SHALL ALLIGN.
- PIPE MANUFACTURING AND TOLERANCES SHALL BE IN ACCORDANCE WITH SANS 719.
- FABRICATION TO BE IN ACCORDANCE WITH PARTICULAR SPECIFICATION CWD 44 - PIPES AND SPECIALS.

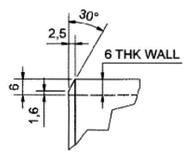
FLANGES:
- ALL FLANGES SHALL BE FLAT FACED WITH A GRAMOPHONE FINISH.
- ALL FLANGES, EXCLUDING 1800 NB, SHALL BE IN ACCORDANCE WITH SANS 1123 TABLE 1000/3.
- 1800 NB FLANGES: OD, PCD, HOLE DIA AND NO-OFF BOLT HOLES TO BE IN ACCORDANCE WITH SANS 1123 TABLE 1000/16.
- FLANGE THICKNESS AS PER DRAWING DETAIL.

MATERIAL
- PIPE BARRELS TO BE ST. STEEL GRADE 304L UNLESS OTHERWISE STATED.
- ALL FLANGES, COLLARS, CROTCH PLATE REINFORCEMENT, GUSSETS, SADDLES & RINGS SHALL BE MILD STEEL (U.O.S).
- MILD STEEL TO BE IN ACCORDANCE WITH SANS 50025/ EN 10025 GRADE S355JR OR SANS 1431 GRADE 350WA.

PIPES AND SPECIALS: PRESSURE RATING
- WORKING PRESSURE: 600 kPa
- HYDRAULIC TEST PRESSURE: 900 kPa

TESTING OF PIPES AND SPECIALS:
ALL PIPES AND SPECIALS SHALL BE HYDRAULICALLY PRESSURE TESTED TO 900 kPa. RADIOGRAPHIC TESTING SHALL BE PERFORMED WHERE HYDRAULIC PRESSURE TESTING IS NOT POSSIBLE.

SURFACE FINISH (REMOVAL OF MATERIAL): X/
X = SURFACE ROUGHNESS IN MICROMETRES



DETAIL V
TYPICAL DETAIL OF WELD PREPARATION FOR 600 NB PLAIN END PIPES
SCALE 1 : 1

97	STRAIGHT PIPE		
MATL.:	MILD & ST. STEEL	MASS:	933 kg ea.
NO. OFF:	4	SCALE:	1:20

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
FLATNESS TOLERANCE:	3 mm/m WIDE

OVALITY TOLERANCE: ± 6 mm DEVIATION ON DIAMETER OF PIPE ENDS.
OUTSIDE DIAMETER TOLERANCE: ± 1,6 mm USING A DIAMETER TAPE OVER A DISTANCE OF 150 mm FROM THE PIPE END.
PIPE END ROOT FACE SHALL NOT DEVIATE FROM SQUARENESS TO THE PIPE AXIS BY MORE THAN 3 mm.

ALL DIMENSIONS IN MILLIMETRES

CORROSION PROTECTION NOTES:
- IN ACCORDANCE WITH DWS STANDARD SPECIFICATION DWS 9900.
- PIPE COATING: APPLY TWO PACK EPOXY (150 µm DFT). (PLUS A TOP COAT OF PURE ALIPHATIC POLY-URETHANE (25 µm DFT) OVER INDICATED AREA MARKED 'X' ON DETAIL).
- PIPE LINING: APPLY TWO PACK EPOXY (250 µm DFT).
- PUDDLE COLLAR COATING: TWO PACK EPOXY (300 µm DFT).
- AREA 250 mm FROM PIPE ENDS ON ITEM 97 TO BE UNCOATED (ITEM 95 & 96 UNCOATED AREAS AS INDICATED).
- FLANGE FACE: APPLY TWO PACK EPOXY (60 - 90 µm DFT).

DO NOT SCALE DRAWING

0 5 10 SCALE (mm) 100

PROJECTION (U.O.S.)

ROUND ALL EDGES TO A 2 mm RADIUS

REVISION					
MOD No.	DATE	DESCRIPTION	FOR	DWA
0	10/16	ISSUED FOR CONSTRUCTION		
1	02/18	REDUCER END OF ITEM 96 REPLACED WITH A STRAIGHT PIPE SECTION. ITEM 97 CANCELLED.		

DEPARTMENT OF WATER AND SANITATION
REPUBLIC OF SOUTH AFRICA

HEAD OFFICE
MECH /ELEC. ENG
PRIVATE BAG X313
PRETORIA 0001

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

DIRECTOR GENERAL

CHECKED	DATE: 26/02/2018	DESIGN: J.J THERON	
ENGINEER	DATE: 22/02/2018	DRAWN: J.J THERON	
CHIEF ENGINEER / APP (Pr. Eng)	DATE: 27/02/2018	PST. APPROVAL / DESIGN CHECKED: DIRECTOR (Pr. Eng)	DATE: 26/02/2018

OLIFANTS-DOORN RIVER RESOURCE PROJECT

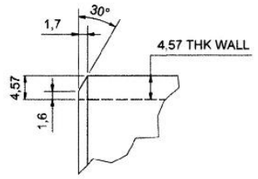
RAISING OF CLANWILLIAM DAM

OUTLET WORKS

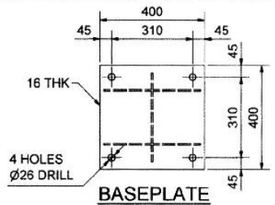
PIPES & SPECIALS

-DETAILS-

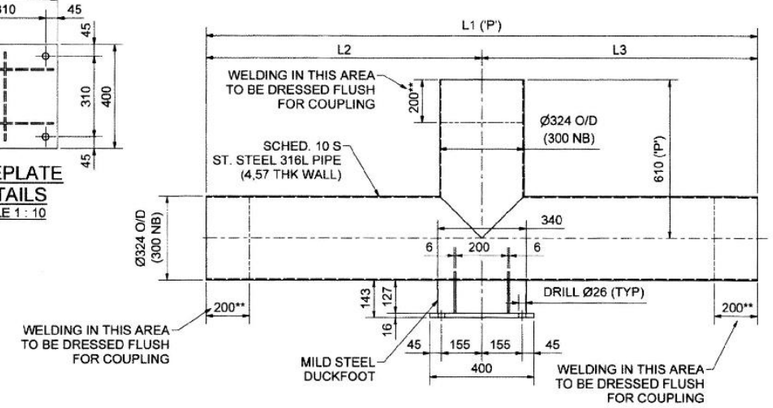
PROVINCE: WESTERN CAPE	DISTRICT: CLANWILLIAM	KEYCODES:	OUW	PPB	PIP	DET		OTHER NUMBER: CWD 7038
LOCALITY No.: E100-02	TENDER/ CONTRACT No:	SHEET: 39 OF	REG No.: 169356/13 ME					REV No: 1
CALCULATION FILE: ME/E100-02								

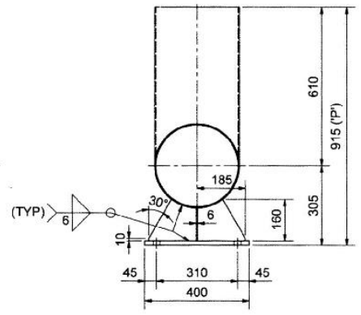


DETAIL Z
TYPICAL DETAIL OF WELD PREPARATION FOR 300 NB PLAIN END PIPES
SCALE 2 : 1



BASEPLATE DETAILS
SCALE 1 : 10





TEE DIMENSIONS			
ITEM NO.	L1	L2	L3
147	4315	1435	2880
148	3318	883	2435
149	2110	1055	1055
150	730	365	365

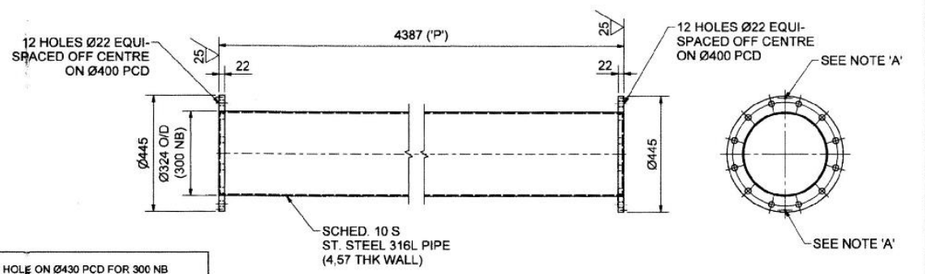
147	TEE		
MATL.:	MILD & ST. STEEL	MASS:	200 kg
NO. OFF:	1	SCALE.:	1:10

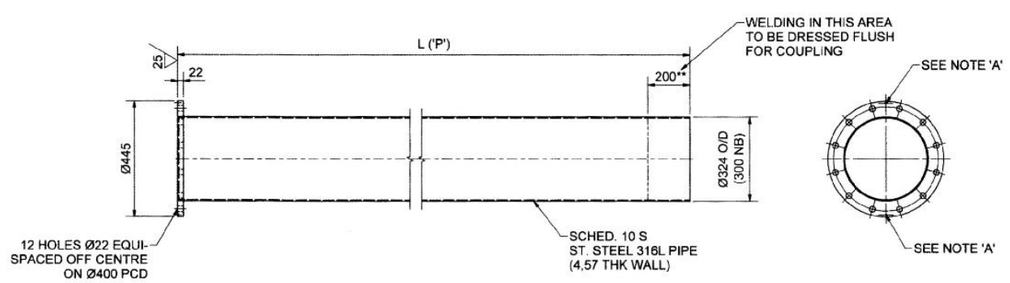
148	TEE		
MATL.:	MILD & ST. STEEL	MASS:	163 kg
NO. OFF:	1	SCALE.:	1:10

149	TEE		
MATL.:	MILD & ST. STEEL	MASS:	118 kg ea.
NO. OFF:	2	SCALE.:	1:10

150	TEE		
MATL.:	MILD & ST. STEEL	MASS:	68 kg ea.
NO. OFF:	2	SCALE.:	1:10

FOR ('P') SEE CORROSION PROTECTION NOTES.





FOR ('P') SEE CORROSION PROTECTION NOTES.

NOTE 'A'
Ø6 x 3 mm DEEP HOLE ON Ø430 PCD FOR 300 NB FLANGE ON 'TOP-' AND 'BOTTOM DEAD CENTRE' ON MACHINED GASKET FACE OF FLANGE. (FILL WITH SIGNAL RED PVC PAINT AFTER FINAL CORROSION PROTECTION.)

GENERAL WELDING NOTES:
- PERFORM NECESSARY WELD PREPARATION.
- IDENTICAL WELDS SYMBOLISED ONCE ONLY.
- ALL WELDS SHALL BE CONTINUOUS FULL PENETRATION WELDS. REMOVE WELD SPATTER.
- WELDERS SHALL BE CERTIFIED IN ACCORDANCE WITH ASME IX FOR THE RELEVANT SCOPE OF WELDS SPECIFIED.
- FLANGES TO BE WELDED ON PIPES IN ACCORDANCE WITH B.S. 806 TYPE B.

GENERAL MANUFACTURING NOTES:
- HOLES IN PUDDLE COLLARS SHALL ALLIGN.
- PIPE MANUFACTURING AND TOLERANCES SHALL BE IN ACCORDANCE WITH SANS 719.
- FABRICATION TO BE IN ACCORDANCE WITH PARTICULAR SPECIFICATION CWD 44 - PIPES AND SPECIALS.

FLANGES:
- ALL FLANGES SHALL BE FLAT FACED WITH A GRAMOPHONE FINISH.
- ALL FLANGES, EXCLUDING 1800 NB, SHALL BE IN ACCORDANCE WITH SANS 1123 TABLE 1000/3.
- FLANGE THICKNESS AS PER DRAWING DETAIL.

MATERIAL
- PIPE BARRELS TO BE ST. STEEL GRADE 316L UNLESS OTHERWISE STATED.
- ALL FLANGES, COLLARS, CROTCH PLATE REINFORCEMENT, GUSSETS, SADDLES & RINGS SHALL BE MILD STEEL (U.O.S).
- MILD STEEL TO BE IN ACCORDANCE WITH SANS 50025/EN 10025 GRADE S355JR OR SANS 1431 GRADE 350WA.

PIPES AND SPECIALS: PRESSURE RATING
- WORKING PRESSURE: 600 kPa
- HYDRAULIC TEST PRESSURE: 900 kPa

TESTING OF PIPES AND SPECIALS:
ALL PIPES AND SPECIALS SHALL BE HYDRAULICALLY PRESSURE TESTED TO 900 kPa. RADIOGRAPHIC TESTING SHALL BE PERFORMED WHERE HYDRAULIC PRESSURE TESTING IS NOT POSSIBLE.

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
FLATNESS TOLERANCE:	3 mm/m WIDE

OVALITY TOLERANCE: ± 3 mm DEVIATION ON DIAMETER OF PIPE ENDS FOR 300 NB.
OUTSIDE DIAMETER TOLERANCE: ± 1,6 mm USING A DIAMETER TAPE OVER A DISTANCE OF 150 mm FROM THE PIPE END.
PIPE END ROOT FACE SHALL NOT DEVIATE FROM SQUARENESS TO THE PIPE AXIS BY MORE THAN 3 mm.

ALL DIMENSIONS IN MILLIMETRES

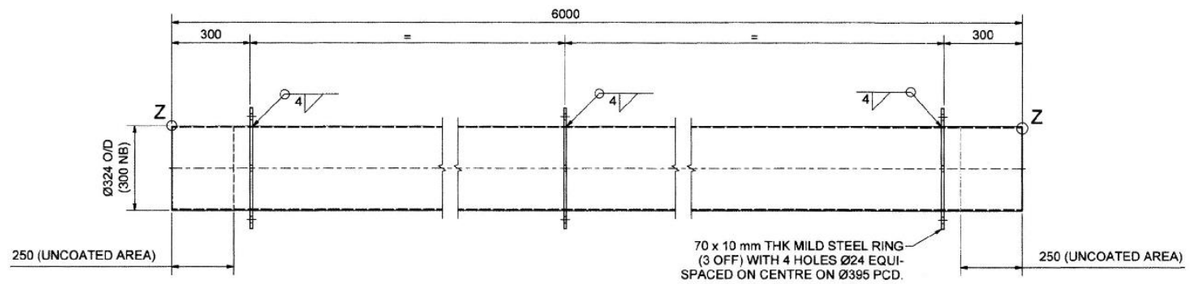
151	STRAIGHT PIPE		
MATL.:	MILD & ST. STEEL	MASS:	185 kg
NO. OFF:	1	SCALE.:	1:10

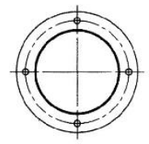
FOR ('P') SEE CORROSION PROTECTION NOTES.

152	STRAIGHT PIPE (L = 2410)		
MATL.:	MILD & ST. STEEL	MASS:	100 kg ea.
NO. OFF:	1	SCALE.:	1:10

153	STRAIGHT PIPE (L = 3005)		
MATL.:	MILD & ST. STEEL	MASS:	122 kg ea.
NO. OFF:	2	SCALE.:	1:10

154	STRAIGHT PIPE (L = 6005)		
MATL.:	MILD & ST. STEEL	MASS:	233 kg
NO. OFF:	1	SCALE.:	1:10





155	STRAIGHT PIPE		
MATL.	MILD & ST. STEEL	MASS:	241 kg ea.
NO. OFF:	4	SCALE.	1:10

CORROSION PROTECTION NOTES:
- IN ACCORDANCE WITH DWS STANDARD SPECIFICATION DWS 9900.
- PIPE COATING: APPLY TWO PACK EPOXY (150 µm DFT). (*PLUS A TOP COAT OF PURE ALIPHATIC POLY-URETHANE (25 µm DFT) OVER INDICATED AREA MARKED 'P' ON DETAIL).
- PIPE LINING: APPLY TWO PACK EPOXY (250 µm DFT).
- PUDDLE COLLAR COATING: TWO PACK EPOXY (300 µm DFT).
- FLANGE FACE: APPLY TWO PACK EPOXY (60 - 90 µm DFT).

SURFACE FINISH (REMOVAL OF MATERIAL):
X = SURFACE ROUGHNESS IN MICROMETRES

DO NOT SCALE DRAWING

0 5 10 SCALE (mm) 100

PROJECTION (U.O.S.)

ROUND ALL EDGES TO A 2 mm RADIUS

REVISION				
MOD No.	DATE	DESCRIPTION	FOR	DWA
0	09/17	ISSUED FOR CONSTRUCTION		

DEPARTMENT OF WATER AND SANITATION
REPUBLIC OF SOUTH AFRICA

HEAD OFFICE
MECH. /E.EC. ENG.
PRIVATE BAG X313
PRETORIA 0001

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

Mr. D.M. MASHITISHO
DIRECTOR GENERAL

CHECKED: DATE: 13/09/2017
DESIGN: J.J THERON
DRAWN: J.J THERON
ENGINEER: DATE: 19/9/2017
EXT. APPROVAL / DESIGN CHECKED: DATE: 4/12/2017
CHIEF ENGINEER / APP (P): ENG: DATE: 22/11/2017
DIRECTOR (PY. ENG): DATE: 16/01/2018

OLIFANTS-DOORN WATER RESOURCE PROJECT

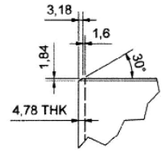
RAISING OF CLANWILLIAM DAM

OUTLET WORKS

PIPES & SPECIALS

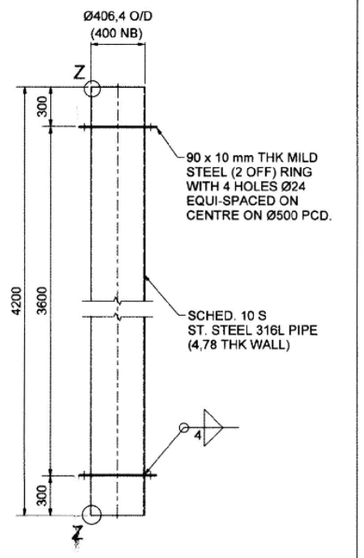
-DETAILS-

PROVINCE: WESTERN CAPE | DISTRICT: CLANWILLIAM | KEYCODES: OUW PPB PIP DET | OTHER NUMBER: CWD 7049
LOCALITY No.: E100-02 | TENDER/ CONTRACT No.:
CALCULATION FILE: ME/E100-02
SHEET: 50 OF | REG No.: 169367/13 ME | REV No.: 0



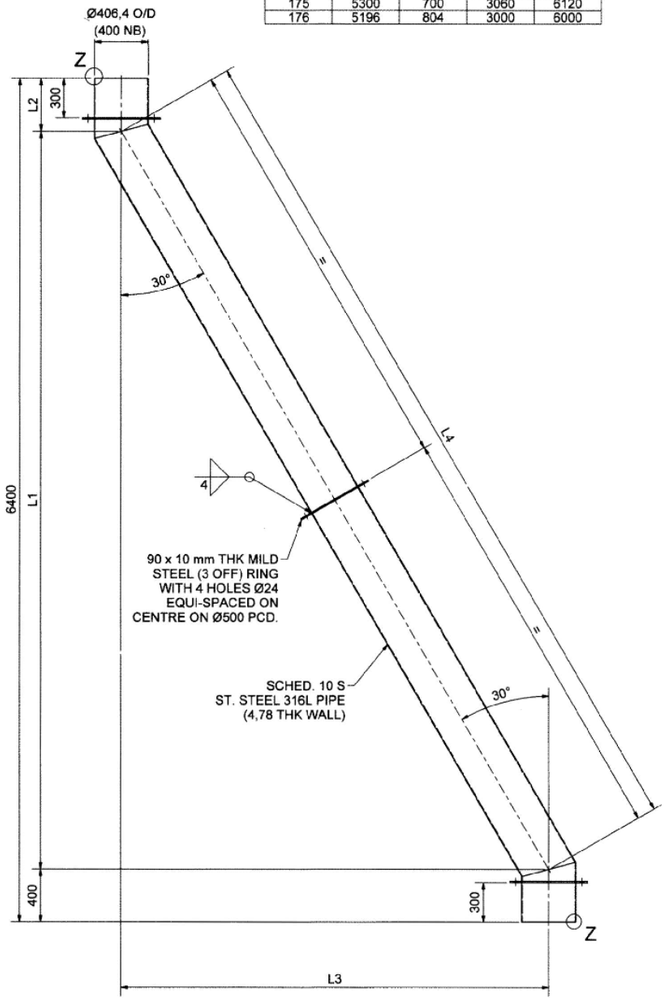
DETAIL Z

TYPICAL DETAIL OF WELD PREPARATION FOR 400 NB PLAIN END PIPES
SCALE 1 : 2



(173) VENTILATION PIPE			
MATL :	MILD & ST. STEEL	MASS :	225 kg ea.
NO. OFF :	15	SCALE. :	1:20

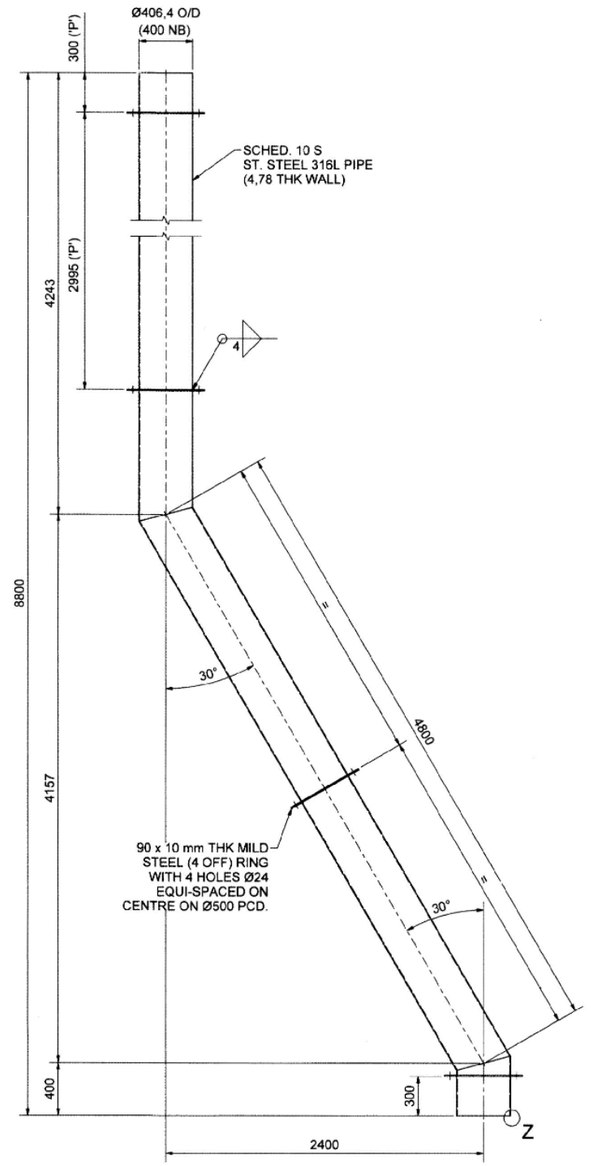
PIPE DIMENSIONS				
ITEM NO.	L1	L2	L3	L4
174	5596	404	3231	6462
175	5300	700	3060	6120
176	5196	804	3000	6000



(174) VENTILATION PIPE			
MATL :	MILD & ST. STEEL	MASS :	385 kg ea.
NO. OFF :	2	SCALE. :	1:20

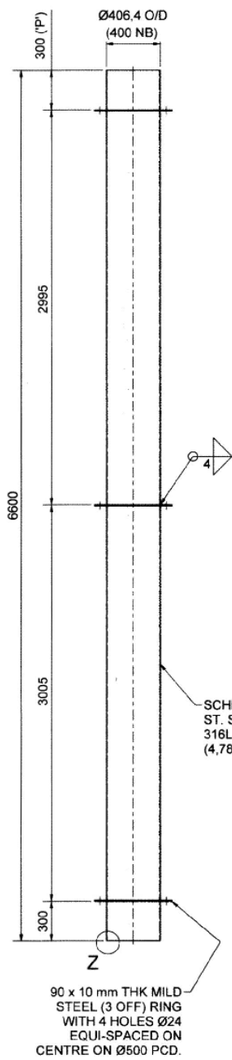
(176) VENTILATION PIPE			
MATL :	MILD & ST. STEEL	MASS :	382 kg ea.
NO. OFF :	2	SCALE. :	1:20

(175) VENTILATION PIPE			
MATL :	MILD & ST. STEEL	MASS :	382 kg ea.
NO. OFF :	2	SCALE. :	1:20



FOR ('X') SEE CORROSION PROTECTION NOTES.

(177) VENTILATION PIPE			
MATL :	MILD & ST. STEEL	MASS :	501 kg ea.
NO. OFF :	1	SCALE. :	1:20



FOR ('X') SEE CORROSION PROTECTION NOTES.

(178) VENTILATION PIPE			
MATL :	MILD & ST. STEEL	MASS :	353 kg ea.
NO. OFF :	6	SCALE. :	1:20

GENERAL WELDING NOTES:
- PERFORM NECESSARY WELD PREPARATION.
- IDENTICAL WELDS SYMBOLISED ONCE ONLY.
- ALL WELDS SHALL BE CONTINUOUS FULL PENETRATION WELDS. REMOVE WELD SPATTER.
- WELDERS SHALL BE CERTIFIED IN ACCORDANCE WITH ASME IX FOR THE RELEVANT SCOPE OF WELDS SPECIFIED.

MATERIAL
- PIPE BARRELS TO BE ST. STEEL GRADE 316L UNLESS OTHERWISE STATED.
- ALL FLANGES (>200 NB), COLLARS, CROTCH PLATE REINFORCEMENT, GUSSETS, SADDLES & RINGS SHALL BE MILD STEEL (U.O.S).
- MILD STEEL TO BE IN ACCORDANCE WITH SANS 50025/ EN 10025 GRADE S355JR OR SANS 1431 GRADE 350WA.

PIPES AND SPECIALS: PRESSURE RATING
- WORKING PRESSURE: 600 kPa
- HYDRAULIC TEST PRESSURE: 900 kPa

TESTING OF PIPES AND SPECIALS:
ALL PIPES AND SPECIALS SHALL BE HYDRAULICALLY PRESSURE TESTED TO 900 kPa. RADIOGRAPHIC TESTING SHALL BE PERFORMED WHERE HYDRAULIC PRESSURE TESTING IS NOT POSSIBLE.

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
FLATNESS TOLERANCE:	3 mm/m WIDE

GENERAL MANUFACTURING NOTES:
-PIPE MANUFACTURING AND TOLERANCES SHALL BE IN ACCORDANCE WITH SANS 719.
-FABRICATION TO BE IN ACCORDANCE WITH PARTICULAR SPECIFICATION CWD 44 - PIPES AND SPECIALS.
-HOLES IN PUDDLE COLLARS SHALL ALLIGN.

CORROSION PROTECTION NOTES:
- IN ACCORDANCE WITH DWS STANDARD SPECIFICATION DWS 9900.
- PIPE COATING: APPLY TWO PACK EPOXY (150 µm DFT). (*PLUS A TOP COAT OF PURE ALIPHATIC POLY-URETHANE (25 µm DFT) OVER INDICATED AREA MARKED 'P' ON DETAIL).
- PIPE LINING: APPLY TWO PACK EPOXY (250 µm DFT).
- PUDDLE COLLAR COATING: TWO PACK EPOXY (300 µm DFT).
- AREA 250 mm FROM OPEN ENDED PIPES TO BE UNCOATED (THIS EXCLUDES THE ENDS MARKED 'P' ON ITEM 177 & 178).
- FLANGE FACE: APPLY TWO PACK EPOXY (60 - 90 µm DFT).

0 5 10 SCALE (mm) 100

PROJECTION (U.O.S.)

ALL DIMENSIONS IN MILLIMETRES

DO NOT SCALE DRAWING

ROUND ALL EDGES TO A 2 mm RADIUS

REVISION				
MOD No.	DATE	DESCRIPTION	FOR	DWA
0	08/17	ISSUED FOR CONSTRUCTION		

DEPARTMENT OF WATER AND SANITATION
REPUBLIC OF SOUTH AFRICA
HEAD OFFICE
MECH. /E./P.C. ENG
PRIVATE BAG X313
PRETORIA 0001
SEDIBENG BUILDING
185 FRANCIS BAARD STREET
PRETORIA
(012) 336-7500
Mr D.M. MASHITISHO
DIRECTOR GENERAL

DESIGN: J.J THERON	13/09/2017		
DRAWN: J.J THERON			
CHECKED:	DATE:		
ENGINEER	19/9/2017	EXT. APPROVAL / DESIGN CHECKED:	01/12/2017
CHIEF ENGINEER / APP (Pr. Eng):	02/11/2017	DIRECTOR (Pr. Eng):	16/01/2018

OLIFANTS-DOORN WATER RESOURCE PROJECT

RAISING OF CLANWILLIAM DAM

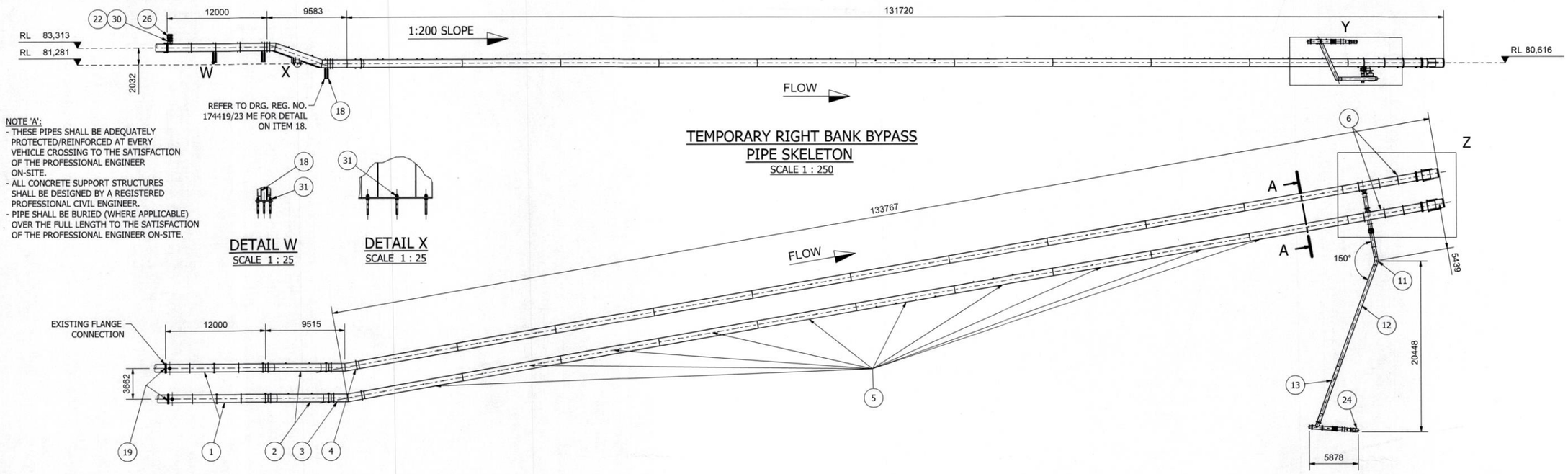
OUTLET WORKS

PIPES & SPECIALS

-DETAILS

PROVINCE: WESTERN CAPE	DISTRICT: CLANWILLIAM	KEYCODES	OUW	PPB	PIP	DET	OTHER NUMBER CWD 7053
LOCALITY No: E100-02	TENDER/ CONTRACT No.	SHEET	REG No.				REV No.
CALCULATION FILE: ME/E100-02		54 OF	169371/13 ME				0

- **Appendix D: Bypass Pipe 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	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

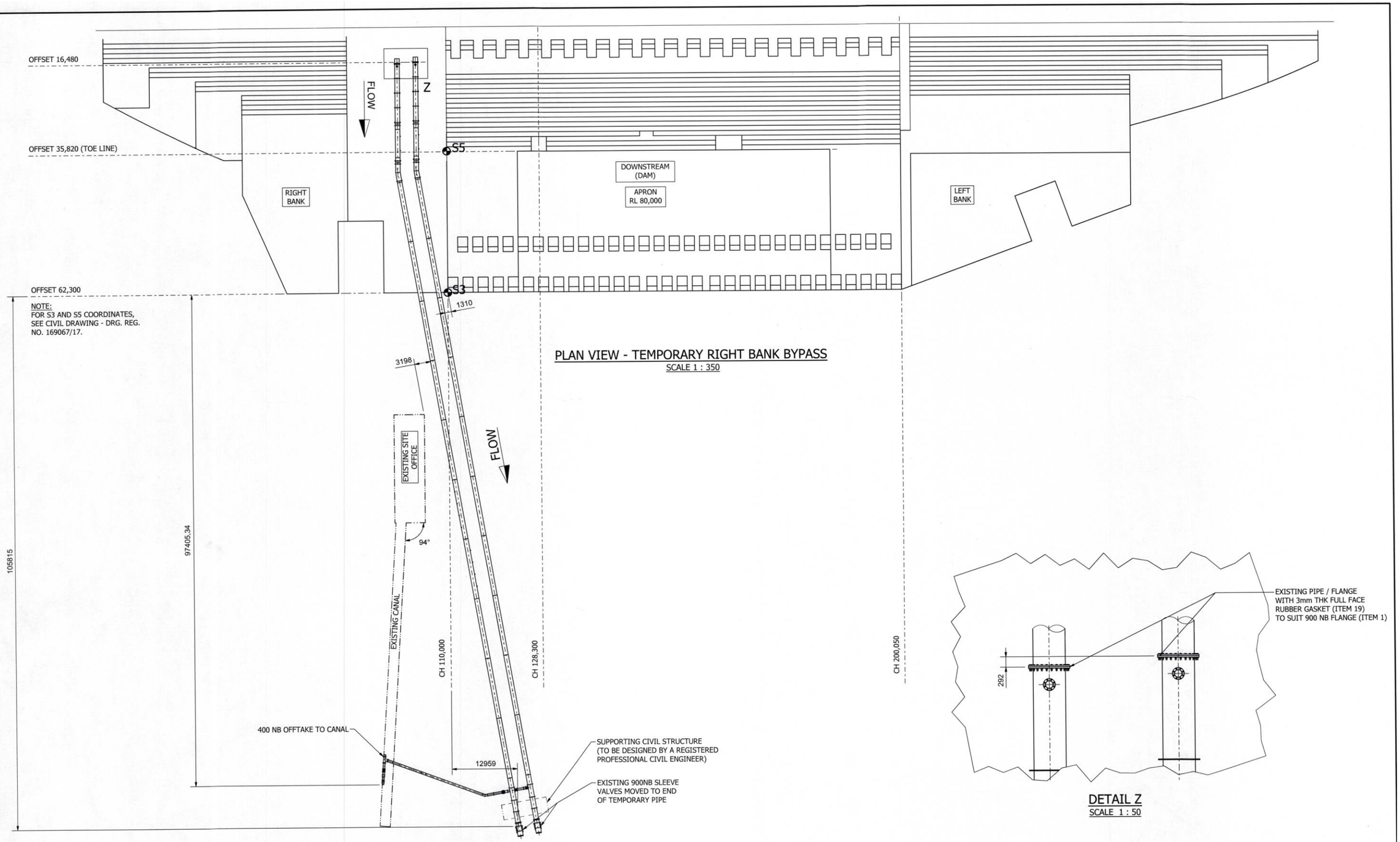
DIRECTOR GENERAL
CHECKED: 28/05/2025 DESIGN: T. DE LANGE
DRAWN: T. DE LANGE
ENGINEER: 28/05/2025 EXTERNAL APPROVAL:
CHIEF ENGINEER / APP (Pr. Eng.): 18/06/2025 DIRECTOR: 09/06/2025

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

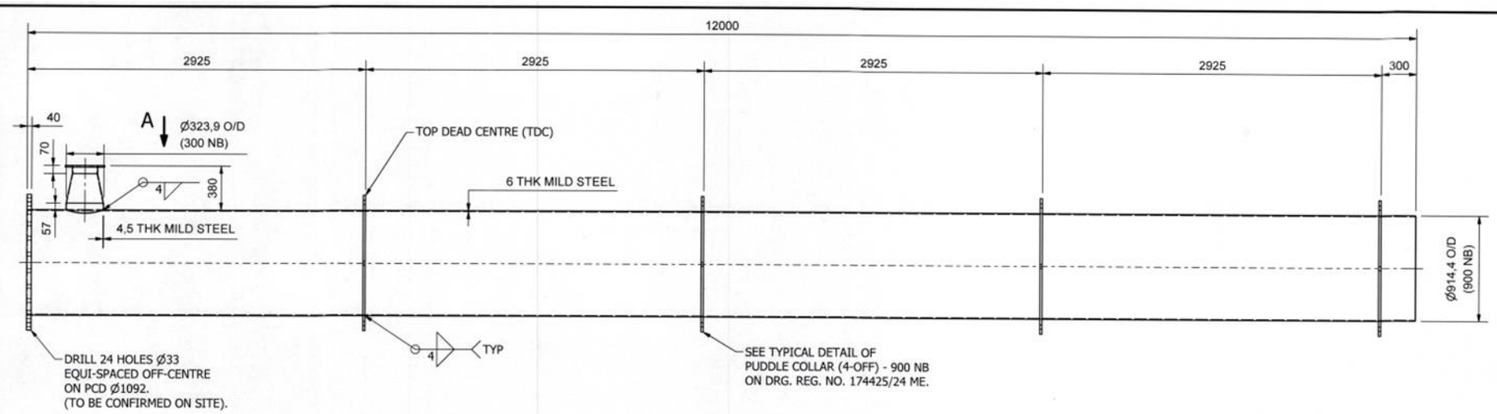
DIRECTOR GENERAL

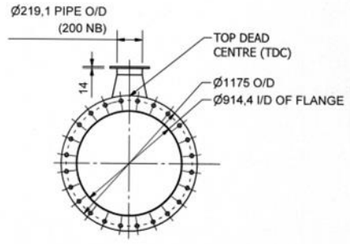
DESIGN: T. DE LANGE
DRAWN: T. DE LANGE
CHECKED: DATE:
ENGINEER: DATE: 28/05/2025
EXTERNAL APPROVAL: DATE:
CHIEF ENGINEER / APP (Pr. Eng.): DATE: 18/06/2025
DIRECTOR: DATE: 07/06/2025

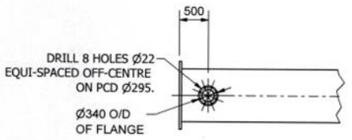
OLIFANTS-DOORN RIVER WATER RESOURCES PROJECT

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
REV. No. 1
CALCULATION FILE: ME/E100-02
TENDER/ CONTRACT No.

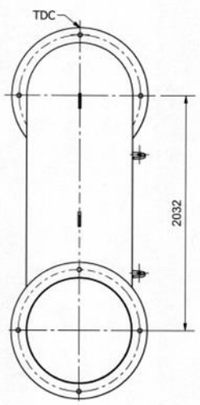


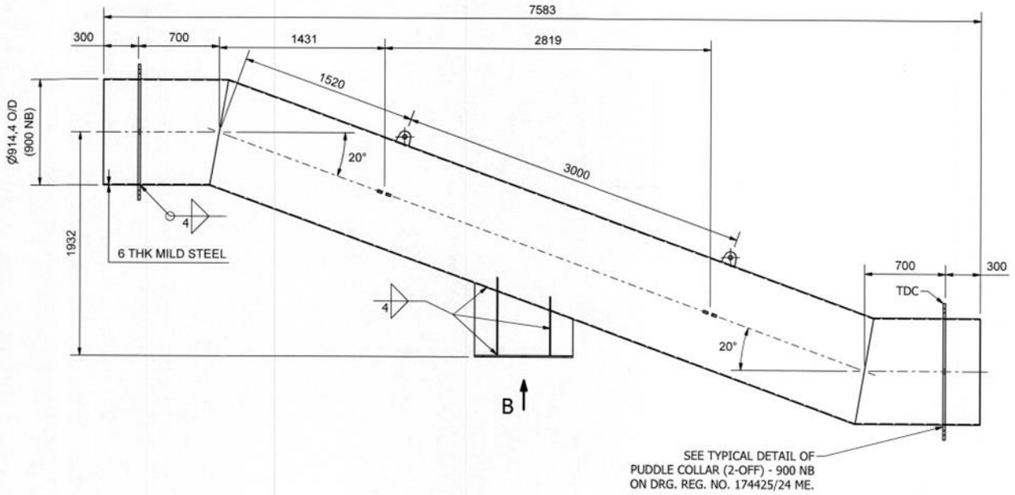


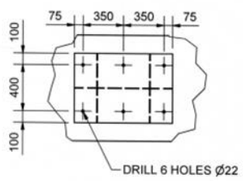


VIEW ON ARROW 'A'
SCALE 1 : 50

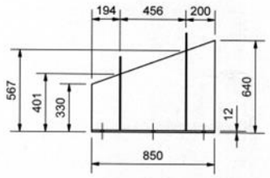
ITEM 1	STRAIGHT PIPE L = 12000
MATL.: MILD STEEL	QTY.: 2
MASS: 2024 kg	SCALE: 1 : 25

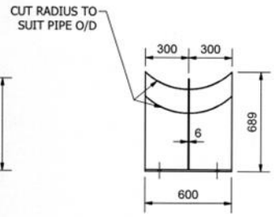






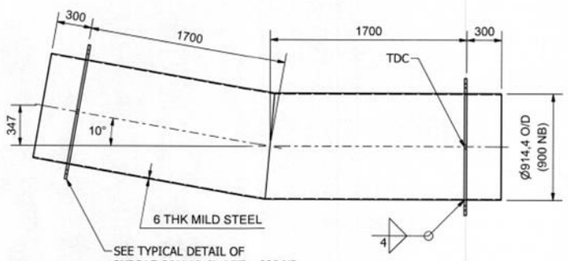
VIEW ON ARROW 'B'
SCALE 1 : 25

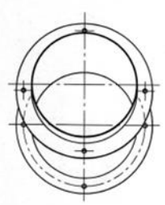




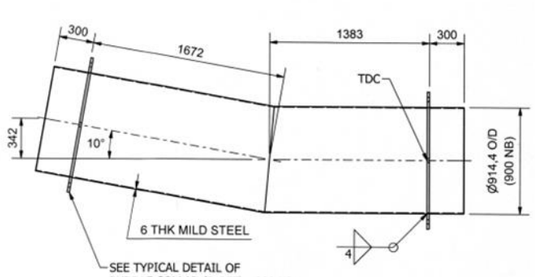
DETAIL OF 20° OFFSET BEND
PIPE - FOOT PIECE (ITEM 4)
SCALE 1 : 20

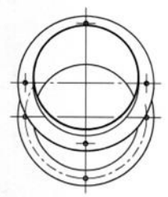
ITEM 2	20° DOUBLE OFFSET BEND PIPE
MATL.: MILD STEEL	QTY.: 2
MASS: 1301 kg	SCALE: 1 : 25





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





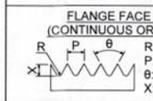
ITEM 4	10° BEND PIPE
MATL.: MILD STEEL	QTY.: 1
MASS: 624 kg	SCALE: 1 : 25

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.

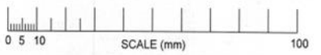
MATERIAL:
- ALL ITEMS TO BE MILD STEEL U.O.S.
- ALL MILD STEEL ITEMS TO BE IN ACCORDANCE WITH SANS 50025 / EN 10025 GRADE S355JR

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

OLIFANTS-DOORN RIVER WATER RESOURCES PROJECT

RAISING OF CLANWILLIAM DAM

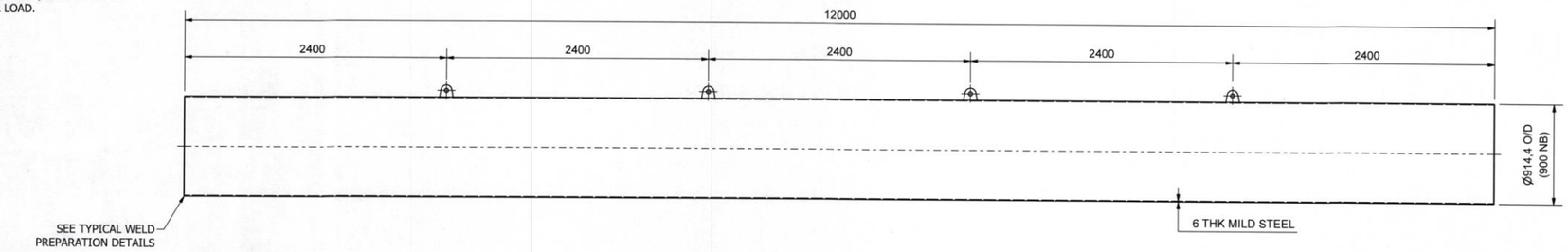
TEMPORARY RIGHT BANK BYPASS:

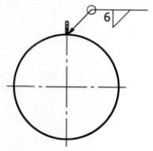
PIPES & SPECIALS

-DETAILS-

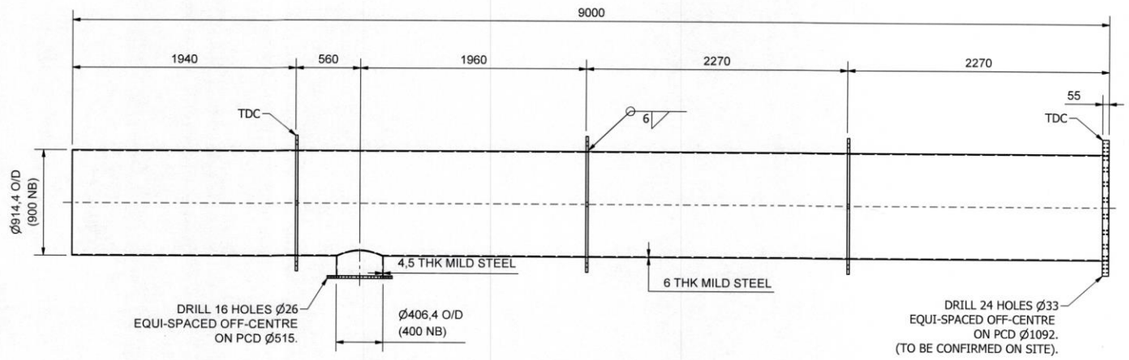
PROVINCE: WESTERN CAPE
KEYCODES:
OTHER NUMBER: CWD 7143
LOCALITY No.: E100-02
DISTRICT: CLANWILLIAM
CALCULATION FILE: ME/E100-02
TENDER/ CONTRACT No.
SHEET: 3 OF 6
REG. No.: 174422/24 ME
REV. No.: 1

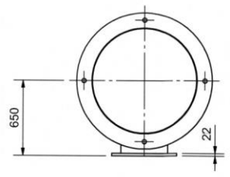
NOTE 'A':
WHEN LIFTING ITEM 5 SHALL BE SUSPENDED ON AT LEAST TWO LIFTING LUGS, BOTH BEARING EQUAL LOAD.





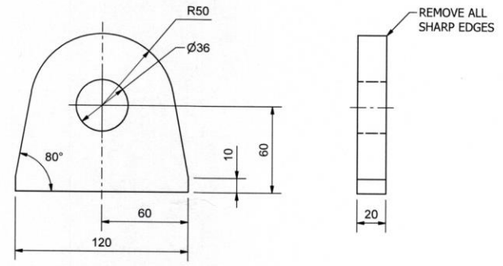
ITEM 5	STRAIGHT PIPE L = 12000
MATL.: MILD STEEL	QTY.: 20
MASS: 1618 kg	SCALE: 1 : 25



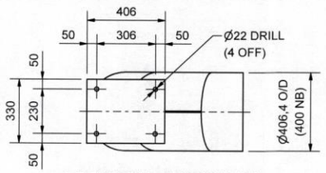


ITEM 6	STRAIGHT PIPE L = 9000
MATL.: MILD STEEL	QTY.: 2
MASS: 1608 kg	SCALE: 1 : 25

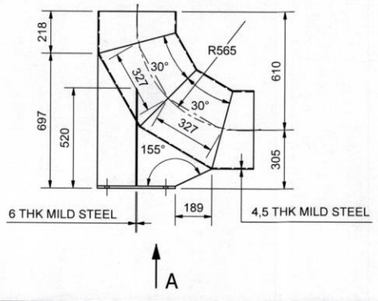
NOTE 'A':
- TOTAL LUGS REQUIRED = 85
- MATERIAL TO BE MILD STEEL (U.O.S)

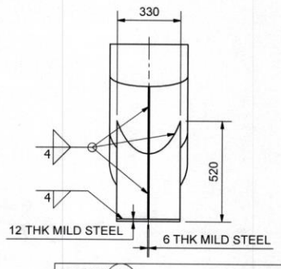


TYPICAL DETAIL OF LIFTING LUG
SCALE 1 : 2

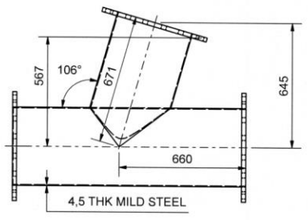


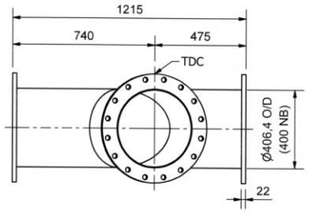
VIEW ON ARROW 'A'
SCALE 1 : 15

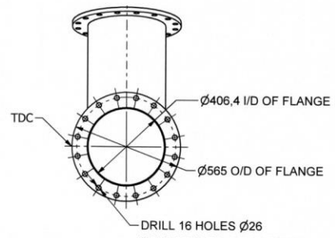




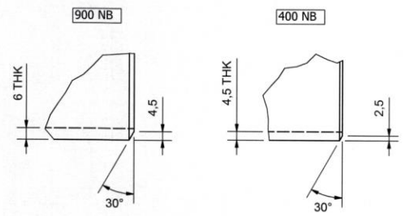
ITEM 8	90° BEND (400 NB)
MATL.: MILD STEEL	QTY.: 1
MASS: 70 kg	SCALE: 1 : 15







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

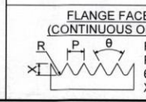


TYPICAL DETAIL OF WELD PREPARATION FOR PIPE ENDS
SCALE 1 : 2

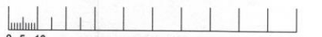
GENERAL DIMENSIONAL TOLERANCES (U.O.S):
DIMENSIONS UP TO 120: ± 0,3 mm
DIMENSIONS ABOVE 120 TO 400: ± 0,5 mm
DIMENSIONS ABOVE 400 TO 1000: ± 0,8 mm
DIMENSIONS ABOVE 1000: ± 2 mm
PIPE MANUFACTURING AND TOLERANCES SHALL BE IN ACCORDANCE WITH SANS 719.
GENERAL WELDING NOTES:
SEE DRG. REG. NO. 174 422/24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

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

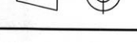
FLANGE FACE FINISH DETAIL (U.O.S.)
(CONTINUOUS OR CONCENTRIC GROOVES)



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



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: 28/05/2025
DESIGN: T. DE LANGE
DRAWN: T. DE LANGE
ENGINEER: DATE: 28/05/2025
EXTERNAL APPROVAL: DATE:
(SITE ENGINEER / APP (Pr. Eng.): DATE: 18/06/2025
DIRECTOR: DATE: 09/06/2025

OLIFANTS-DOORN RIVER WATER RESOURCES PROJECT

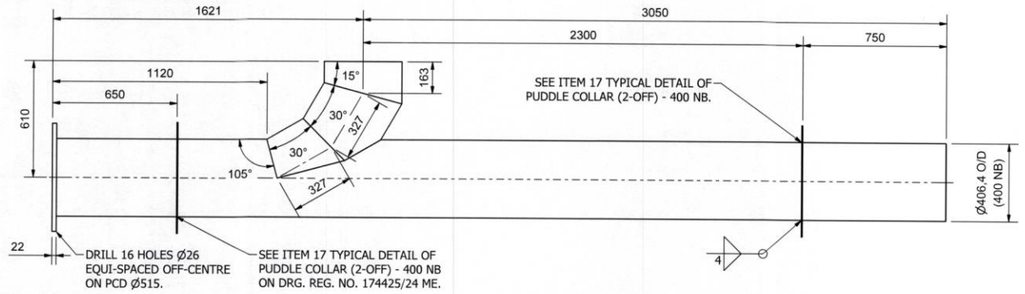
RAISING OF CLANWILLIAM DAM

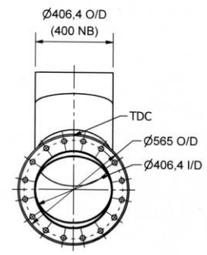
TEMPORARY RIGHT BANK BYPASS:

PIPES & SPECIALS

-DETAILS-

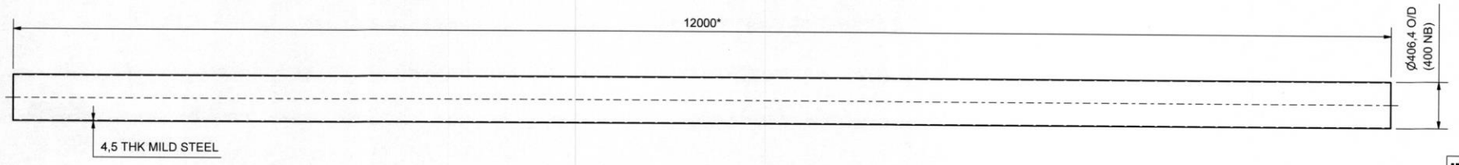
PROVINCE: WESTERN CAPE
KEYCODES:
OTHER NUMBER CWD 7144
LOCALITY No.: E100-02
DISTRICT: CLANWILLIAM
SHEET 4 OF 6
REG. No. 174423/24 ME
REV. No. 1
CALCULATION FILE: ME/E100-02
TENDER/ CONTRACT No.



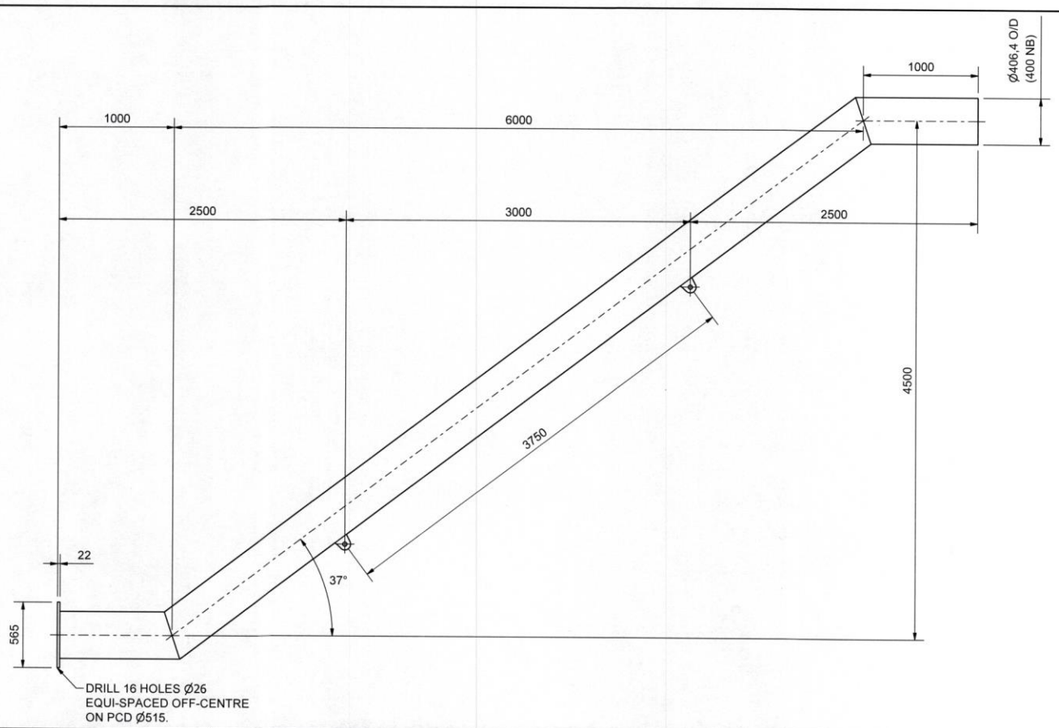


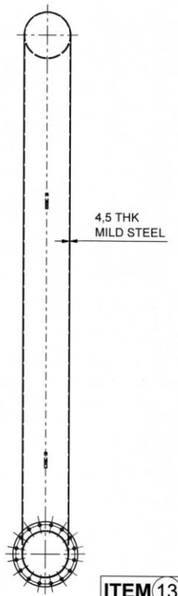
ITEM 9	SWEEP TEE
MATL.: MILD STEEL	QTY.: 1
MASS: 276 kg	SCALE: 1 : 10

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

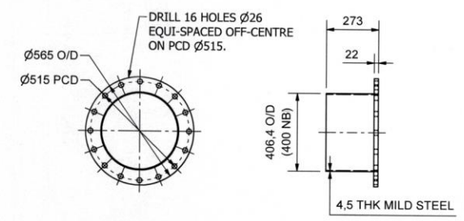


ITEM 12	STRAIGHT PIPE L = 12000
MATL.: MILD STEEL	QTY.: 3
MASS: 535 kg	SCALE: 1 : 10

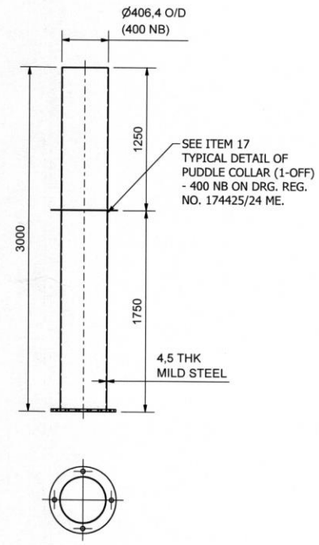




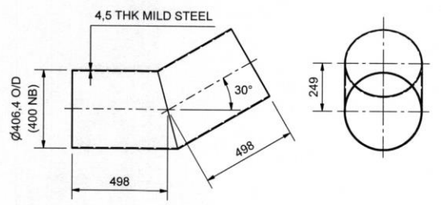
ITEM 13	DOUBLE OFFSET BEND PIPE (400 NB)
MATL.: MILD STEEL	QTY.: 1
MASS: 430 kg	SCALE: 1 : 20



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

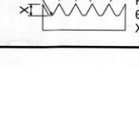
GENERAL WELDING NOTES:
- PERFORM NECESSARY WELD PREPS.
- SEAL WELD ALL OPEN INTERFACES BETWEEN PLATE CONNECTIONS.
- IDENTICAL WELDS SYMBOLISED ONCE ONLY.
- ALL WELDS SHALL BE CONTINUOUS FULL PENETRATION WELDS.
- REMOVE WELD SPATTER.
- WELDERS SHALL BE APPROPRIATELY QUALIFIED.
- ALL FLANGES TO BE WELDED 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

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PRETORIA 0001

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(012) 336-7500

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

OLIFANTS-DOORN RIVER WATER RESOURCES PROJECT

RAISING OF CLANWILLIAM DAM

TEMPORARY RIGHT BANK BYPASS:

PIPES & SPECIALS

-DETAILS-

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

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 CV submitted under the mandatory requirements (Phase 1) of this bid will be the welding engineer that produce the welding procedures.

_____
BIDDER'S SIGNATUR

DEPARTMENT OF WATER AND SANITATION

BID: WTE-0409 CS

WRITING OF WELDING PROCEDURES AND QUALIFYING OF WELDERS 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
m^2	square metre
ha	hectare
m^3	cubic metre
kN	Kilonewton
MN	meganewton
MN.m	meganewton-metre
MPa	megapascal
kg	kilogram
t	ton (1000 kg)

SBD 3.1

PRICING SCHEDULE
(Firm Price)

DEPARTMENT OF WATER AND SANITATION

BID: WTE- 0409CS

PRICING SCHEDULE FOR WRITING OF WELDING PROCEDURES AND QUALIFYING OF WELDERS FOR CLANWILLIAM DAM.

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-0409 CS					
CLOSING DATE: 23 SEPTEMBER 2025				**CLOSING TIME: 11H00**	
Item	**Short description**	**Unit**	**Provisional QTY**	**Rate**	**Amount**
1	**Field welding procedure for Stainless steel 304L and 316L Pipes. Pipes being vertically and horizontally inclined.**	N/A	N/A	N/A	N/A
1.1	1800NB	Sum	1		
1.2	1000NB	Sum	1		
1.3	600NB	Sum	1		
1.4	400NB	Sum	1		
1.5	300NB	Sum	1		
1.6	100NB	Sum	1		
1.7	80NB	Sum	1		
2	**Field welding procedure for Mild steel (SANS 50025 / EN 10025 Gr S355JR) pipes. Pipe being horizontally inclined.**	N/A	N/A	N/A	N/A
2.1	900NB	Sum	1		
2.2	400NB	Sum	1		
3	**Qualifying of Employers staff**	N/A	N/A	N/A	N/A
3.1	Qualifying to welding procedure. Per person per welding procedure	No.	50		
3.2	Testing of welds	No.	60		
3.3	Travel, accommodation and safety requirements for Qualifying facilitator .	Sum	1		
		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.

****"All Applicable Taxes" includes value-added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies.**
Any enquiries regarding bidding procedures may be directed to the –

For Administrative enquiries
Ms. T. Daniels
danielst@dws.gov.za

Or

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