FRAMEWORK CONTRACT DOCUMENT (PANEL TYPE)

FOR THE

TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

Framework Contract Period: 60 Months from Commencement Date
Works Projects: Panel 1: Above R1 000 000 up to R3 000 000
Panel 2: Above R3 000 000 up to R6 000 000
Panel 3: Above R6 000 000 up to R10 000 000

THE CONTRACT

ISSUED BY:
DIRECTOR: WATER AND SANITATION: DISTRIBUTION SERVICES Tower Block, Civic Centre 12 Hertzog Boulevard CAPE TOWN 8001

COMPILED BY:
[redacted] WATER AND SANITATION CITY OF CAPE TOWN Water and Sanitation Head Office, 8 Voortrekker Road Corner of Mike Pienaar Boulevard and Voortrekker Road Bellville, 7535

For official use.
TENDER SERIAL No.:
SIGNATURES OF CITY OFFICIALS AT TENDER OPENING

[redacted]

January 2025

NAME OF TENDERING ENTITY	[redacted]
EMAIL ADDRESS OF TENDERING ENTITY	[redacted]
NATURE OF TENDER OFFER (please indicate below)	
Main Offer (see clause C.2.12)	RATES ONLY TENDER
Alternative Offer (see clause C.2.12)	N/A

Part C1: Agreements and Contract Data

		Pages
	Memorandum of Agreement	36 – 37
C1.1	Form of Offer and Acceptance	38 – 41
C1.2	Contract Data (data provided by the Employer)	42 – 60
C1.2	Contract Data (provided by contractor)	61
C1.3	Form of Performance Guarantee	62 – 71
C1.4	Form of Advance Payment Guarantee	72
C1.5	Occupational Health and Safety Agreement	73
C1.6	Protection of the Environment Declaration	74
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C1.9	Works Project Acceptance/Refusal Notice	79

CITY OF CAPE TOWN
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Making progress possible. Together.

MEMORANDUM OF AGREEMENT

FOR

TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

MADE AND ENTERED INTO BETWEEN

CITY OF CAPE TOWN METROPOLITAN MUNICIPALITY

And

CONTRACTOR	
NAME of Company/Close Corporation or Partnership / Joint Venture/ Consortium or Sole Proprietor /Individual (The "Contractor" / "tenderer")	[redacted]
TRADING AS (if different from above)	AS ABOVE
REGISTRATION NUMBER	[redacted]
PHYSICAL ADDRESS / CHOSEN DOMICILIUM CITANDI ET EXECTUANDI OF THE CONTRACTOR	[redacted]
AUTHORISED REPRESENTATIVE	[redacted]
CAPACITY OF AUTHORISED REPRESENTATIVE	ESTIMATOR

(HEREINAFTER COLLECTIVELY REFERRED TO AS "THE PARTIES" AND INDIVIDUALLY A "PARTY")

Preamble

WHEREAS the City of Cape Town is desirous to award this Tender to the successful Contractor;

AND WHEREAS the City of Cape Town will consider and evaluate the offer made by the Tenderer/Contractor;

AND WHEREAS the Parties agree that this Contract is subject to the terms and conditions as contained in the final award of the City's Bid Adjudication Committee (BAC);

AND WHEREAS the Tenderer/Contractor agrees that the terms and conditions of the award will become binding upon communication of the award made by the BAC, upon the expiration of the prescribed appeal period in terms of Section 62 of the Municipal Systems Act and the furnishing of a duly counter signed contract by the City to the Contractor reflecting the BAC award.

NOW THEREFORE, the Parties agree and confirm that the Contract contains the following:

a) the Form of Offer and Acceptance,

b) the Contract Specific Data within the Contract Data,

c) the General Conditions of Contract for Construction Works, Third Edition, 2015,

d) the Drawings,

e) the Scope of Work,

f) the Pricing Data, and

g) the conditions of tender, the tender data and tender schedules

SIGNED AT Wetton (PLACE) ON THE 25th (DAY) OF February 2025 (MONTH AND YEAR)

[redacted]

For and on behalf of the Contractor
(Duly Authorised)
Name and Surname:
[redacted]

[redacted]

Witness 1 Signature
Name and Surname:

[redacted]

Witness 2 Signature
Name and Surname:

For and on behalf of the City of Cape Town
(Duly Authorised)

Name and Surname:

Witness 1 Signature
Name and Surname:

Witness 2 Signature

CITY OF CAPE TOWN

WATER AND SANITATION: DISTRIBUTION SERVICES

CONTRACT NO. 150Q/2024/25

TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

C1.1 Form of Offer and Acceptance

Offer

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

CONTRACT NO. 150Q/2024/25: TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

The tenderer, identified in the offer signature block, has examined the documents listed in the tender data and addenda thereto as listed in the returnable schedules, and by submitting this offer has accepted the conditions of tender.

By the representative of the tenderer, deemed to be duly authorized, signing this part of this form of offer and acceptance, the tenderer offers to perform all of the obligations and liabilities of the contractor under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the conditions of contract identified in the contract data.

The completed Schedules of Rates (excluding VAT), as contained in Part C2.2 Pricing Data, shall form the tender offer. These rates shall be multiplied, as applicable, by the quantities required in respect of relevant items to develop individual Works Projects to be allocated in accordance with the procedures described in Part C1.2 Contract Data in this Framework Contract document.

This offer may be accepted by the employer by signing the acceptance part of this form of offer and acceptance and returning one copy of this document to the tenderer before the end of the period of validity stated in the tender data, whereupon the tenderer becomes the party named as the contractor in the conditions of contract identified in the contract data.

Contractor	
Business Name	[redacted]
Business Registration	[redacted]
Tax number (VAT)	
Physical Address	
Signed – who by signature hereto warrants authority	
Name of signatory	
Signed: Date	25. 02. 2025
Signed: Location	[redacted]
Signed: Witness	
Name of Witness	

For official use.
INITIALS OF CITY O[redacted]ER OPENING
[redacted]

Acceptance

By signing this part of this form of offer and acceptance, the City of Cape Town accepts the tenderer's (now Contractor's) offer. In consideration thereof, the City of Cape Town shall pay the contractor the amount due in accordance with the conditions of contract identified in the contract data. Acceptance of the contractor's offer shall form an agreement between the City of Cape Town and the contractor upon the terms and conditions contained in this document.

The terms of the contract are contained in:

Part C1: Agreements and contract data (which includes this framework agreement)
Part C2: Pricing data
Part C3: Scope of work
Part C4: Site information

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

Deviations from and amendments to the documents listed in the tender data and any addenda thereto as listed in the returnable schedules as well as any changes to the terms of the offer agreed by the tenderer and the employer during this process of offer and acceptance, are contained in the schedule of deviations attached to and forming part of this form of offer and acceptance. No amendments to or deviations from said documents are valid unless contained in this schedule of deviations.

The contractor shall within two weeks after receiving a completed copy of the contract, including the schedule of deviations (if any), contact the City of Cape Town to arrange the delivery of any securities, bonds, guarantees, proof of insurance and any other documents to be provided in terms of the conditions of contract identified in the contract data. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of the contract.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the contractor and confirms receipt from the City of Cape Town of one complete, signed copy of this contract containing price schedule as awarded by the BAC, including the schedule of deviations (if any).

This agreement constitutes a framework contract for the purposes of developing individual Works Projects to be allocated in terms of the procedures described in the contract.

Employer	
Business Name	
Business Registration	
Tax number (VAT)	
Physical Address	
Accepted contract sum including tax	
Signed – who by signature hereto warrants authority	
Name of signatory	
Signed: Date	
Signed: Location	
Signed: Witness	
Name of Witness	

Schedule of Deviations

Notes:

1. The extent of deviations from the tender documents issued by the employer before the tender closing date is limited to those permitted in terms of the conditions of tender.
2. A tenderer's covering letter shall not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid, become the subject of agreements reached during the process of offer and acceptance, the outcome of such agreement shall be recorded here.
3. Any other matter arising from the process of offer and acceptance either as a confirmation, clarification or change to the tender documents and which it is agreed by the Parties becomes an obligation of the contract shall also be recorded here.
4. Any change or addition to the tender documents arising from the above agreements and recorded here, shall also be incorporated into the final draft of the Contract.

1 Subject . . . Tender Notices 1 and 2 . . .

Details . . . The tender notices as issued from part of this contract and are attached. . . .

2 Subject . . . Negotiations of the Tendered Rates . . .

Details . . . Certain tendered rates identified as high rates were amended through negotiations with the Tenderer. The tenderer's letter are attached to this contract. The Schedule of Rates as inserted include the amended rates. . . .

3 Subject . . . Correction of Item D11770 . . .

Details . . . Correction of Item D11770 from the incorrect rate of R18 141-26 to R19 141-26 as per correction BAC SCMB resolution 70/05/26 . . .

4 Subject . . .

Details . . .

By the duly authorised representatives signing this agreement, the employer and the tenderer agree to and accept the foregoing schedule of deviations as the only deviations from and amendments to the documents listed in the tender data and addenda thereto as listed in the returnable schedules, as well as any confirmation, clarification or changes to the terms of the offer agreed by the tenderer and the employer during this process of offer and acceptance.

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

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FINANCE
SUPPLY CHAIN MANAGEMENT

TENDERS & CONTRACTS, SUPPLY CHAIN MANAGEMENT
SCM WATER AND SANITATION

E[redacted]

NOTICE TO TENDERERS NO: 1 14 February 2025

TENDER NUMBER: 150Q/2024/25

TENDER DESCRIPTION: TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

CLOSING DATE OF TENDER: 26 FEBRUARY 2025

BOX NUMBER: 181

Dear Sir/Madam

This Notice to Tenderers No. 1 (NT1) for the abovementioned tender is issued in terms of Clause No. C.3.2 of the Standard Conditions of Tender and Part T1.2 – Tender Data. NT1 must be recorded on *Schedule 22: Record of Addenda to Tender Documents* issued to Tenderers and bound into this tender document, and you will be deemed to have made allowance necessary to provide for these amendments in your tender offer.

Your attention is specifically drawn to the tender document for the following clarifications and amendments which are to be incorporated in the tender document:

VOLUME 1 (TENDERING PROCEDURES)

1. PART C1.2 **–** CONTRACT DATA

1.1. Add new page 59-A and remove page 59 in which the following has been added:

- Page 59-A – Special materials included on the Special Materials Schedule.

VOLUME 2 (RETURNABLE DOCUMENTS)

2. PART C.2.2 **–** SCHEDULE OF RATES

2.1. Replace pages 84 and 85 with page 84-A, 84-B, 84-C and 85-A in which the following has changed:

- The relevant payment items were created for Panel 1 (3CE and higher), Panel 2 (4CE and higher) and Panel 3 (5CE and higher).

VOLUME 3 (DRAFT CONTRACT)

3. PART C.3.4 **–** CONSTRUCTION

3.1. Replace page 233 with page 233-A in which the following has changed:

- Page 233-A: PSC 8.2.7 Description amended by removing the reference to excavation and backfilling.

MINUTES OF THE NON-COMPULSORY TENDER CLARIFICATION MEETING

4. The minutes and presentation of the non-compulsory tender clarification meeting is attached.

Tenderers are therefore requested to:
1. Record receipt of this Notice on Schedule 22: Record of Addenda to Tender Documents.
2. Tenderers must sign and return this Notice (append to the relevant returnable schedule) together with their completed tender document.

Failure to return a signed copy of the Addendum may result in the Tender being declared Non-Responsive.

Yours faithfully,

p.p SCM.Tender7

_____

For: Director: Supply Chain Management

ACKNOWLEDGEMENT OF RECEIPT FOR AND ON BEHALF OF THE TENDERER: TENDER NO 16Q/2024/25

At ..... on this ..... day of 2024

Signature: .....

Name of Signatory: .....

(In ink and capitals)

TENDERER: .....

(Name of firm in ink and capital letters.

SPECIAL MATERIALS SCHEDULE

Each material dealt with as a special material in terms of Clause 4.1 of the Contract Price Adjustment Schedule of the General Conditions of Contract is stated in the list below. The provisions of Clause 6.8.3 of the General Conditions of Contract shall apply to such special materials. The base prices for the special materials (current at the time of tender) shall be as stated in the schedule below, or where required, shall be furnished by the tenderer/contractor. Only those materials listed by the Employer below shall be considered as special materials.

Special Material	Unit	Base Price
Bitumen (50/70 penetration grade)	t	R16 000.00 (January 2025, Rubis)
Bitumen (70/100 penetration grade)	t	R16 000.00 (January 2025, Rubis)

Conditions:

1) When called upon to do so, the contractor shall substantiate the prices to be used to determine the adjustment in respect of the special materials listed above with acceptable documentary evidence.
2) In the case of bituminous products, the Employer has provided, in the schedule above, a base rate for bitumen upon which the tendered rates will be deemed to be based, and which will be used for determining the adjustment in the price of such bituminous products.
3) Where an adjustment for the variation in the price of bituminous products is claimed, the claim must be substantiated by a declaration from the manufacturer, confirming the source of bitumen used in such bituminous products at the time in question.
4) Where the source of bitumen (the refinery) is located in the Western Cape Province, or where bitumen sourced from abroad is landed at a port in the Western Cape, the cost of transporting such bitumen within the boundaries of the Western Cape shall be included in the rate for bituminous products. Extra-over rates to cover the cost of transporting bitumen from beyond the borders of the Western Cape have been measured separately in the Bill of Quantities.
5) Where imported bitumen used in bituminous products is landed at a port beyond the borders of the Western Cape, the importers must clearly state whether or not their price is inclusive of transport to the Western Cape, which will determine whether extra-over transport costs are applicable, or not. The price of the imported bitumen itself must be expressed as a landed price in ZAR.

SCHEDULE A: PRELIMINARY AND GENERAL (SMALL WORKS)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
	SANS 1200 A	PRELIMINARY AND GENERAL (SMALL WORKS)		
	8.3	SCHEDULED FIXED-CHARGE AND VALUE-RELATED ITEMS		
		PANEL 1 (3CE or higher for Projects over R1m up to R3m)		
		Contractor's general obligations		
A10-1	PSA 8.3.1.1	Security (performance guarantee) (Framework contract once off pay item)	Sum	
A20-1	PSA 8.3.1.2	Insurance (blanket/umbrella policy) (Framework contract annual pay item)	Sum	
	8.3.2	Establishment of facilities on the Site		
	8.3.2.2	Facilities for the Contractor		
A30-1		a) Offices and storage sheds	Sum	
A40-1		e) Ablution and latrine facilities	Sum	
A50-1		g) Water supplies, electric power (including provision of generator) and communications	Sum	
A60-1	8.3.3	General responsibilities and other fixed-charge obligations	Sum	
A70-1	8.3.4	Removal of Site Establishment	Sum	
A80-1		Testing carried out by commercial or council laboratory as ordered by Employer's Agent	Prov Sum	10 000.00
A90-1		% Profit and Attendance for item A80	%	
	8.4	SCHEDULED TIME-RELATED ITEMS		
A100-1	8.4.1	Contractual requirements	day	
	8.4.2	Operation and Maintenance of Facilities on Site, for the duration of the Duration of Construction, except where otherwise stated		
	PSA 8.4.2.2	Facilities for the Contractor		

SCHEDULE A: PRELIMINARY AND GENERAL (SMALL WORKS)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
A110-1		a) Offices and storage sheds	day	
A120-1		e) Ablution and latrine facilities	day	
A130-1		g) Water supplies, electric power (including provision of generator) and communications	day	
A140-1	8.4.5	General responsibilities and other fixed-charge obligations	day	
		PANEL 2 (4CE or higher for Projects over R3m up to R6m)		
		Contractor's general obligations		
A10-2	PSA 8.3.1.1	Security (performance guarantee) (Framework contract once off pay item)	Sum	
A20-2	PSA 8.3.1.2	Insurance (blanket/umbrella policy) (Framework contract annual pay item)	Sum	
	8.3.2	Establishment of facilities on the Site		
	8.3.2.2	Facilities for the Contractor		
A30-2		a) Offices and storage sheds	Sum	
A40-2		e) Ablution and latrine facilities	Sum	
A50-2		g) Water supplies, electric power (including provision of generator) and communications	Sum	
A60-2	8.3.3	General responsibilities and other fixed-charge obligations	Sum	
A70-2	8.3.4	Removal of Site Establishment	Sum	
A80-2		Testing carried out by commercial or council laboratory as ordered by Employer's Agent	Prov Sum	10 000.00
A90-2		% Profit and Attendance for item A80	%	
	8.4	SCHEDULED TIME-RELATED ITEMS		
A100-2	8.4.1	Contractual requirements	day	
	8.4.2	Operation and Maintenance of Facilities on Site, for the duration of the Duration of Construction, except where otherwise stated		

SCHEDULE A: PRELIMINARY AND GENERAL (SMALL WORKS)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
	PSA 8.4.2.2	Facilities for the Contractor		
A110-2		a) Offices and storage sheds	day	
A120-2		e) Ablution and latrine facilities	day	
A130-2		g) Water supplies, electric power (including provision of generator) and communications	day	
A140-2	8.4.5	General responsibilities and other fixed-charge obligations	day	
		PANEL 3 (5CE or higher for Projects over R6m up to R10m)		
		Contractor's general obligations		
A10-3	PSA 8.3.1.1	Security (performance guarantee) (Framework contract once off pay item)	Sum	
A20-3	PSA 8.3.1.2	Insurance (blanket/umbrella policy) (Framework contract annual pay item)	Sum	
	8.3.2	Establishment of facilities on the Site		
	8.3.2.2	Facilities for the Contractor		
A30-3		a) Offices and storage sheds	Sum	
A40-3		e) Ablution and latrine facilities	Sum	
A50-3		g) Water supplies, electric power (including provision of generator) and communications	Sum	
A60-3	8.3.3	General responsibilities and other fixed-charge obligations	Sum	
A70-3	8.3.4	Removal of Site Establishment	Sum	
A80-3		Testing carried out by commercial or council laboratory as ordered by Employer's Agent	Prov Sum	10 000.00
A90-3		% Profit and Attendance for item A80	%	
	8.4	SCHEDULED TIME-RELATED ITEMS		
A100-3	8.4.1	Contractual requirements	day	
	8.4.2	Operation and Maintenance of Facilities on Site, for the duration of the Duration of Construction, except where otherwise stated		

SCHEDULE A: PRELIMINARY AND GENERAL (SMALL WORKS)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
	PSA 8.4.2.2	Facilities for the Contractor		
A110-3		a) Offices and storage sheds	day	
A120-3		e) Ablution and latrine facilities	day	
A130-3		g) Water supplies, electric power (including provision of generator) and communications	day	
A140-3	8.4.5	General responsibilities and other fixed-charge obligations	day	
	PSA 8.7	DAYWORKS (As ordered by the Employer's Agent)		
		LABOUR CHARGES		
A150		(a) Skilled Labourer	h	
A160		(b) Unskilled Labourer	h	
A170		(c) Team leader	h	
A180		(d) Foreman	h	
A190		(e) Artisan / Pipelayer/ Bricklayer	h	
A200		(f) Plant Operator	h	
A210		(g) Flagperson	h	
A220		(h) Driver	h	
A230		(i) Security Guard	h	
A240		(j) Steel Welder	h	
		MATERIALS CHARGES		
A250		(a) Actual cost of material (excl. VAT)	Prov Sum	100 000.00
A260		(b) Handling costs in respect of item A250	%	
		PLANT CHARGES (As ordered by the Employer's Agent)		
A270		(a) Backhoe / Digger loader	h	

Until required for spreading, the stockpiles of topsoil material shall be stabilized by watering or other approved means.

Add the following new sub clause:

PSC 5.9 REMOVAL AND STORAGE OF KERBING, CHANNELLING, EDGING, PAVING AND GRASSING

Where indicated by the Employer's Agent, the Contractor shall remove existing kerbing, channelling, and edging, paving and grass sods and store all materials such kerbing, channelling and edging for re-use and reinstatement on the site of the works.

Where existing kerbs are to be removed and the existing channels are to remain, the Contractor shall carefully remove the kerbs without disturbing the channels. Any channels which are disturbed or damaged during this operation shall be replaced at the Contractor's expense.

The unit of measurement will be the meter of material removed and stacked for re-use.

PSC 8 MEASUREMENT AND PAYMENT

PSC 8.1 BASIC PRINCIPLES

Add the following:

The thickness of the layer that will unavoidably be stripped during clearing of vegetation will be taken as 150 mm. This implies that levels used in earthworks quantity calculations will be 150 mm lower than the original levels.

PSC 8.2 PAYMENT

PSC 8.2.1 Clear and grub

Replace the first line with the following:

The area designated by the Employer's Agent to be cleared and grubbed will be measured in square meter to the nearest square meter or,

PSC 8.2.7 Dismantle and remove pipelines, electricity transmission lines, cables, etc.

Also applies to underground structure

Replace the second paragraph with the following:

The tendered rates shall include full compensation for the detection, disconnection, removal, disposal at a dumping site and any charges for the use of the dumping site.

In the event of the Contractor damaging any of the services he will replace it at his own cost.

a) Pipelines

Pipelines (all materials)	
i) Up to 250mm diameter	Unit: m
ii) Over 250mm diameter up to 500mm diameter	Unit: m
iii) Over 500mm diameter	Unit: m
Pipelines encased in concrete (all materials)	
iv) Up to 250mm diameter	Unit: m
v) Over 250mm diameter up to 500mm diameter	Unit: m
vi) Over 500mm diameter	Unit: m

The rate shall cover the cost of the dismantling, break up if encased in concrete, removal and disposal of existing pipe of nominal sizes to a site provided by Contractor.

b) Valve or Hydrant Chambers (Concrete) Unit : No

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STAD KAAPSTAD

FINANCE
SUPPLY CHAIN MANAGEMENT

TENDERS & CONTRACTS, SUPPLY CHAIN MANAGEMENT
SCM WATER AND SANITATION

E: [redacted]

NOTICE TO TENDERERS NO: 2 19 February 2025

TENDER NUMBER: 150Q/2024/25

TENDER DESCRIPTION: TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

CLOSING DATE OF TENDER: 26 FEBRUARY 2025

BOX NUMBER: 181

Dear Sir/Madam

This Notice to Tenderers No. 2 (NT2) for the abovementioned tender is issued in terms of Clause No. C.3.2 of the Standard Conditions of Tender and Part T1.2 – Tender Data. NT1 must be recorded on *Schedule 22: Record of Addenda to Tender Documents* issued to Tenderers and bound into this tender document, and you will be deemed to have made allowance necessary to provide for these amendments in your tender offer.

Your attention is specifically drawn to the tender document for the following clarifications and amendments, which are to be incorporated in the tender document:

VOLUME 1 (TENDERING PROCEDURES)

1. PART C1.2 **–** CONTRACT DATA

1.1. Please remove page number 100 and replace with the replacement page number 100-A.

- The concrete strength amended in payment item C800.

1.2. Please remove pages number 106, 108, 109, 110, 111, 112, 113 and 115 and replace with the replacement pages number 106-A, 108-A, 109-A, 110-A, 111-A, 112-A, 113-A and 115-A.

- All items referred to 350mm – 500mm diameter PVC fittings removed and mild steel sockets amended to plain ended.

1.3. Please remove pages number 125, 126, 127, 128, 130, 139 and 140 and replace with the replacement pages number 125-A, 126-A, 127-A, 128-A, 130-A, 139-A and 140-A.

- All items referred to 350mm – 500mm diameter PVC fittings removed and mild steel sockets amended to plain ended.

1.4. Please remove pages number 142, 143, 144, 147, 156, 158 and 165 and replace with the replacement pages number 142-A, 143-A, 144-A, 147-A, 156-A, 158-A and 165-A.

- All items referred to 350mm – 500mm diameter PVC fittings removed and mild steel sockets amended to plain ended.

1.5. Please remove page number 170 and replace with the replacement pages number 170-A and 170-B.

- The payment items were divided to include different valve sizes.

VOLUME 3 (DRAFT CONTRACT)

2. PART C.3.4 **–** CONSTRUCTION

2.1. Please remove page number 270 and replace with the replacement page number 270-A.

- Page 233-A: PSC 8.2.7 Description amended by removing the reference to excavation and backfilling.

3. PART C.4.2 **–** DRAWINGS

3.1. Two drawings are attached to be included in the tender:

- W3-AV-001 Air Valve Detail
- W4-G-015 Valve Extension Spindles

Tenderers are therefore requested to:
1. Record receipt of this Notice on Schedule 22: Record of Addenda to Tender Documents.
2. Tenderers must sign and return this Notice (append to the relevant returnable schedule) together with their completed tender document.

Failure to return a signed copy of the Addendum may result in the Tender being declared Non-Responsive.

Yours faithfully,

p.p.

_____

For: Director: Supply Chain Management

ACKNOWLEDGEMENT OF RECEIPT FOR AND ON BEHALF OF THE TENDERER: TENDER NO 150Q/2024/25

At ..... on this ..... day of 2024

Signature: .....

Name of Signatory: .....

(In ink and capitals)

TENDERER: .....

(Name of firm in ink and capital letters.

SCHEDULE C: EARTHWORKS (PIPE TRENCHES)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
C730		50mm Thick	m²	
		Continuously graded - COLTO Type Medium		
C740		30mm Thick	m²	
C750		40mm Thick	m²	
C760		50mm Thick	m²	
		Sidewalks		
		Continuously graded - COLTO Type Fine		
C770		20mm Thick	m²	
C780		30mm Thick	m²	
		Joint sealants		
C790		Application of waterproofing sealant to asphalt patches ('Colseal' or equivalent)	l	
	PSDB 8.3.6.1	Reinstate other surfaces including the following new layerworks from commercial sources:		
C800		a) Concrete (25 MPa strength, thickness according to specification, on selected layers as required for sidewalks and driveways)	m³	
	1200 MJ	SEGMENTED PAVING		
	8.2.2	Concrete interlocking block paving (Class 30, 200x100x60mm thickness) complete with 20mm sand bedding and joint filling sand		
C810		Grey interlocking pavers	m²	
C820		Tan interlocking pavers	m²	
C830		Charcoal interlocking pavers	m²	
C840		Terracotta interlocking pavers	m²	
		Concrete interlocking block paving (Class 30, 200x100x80mm thickness) complete with 20mm sand bedding and joint filling sand		
C850		Grey interlocking pavers	m²	

SCHEDULE D: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
		Supply of HDPE Pressure Pipes to SANS 4427-1 earmarked for erf connections and Horizontal Directional Drilling (SAPPMA certified)		
D570		16 mm HDPE PE 100 PN 16	m	
D580		20 mm HDPE PE 100 PN 16	m	
D590		25 mm HDPE PE 100 PN 16	m	
D610		32 mm HDPE PE 100 PN 16	m	
D620		40 mm HDPE PE 100 PN 16	m	
D630		50 mm HDPE PE 100 PN 16	m	
D640		63 mm HDPE PE 100 PN 16	m	
D650		75 mm HDPE PE 100 PN 16	m	
D660		110mm HDPE PE 100 PN 16	m	
D670		160mm HDPE PE 100 PN 16	m	
D680		200mm HDPE PE 100 PN 16	m	
D690		250mm HDPE PE 100 PN 16	m	
D700		315mm HDPE PE 100 PN 16	m	
D710		355mm HDPE PE 100 PN 16	m	
D720		400mm HDPE PE 100 PN 16	m	
D730		450mm HDPE PE 100 PN 16	m	
D740		500mm HDPE PE 100 PN 16	m	
		Supply of Pex-Aluminium-Pex multi-layer pipe PN 16 only for erf connection OD dimensions		
D750		16 mm diam.	m	

SCHEDULE D: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
D920		75 mm diam.	No.	
D930		90 mm diam.	No.	
D940		110 mm diam.	No.	
D950		160 mm diam.	No.	
D960		200 mm diam.	No.	
D970		250 mm diam.	No.	
D980		315 mm diam.	No.	
D990		355 mm diam.	No.	
D1000		400 mm diam.	No.	
D1010		450 mm diam.	No.	
D1020		500 mm diam.	No.	
	8.2.2	Supply, lay, bed, joint, incl. cut pipes to length where required, test and disinfect.		
		BENDS: All socket ends (PVC Class 16)		
		11.25 deg		
D1030		75 mm diam.	No.	
D1040		90 mm diam.	No.	
D1050		110 mm diam.	No.	
D1060		160 mm diam.	No.	
D1070		200 mm diam.	No.	
D1080		250 mm diam.	No.	
D1090		300 mm diam.	No.	

SCHEDULE D: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
		22.5 deg		
D1140		75 mm diam.	No.	
D1150		90 mm diam.	No.	
D1160		110 mm diam.	No.	
D1170		160 mm diam.	No.	
D1180		200 mm diam.	No.	
D1190		250 mm diam.	No.	
D1200		300 mm diam.	No.	
		45 deg		
D1250		75 mm diam.	No.	
D1260		90 mm diam.	No.	
D1270		110 mm diam.	No.	
D1280		160 mm diam.	No.	
D1290		200 mm diam.	No.	
D1300		250 mm diam.	No.	

SCHEDULE D: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
D1310		300 mm diam.	No.	
		90 deg		
D1360		75 mm diam.	No.	
D1370		90 mm diam.	No.	
D1380		110 mm diam.	No.	
D1390		160 mm diam.	No.	
D1400		200 mm diam.	No.	
D1410		250 mm diam.	No.	
D1420		300 mm diam.	No.	
		BENDS: All socket ends (Ductile Iron PN 16)		
		11.25 deg		
D1470		75 mm diam.	No.	
D1480		90 mm diam.	No.	
D1490		110 mm diam.	No.	

SCHEDULE D: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
D1500		160 mm diam.	No.	
D1510		200 mm diam.	No.	
D1520		250 mm diam.	No.	
D1530		300 mm diam.	No.	
		22.5 deg		
D1580		75 mm diam.	No.	
D1590		90 mm diam.	No.	
D1600		110 mm diam.	No.	
D1610		160 mm diam.	No.	
D1620		200 mm diam.	No.	
D1630		250 mm diam.	No.	
D1640		300 mm diam.	No.	
		45 deg		
D1690		75 mm diam.	No.	

SCHEDULE D: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
D1700		90 mm diam.	No.	
D1710		110 mm diam.	No.	
D1720		160 mm diam.	No.	
D1730		200 mm diam.	No.	
D1740		250 mm diam.	No.	
D1750		300 mm diam.	No.	
		90 deg		
D1800		75 mm diam.	No.	
D1810		90 mm diam.	No.	
D1820		110 mm diam.	No.	
D1830		160 mm diam.	No.	
D1840		200 mm diam.	No.	
D1850		250 mm diam.	No.	
D1860		300 mm diam.	No.	

SCHEDULE D: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
		BENDS: All plain ended (Type 1: Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent) inclusive of ranger couplings		
		11.25 deg		
D1910		75 mm diam.	No.	
D1920		90 mm diam.	No.	
D1930		110 mm diam.	No.	
D1940		160 mm diam.	No.	
D1950		200 mm diam.	No.	
D1960		250 mm diam.	No.	
D1970		300 mm diam.	No.	
D1980		350 mm diam.	No.	
D1990		400 mm diam.	No.	
D2000		450 mm diam.	No.	
D2010		500 mm diam.	No.	
		22.5 deg		
D2020		75 mm diam.	No.	
D2030		90 mm diam.	No.	
D2040		110 mm diam.	No.	
D2050		160 mm diam.	No.	
D2060		200 mm diam.	No.	
D2070		250 mm diam.	No.	

SCHEDULE D: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
D2280		200 mm diam.	No.	
D2290		250 mm diam.	No.	
D2300		300 mm diam.	No.	
D2310		350 mm diam.	No.	
D2320		400 mm diam.	No.	
D2330		450 mm diam.	No.	
D2340		500 mm diam.	No.	
		BENDS: All plain ended (Type 2: Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent) inclusive of ranger couplings		
		11.25 deg		
D2350		75 mm diam.	No.	
D2360		90 mm diam.	No.	
D2370		110 mm diam.	No.	
D2380		160 mm diam.	No.	
D2390		200 mm diam.	No.	
D2400		250 mm diam.	No.	
D2410		300 mm diam.	No.	
D2420		350 mm diam.	No.	
D2430		400 mm diam.	No.	
D2440		450 mm diam.	No.	
D2450		500 mm diam.	No.	

SCHEDULE D: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
D4210		250 x 200 mm	No.	
D4220		250 x 250 mm	No.	
D4230		300 x 110 mm	No.	
D4240		300 x 160 mm	No.	
D4250		300 x 200 mm	No.	
D4260		300 x 250 mm	No.	
D4270		300 x 300 mm	No.	

SCHEDULE D: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
		TEES: All socket ends (Ductile Iron PN 16)		
D4580		75 x 75 mm	No.	
D4590		90 x 90 mm	No.	
D4600		110 x 110 mm	No.	
D4610		160 x 110 mm	No.	
D4620		160 x 160 mm	No.	
D4630		200 x 110 mm	No.	
D4640		200 x 160 mm	No.	
D4650		200 x 200 mm	No.	

SCHEDULE D: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
D4660		250 x 110 mm	No.	
D4670		250 x 160 mm	No.	
D4680		250 x 200 mm	No.	
D4690		250 x 250 mm	No.	
D4700		300 x 110 mm	No.	
D4710		300 x 160 mm	No.	
D4720		300 x 200 mm	No.	
D4730		300 x 250 mm	No.	
D4740		300 x 300 mm	No.	

SCHEDULE D: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
		TEES: All plain ended (Type 1: Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent) inclusive of ranger couplings		
D5050		75 x 75 mm	No.	
D5060		110 x 75 mm	No.	
D5070		110 x 110 mm	No.	
D5080		160 x 110 mm	No.	
D5090		160 x 160 mm	No.	

SCHEDULE D: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
D5330		400 x 350 mm	No.	
D5340		400 x 400 mm	No.	
D5350		450 x 110 mm	No.	
D5360		450 x 160 mm	No.	
D5370		450 x 200 mm	No.	
D5380		450 x 250 mm	No.	
D5390		450 x 300 mm	No.	
D5400		450 x 350 mm	No.	
D5410		450 x 400 mm	No.	
D5420		450 x 450 mm	No.	
D5430		500 x 110 mm	No.	
D5440		500 x 160 mm	No.	
D5450		500 x 200 mm	No.	
D5460		500 x 250 mm	No.	
D5470		500 x 300 mm	No.	
D5480		500 x 350 mm	No.	
D5490		500 x 400 mm	No.	
D5500		500 x 450 mm	No.	
D5510		500 x 500 mm	No.	
		TEES: All plain ended (Type 2: Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent) inclusive of ranger couplings		
D5520		75 x 75 mm	No.	
D5530		110 x 75 mm	No.	

SCHEDULE D: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
D7310		500 x 110 mm	No.	
D7320		500 x 160 mm	No.	
D7330		500 x 200 mm	No.	
D7340		500 x 250 mm	No.	
D7350		500 x 300 mm	No.	
D7360		500 x 350 mm	No.	
D7370		500 x 400 mm	No.	
D7380		500 x 450 mm	No.	
D7390		500 x 500 mm	No.	
		HYDRANT TEES: Double socket tees with with 100mm diameter flanged branch (Ductile Iron PN 16)		
D7400		110 mm diam.	No.	
D7410		160 mm diam.	No.	
D7420		200 mm diam.	No.	
D7430		250 mm diam.	No.	
D7440		300 mm diam.	No.	
		HYDRANT TEES: Double plain ended tees with with 100mm diameter flanged branch (Type 1: Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent) inclusive of ranger couplings		
D7490		110 mm diam.	No.	

SCHEDULE D: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
D7500		160 mm diam.	No.	
D7510		200 mm diam.	No.	
D7520		250 mm diam.	No.	
D7530		300 mm diam.	No.	
D7540		350 mm diam.	No.	
D7550		400 mm diam.	No.	
D7560		450 mm diam.	No.	
D7570		500 mm diam.	No.	
		HYDRANT TEES: Double plain ended tees with with 100mm diameter flanged branch (Type 2: Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent) inclusive of ranger couplings		
D7580		110 mm diam.	No.	
D7590		160 mm diam.	No.	
D7600		200 mm diam.	No.	
D7610		250 mm diam.	No.	
D7620		300 mm diam.	No.	
D7630		350 mm diam.	No.	
D7640		400 mm diam.	No.	
D7650		450 mm diam.	No.	
D7660		500 mm diam.	No.	
		HYDRANT TEES: All flanged tees with with 100mm diameter branch (Ductile Iron PN 16)		
D7670		110 mm diam.	No.	
D7680		160 mm diam.	No.	

SCHEDULE D: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
D7870		200 mm diam.	No.	
D7880		250 mm diam.	No.	
D7890		300 mm diam.	No.	
D7900		350 mm diam.	No.	
D7910		400 mm diam.	No.	
D7920		450 mm diam.	No.	
D7930		500 mm diam.	No.	
		HYDRANT TEES: All flanged tees with with 100mm diameter branch (Type 3: Mild Steel with Cement lining and concrete sheating or equivalent)		
D7940		110 mm diam.	No.	
D7950		160 mm diam.	No.	
D7960		200 mm diam.	No.	
D7970		250 mm diam.	No.	
D7980		300 mm diam.	No.	
D7990		350 mm diam.	No.	
D8000		400 mm diam.	No.	
D8010		450 mm diam.	No.	
D8020		500 mm diam.	No.	

SCHEDULE D: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
		CROSSES: All plain ended (Type 1: Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent) inclusive of ranger couplings		
D8500		75 x 75 mm	No.	

SCHEDULE D: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
		CROSSES: All plain ended (Type 2: Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent) inclusive of ranger couplings		
D8970		75 x 75 mm	No.	
D8980		110 x 75 mm	No.	
D8990		110 x 110 mm	No.	
D9000		160 x 110 mm	No.	
D9010		160 x 160 mm	No.	
D9020		200 x 110 mm	No.	
D9030		200 x 160 mm	No.	
D9040		200 x 200 mm	No.	
D9050		250 x 110 mm	No.	
D9060		250 x 160 mm	No.	
D9070		250 x 200 mm	No.	
D9080		250 x 250 mm	No.	
D9090		300 x 110 mm	No.	
D9100		300 x 160 mm	No.	
D9110		300 x 200 mm	No.	
D9120		300 x 250 mm	No.	
D9130		300 x 300 mm	No.	
D9140		350 x 110 mm	No.	
D9150		350 x 160 mm	No.	
D9160		350 x 200 mm	No.	
D9170		350 x 250 mm	No.	

SCHEDULE D: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
D10940		300 x 250 mm diam.	No.	
		REDUCERS: All plain ended (Type 1: Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent) inclusive of ranger couplings with stainless steel bolts and nuts		
D11110		110 x 75 mm diam.	No.	
D11120		160 x 75 mm diam.	No.	
D11130		160 x 110 mm diam.	No.	
D11140		200 x 110 mm diam.	No.	

SCHEDULE D: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
		REDUCERS: All plain ended (Type 2: Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent) inclusive of ranger couplings with stainless steel bolts and nuts		
D11370		110 x 75 mm diam.	No.	
D11380		160 x 75 mm diam.	No.	
D11390		160 x 110 mm diam.	No.	
D11400		200 x 110 mm diam.	No.	
D11410		200 x 160 mm diam.	No.	
D11420		250 x 160 mm diam.	No.	
D11430		250 x 200 mm diam.	No.	
D11440		300 x 160 mm diam.	No.	
D11450		300 x 200 mm diam.	No.	
D11460		300 x 250 mm diam.	No.	
D11470		350 x 200 mm diam.	No.	
D11480		350 x 250 mm diam.	No.	
D11490		350 x 300 mm diam.	No.	
D11500		400 x 200 mm diam.	No.	
D11510		400 x 250 mm diam.	No.	
D11520		400 x 300 mm diam.	No.	
D11530		400 x 350 mm diam.	No.	
D11540		450 x 250 mm diam.	No.	
D11550		450 x 300 mm diam.	No.	
D11560		450 x 350 mm diam.	No.	
D11570		450 x 400 mm diam.	No.	

SCHEDULE D: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
D12840		300 mm diam.	No.	
		Mild Steel flanged socket adaptor with corrosion protection (PN25)		
D12890		75 mm diam.	No.	
D12900		90 mm diam.	No.	
D12910		110 mm diam.	No.	
D12920		160 mm diam.	No.	
D12930		200 mm diam.	No.	
D12940		250 mm diam.	No.	
D12950		300 mm diam.	No.	
D12960		350 mm diam.	No.	
D12970		400 mm diam.	No.	
D12980		450 mm diam.	No.	
D12990		500 mm diam.	No.	
		FLANGED SPIGOT (1 Spigot, 1 Flange end)		
		Ductile iron flanged spigot (PN 16) for PVC pipes		
D13000		75 mm diam.	No.	
D13010		90 mm diam.	No.	
D13020		110 mm diam.	No.	

SCHEDULE D: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
D13810		f) 300 mm diam.	No.	
	PS-TD 1	Installation of new valve, joint, incl cut pipes where necessary and test		
D13820		80mm or 100mm or 150mm in diameter	No.	
D13822		200mm or 250mm or 300mm in diameter	No.	
D13824		350mm or 400mm or 450mm in diameter	No.	
D13826		500mm in diameter	No.	
	PS-TD 6	Repair leaking valves - Repack gland and operate valve - All sizes		
D13830		80mm or 100mm or 150mm in diameter	No.	
D13832		200mm or 250mm or 300mm in diameter	No.	
D13834		350mm or 400mm or 450mm in diameter	No.	
D13836		500mm in diameter	No.	
	PS-TD 3	Remove existing valve on operational water pipeline and return valve to depot		
D13840		80mm or 100mm or 150mm in diameter	No.	
D13850		200mm or 250mm or 300mm in diameter	No.	
D13860		350mm or 400mm or 450mm in diameter	No.	
D13870		500mm in diameter	No.	
		Provision of Valve Extension Spindles		
D13880		500mm	No.	
D13890		750mm	No.	
D13900		1000mm	No.	
D13910		1250mm	No.	
D13920		1500mm	No.	

SCHEDULE D: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
D13930		Remove all refuse, rubble, sand, building material, etc from the valve chamber in order to proceed with the removal of the valve	No.	
D13940		Pumping out water in valve chambers to maintain dry condition in valve chamber while work is in progress	No.	
D13950		Extra - over for removal and replacement of valve chamber top cover slab	No.	
D13960		Raising or lowering of existing valve covers including top cover slab – For diameters up to below 300mm	No.	
D13965		Raising or lowering of existing valve covers including top cover slab – For diameters 300mm and above	No.	
D13970		Plaster and / or waterproof inside of valve chamber to prevent ground water seepage (infiltration)	m²	

PS-TD SPECIFICATION FOR THE REMOVAL AND REPLACEMENT OF VALVES

PS-TD 1 Installation of new valve — Unit: No

The schedule price for the installation of a valve on an existing pipe line must include the cutting into existing pipe, installation of the valve (valve priced separately), trimming of pipe ends and the fitting of couplings, testing of the valve and making good the surrounding surface area, and any incidentals required to complete the work.

Working with asbestos cement can present hazardous conditions and the Asbestos Regulation 2001 shall apply. See applicable clauses in tender.

PS-TD 2 Installation of new valve (on Steel pipeline) — Unit: No

The schedule price for the installation of a valve on an existing steel pipe line must include the excavation, cutting into existing pipe, installation of the valve (valve priced separately), welding of the joints, fitting of the couplings, testing of the valve and making good the surrounding surface area and any incidentals required to complete the work.

PS-TD 3 Removal of old and replacement of new valve — Unit: No

The Contractor will be required to cut-out and replace the defective valve.

The schedule price for the replacement of a valve shall cover the cost of isolate the water line, to expose the valve, two pipe cuts, removal of old or defective valve, installation of a new valve (valve priced separately), trim pipe ends, fitting of two couplings, backfill, testing of the new valve, removal and disposal of surplus spoil and any incidentals required to complete the work.

Working with asbestos cement can present hazardous conditions and the Asbestos Regulation 2001 shall apply. See applicable clauses in tender.

PS-TD 4 Removal of old and replacement of new valve (on Steel pipeline) — Unit: No

The Contractor will be required to cut-out and replace the defective valve.
The schedule price for the replacement of a valve, and shall cover the cost of isolate the water line, excavation to expose the valve, two pipe cuts, removal of old or defective valve, installation of a new valve (valve priced separately), weld two joints, fit two couplings, test the new valve, backfill, reinstatement of surface, removal and disposal of surplus spoil and any incidentals required to complete the work.

PS-TD 5 Construction of valve chamber boxes

In addition to the existing clauses the following shall apply:
On completion and testing of the work the lower part of each valve body must be surrounded by a properly consolidated granular fill.

Chamber walls shall consist of brickwork or precast concrete tongued and grooved components as indicated on Drawings No. W1, W3-AV-001 and W4-V-001 and building in accordance of the specific drawing as instructed.

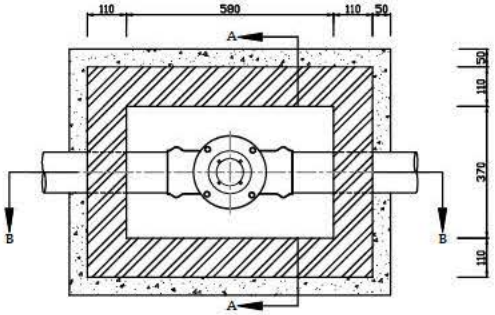
Each chamber is to be closed with the appropriate cast iron surface box or manhole cover as specified, set in cement mortar to the correct line and slope of the surrounding surface, except where otherwise indicated.

PS-TD 6 Repack gland and operate valve — Unit: No

The price tendered and the price paid for each valve operated and gland repacked during normal working hours 08:00 hours and 16:30 hours Monday to Friday inclusive, shall include full compensation for transport, supervision, labour, plant and equipment and all incidentals necessary for the completion of the work.

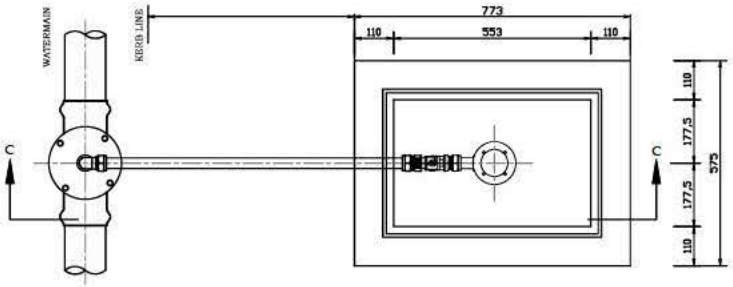
DRAWING NO. W3-AV-001

AIR VALVE CHAMBER DETAILS
(25mm, 50mm IN LINE)



PLAN VIEW

OFF SET AIR VALVE DETAILS
(25mm, 50mm)



PLAN

NOTES

1. BRASS BALL VALVE 25mm ø 50mm ø
   MALE IRON INLET FEMALE IRON
   OUTLET MUST BE SABS APPROVED
2. COVER AND FRAME (SEE W4-C-002 AND W4-C-005)
3. FEMALE IRON/COPPER COUPLER (CONEX)
4. 375mm x 375mm PRECAST SLAB
5. COPPER/MALE IRON COUPLER
6. COPPER / POLYPROP 25mm
7. AIR VALVE NOMINAL SIZE DN25
8. BRASS MIC BEND(CONEX) 25mm

AIR VALVE DESIGN SUITABLE FOR WATERMAINS 200mmØ AND SMALLER

DENZO TAPE WRAPPING TO BE APPLIED TO ALL EXPOSED STEEL

30 MPa CONCRETE IN ACCORDANCE WITH SPECIFICATION

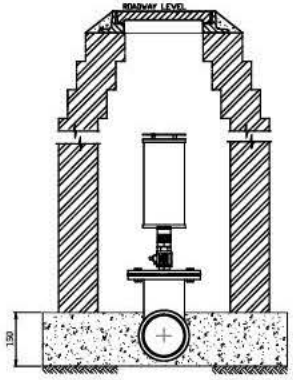
ALL BRICKWORK IN STRETCHER BOND AND CEMENT MOTAR SHALL BE 1 3 CEMENT MOTAR

FLANGE DETAIL TABLE B CS WS-11 (WORKING PRESSURE 1 2 MPa)

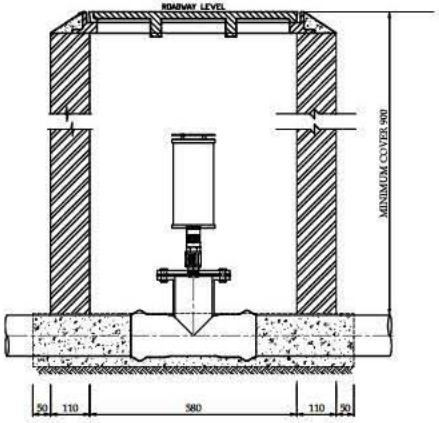
ALL COPPER PIPING TO SABS 461 1963

ALL AIR VALVES MUST COMPLY WITH SABS AND MUST BE BE APPROVED BY THE LOCAL AUTHORITY(SEE CE-WS20 1993)

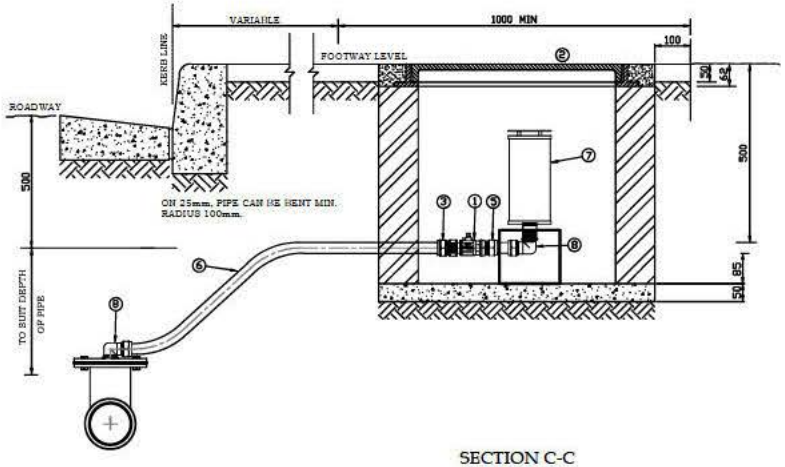
POLYPROPYLENE PIPES TO COMPLY WITH SABS 1315 1981 CLASS 16 OUTSIDE DIAMETER 460 1985 NOMINAL DIAMETERS



SECTION A-A



SECTION B-B



SECTION C-C

CITY OF CAPE TOWN
MUNICIPAL SERVICES

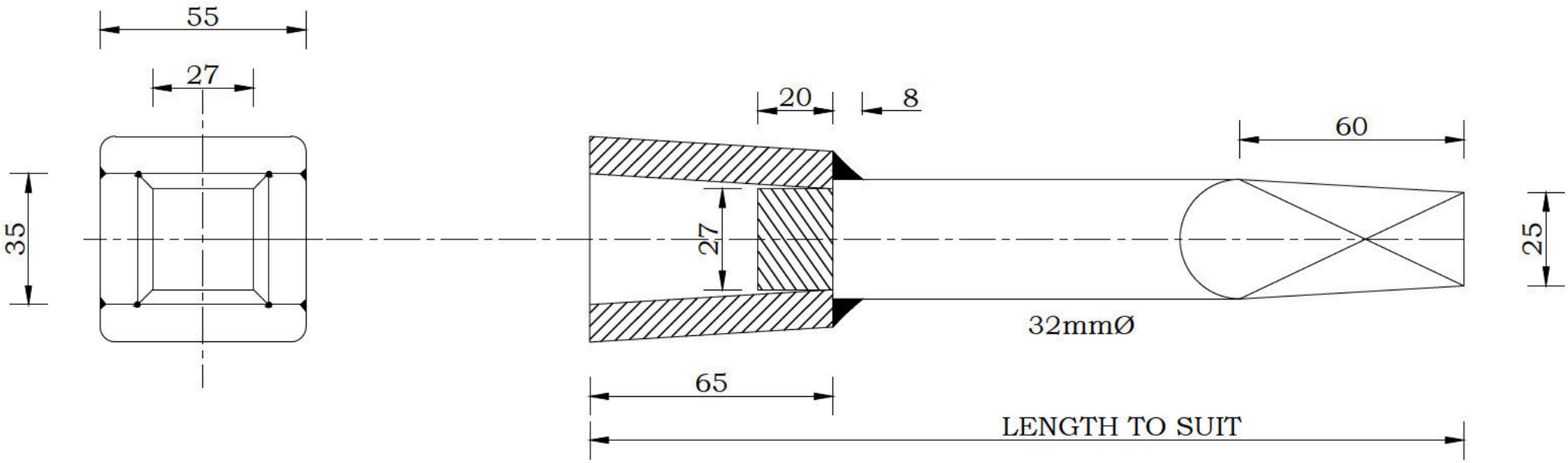
executive director : municipal services

manager : water

STANDARD DRAWING
25mm and 50mm Air Valve
Detail

REVISIONS			
1			
2			
3			

scale	drawing no.		
N.T.S	W3-AV-001		
	revision suffix		
date	drawn	designed	checked
12/04/16	EJB		



NOTES

UNLESS OTHERWISE APPROVED, RIGID (FIXED LENGTH EXTENSION SPINDLES SHALL BE SOLID (NOT TUBULAR) METALIC CONSTRUCTION.

SPINDLES UP 600mm LONG SHOULD BE OF SOLID CONSTRUCTION,HOWEVER ABOVE THIS LENGTH A LIGHTER TUBLAR CONSTRUCTION IS RECOMMENDED.

MATERIAL: STEEL BS 970 EN20

THIS DRAWING SUPERSEDES W2-3665

CITY OF CAPE TOWN
UTILITY SERVICES

executive director : utility services

manager : water

STANDARD DRAWING
EXTENSION SPINDLES
FOR VALVES

REVISIONS

scale	drawing no.
NTS	W4-G-015
	revision suffix
date 04/10/2020	drawn E.B. / designed / checked

[redacted]

150Q/AA/03

22 January 2026

CITY OF CAPE TOWN
12 HERTZOG DRIVE
CAPE TOWN
8000

ATTENTION: SUPPLY CHAIN MANAGEMENT

Dear Sir,

TENDER: 150Q/2024/25: TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

RE: RATES NEGOTIATION – HIGH RATES

With reference to your letter received on the 1st of December 2025 and the negotiating meeting held on 15 January 2026.

The table below provides supporting arguments for the items identified by the City of Cape Town with high rates and includes revised rates on items where we could offer a reduced rate.

ITEM NO	DESCRIPTION	UNIT	M&E TENDERED RATE (RAND)	TARGET RATE (RAND)	NEW RATE (RAND)	TENDERERS FEEDBACK
A40-1	e) Ablution and latrine facilities	Sum	13 049.51	4 829.20	6 276.96	Items A30-1 to A70-1 should be evaluated as a package. They cover the contractors fixed cost in terms of establishment and de-establishment. You will notice that items A30-1 to A70-1 have the same rate as we calculated the total amount necessary to cover all five of these items and divided it equally between the five items. Items A30-1 and A70-1 were not identified as high rates, therefore only 3 of the 5 items were identified as high. Considering all 5 items together might show that our

[redacted]

						combined total compares well with the other contractors. However, we reconsidered our calculation and can offer a reduced rate.
A50-1	g) Water supplies, electric power (including provision o	Sum	13 049.51	7 741.90	10 063.47	Items A30-1 to A70-1 should be evaluated as a package. They cover the contractors fixed cost in terms of establishment and de-establishment. You will notice that items A30-1 to A70-1 have the same rate as we calculated the total amount necessary to cover all five of these items and divided it equally between the five items. Items A30-1 and A70-1 were not identified as high rates, therefore only 3 of the 5 items were identified as high. Considering all 5 items together might show that our combined total compares well with the other contractors. However, we reconsidered our calculation and can offer a reduced rate.
A60-1	General responsibilities and other fixed-charge obligati	Sum	13 049.51	7 917.50	10 291.75	Items A30-1 to A70-1 should be evaluated as a package. They cover the contractors fixed cost in terms of establishment and de-establishment. You will notice that items A30-1 to A70-1 have the same rate as we calculated the total amount necessary to cover all five of these items and divided it equally between the five items. Items A30-1 and A70-1 were not identified as high rates, therefore only 3 of the 5 items were identified as high. Considering all 5 items together might show that our combined total compares well with the other contractors. However, we reconsidered our calculation and can offer a reduced rate.
A90-1	% Profit and Attendance for item A80	%	18%	12%	15,5%	This rate covers the contractors profit and attendance (overheads cost) for the actual cost incurred under the provisional sum item above. Our overhead cost is fixed, but we could reconsider the profit margin allowed for. We can therefore offer a saving on the item.
A100-1	SCHEDULED TIME-RELATED ITEMS Contractual requirements	day	12 095.46	5 710.95	11 696.62	There is no time-related P&G item allowed for in this BOQ that allows for supervision for the duration of the contract as per clause 8.4.3 of the SABS 1200A. Tenderers therefore have to allow for this cost under other items. Each contractor may however allow for this cost under different P&G items or even allow for it across various other billed items, therefore making it impossible to compare individual P&G items against each other. [redacted] allowed for the supervision and administrative cost under this item and therefore the rate might be higher than in comparison to other tenderers as they might have allowed for this cost somewhere else. We however

						reconsidered our allowance and can offer a slight discount on this rate.
A120-1	e) Ablution and latrine facilities	day	377.99	245.80	316.21	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
A40-2	e) Ablution and latrine facilities	Sum	15 749.30	5 943.60	7 725.68	Items A30-2 to A70-2 should be evaluated as a package. They cover the contractors fixed cost in terms of establishment and de-establishment. You will notice that items A30-2 to A70-2 have the same rate as we calculated the total amount necessary to cover all five of these items and divided it equally between the five items. Items A30-2 and A70-2 were not identified as high rates, therefore only 3 of the 5 items were identified as high. Considering all 5 items together might show that our combined total compares well with the other contractors. However, we reconsidered our calculation and can offer a reduced rate.
A50-2	g) Water supplies, electric power (including provision o	Sum	15 749.30	11 531.86	14 990.42	Items A30-2 to A70-2 should be evaluated as a package. They cover the contractors fixed cost in terms of establishment and de-establishment. You will notice that items A30-2 to A70-2 have the same rate as we calculated the total amount necessary to cover all five of these items and divided it equally between the five items. Items A30-2 and A70-2 were not identified as high rates, therefore only 3 of the 5 items were identified as high. Considering all 5 items together might show that our combined total compares well with the other contractors. However, we reconsidered our calculation and can offer a reduced rate.
A60-2	General responsibilities and other fixed-charge obligati	Sum	15 749.30	8 707.60	11 318.88	Items A30-2 to A70-2 should be evaluated as a package. They cover the contractors fixed cost in terms of establishment and de-establishment. You will notice that items A30-2 to A70-2 have the same rate as we calculated the total amount necessary to cover all five of these items and divided it equally between the five items. Items A30-2 and A70-2 were not identified as high rates, therefore only 3 of the 5 items were identified as high. Considering all 5 items together might show that our combined total compares well with the other contractors. However, we reconsidered our calculation and can offer a reduced rate.
A90-2	% Profit and Attendance for item A80	%	24%	13%	16%	This rate covers the contractors profit and attendance (overheads cost) for the actual cost incurred under the provisional sum item above. Our overhead cost is fixed, but we could reconsider the profit margin allowed for. We can therefore offer a saving on the item.

A100-2	SCHEDULED TIME-RELATED ITEMS Contractual requirements	day	12 095.46	7 032.44	11 696.62	There is no time-related P&G item allowed for in this BOQ that allows for supervision for the duration of the contract as per clause 8.4.3 of the SABS 1200A. Tenderers therefore have to allow for this cost under other items. Each contractor may however allow for this cost under different P&G items or even allow for it across various other billed items, therefore making it impossible to compare individual P&G items against each other. [redacted] allowed for the supervision and administrative cost under this item and therefore the rate might be higher than in comparison to other tenderers as they might have allowed for this cost somewhere else. We however reconsidered our allowance and can offer a slight discount on this rate.
A40-3	e) Ablution and latrine facilities	Sum	15 749.30	8 022.26	10 427.94	Items A30-3 to A70-3 should be evaluated as a package. They cover the contractors fixed cost in terms of establishment and de-establishment. You will notice that items A30-3 to A70-3 have the same rate as we calculated the total amount necessary to cover all five of these items and divided it equally between the five items. Items A30-3 and A70-3 were not identified as high rates, therefore only 3 of the 5 items were identified as high. Considering all 5 items together might show that our combined total compares well with the other contractors. However, we reconsidered our calculation and can offer a reduced rate.
A50-3	g) Water supplies, electric power (including provision o	Sum	15 749.30	9 531.86	12 390.42	Items A30-2 to A70-2 should be evaluated as a package. They cover the contractors fixed cost in terms of establishment and de-establishment. You will notice that items A30-2 to A70-2 have the same rate as we calculated the total amount necessary to cover all five of these items and divided it equally between the five items. Items A30-2 and A70-2 were not identified as high rates, therefore only 3 of the 5 items were identified as high. Considering all 5 items together might show that our combined total compares well with the other contractors. However, we reconsidered our calculation and can offer a reduced rate.
A60-3	General responsibilities and other fixed-charge obligati	Sum	15 749.30	9 507.60	12 358.88	Items A30-2 to A70-2 should be evaluated as a package. They cover the contractors fixed cost in terms of establishment and de-establishment. You will notice that items A30-2 to A70-2 have the same rate as we calculated the total amount necessary to cover all five of these items and divided it equally between

						the five items. Items A30-2 and A70-2 were not identified as high rates, therefore only 3 of the 5 items were identified as high. Considering all 5 items together might show that our combined total compares well with the other contractors. However, we reconsidered our calculation and can offer a reduced rate.
A90-3	% Profit and Attendance for item A80	%	24%	13%	16%	This rate covers the contractors profit and attendance (overheads cost) for the actual cost incurred under the provisional sum item above. Our overhead cost is fixed, but we could reconsider the profit margin allowed for. We can therefore offer a saving on the item.
A100-3	SCHEDULED TIME-RELATED ITEMSContractual requ	day	12 095.46	8 175.24	11 696.62	There is no time-related P&G item allowed for in this BOQ that allows for supervision for the duration of the contract as per clause 8.4.3 of the SABS 1200A. Tenderers therefore have to allow for this cost under other items. Each contractor may however allow for this cost under different P&G items or even allow for it across various other billed items, therefore making it impossible to compare individual P&G items against each other. [redacted] allowed for the supervision and administrative cost under this item and therefore the rate might be higher than in comparison to other tenderers as they might have allowed for this cost somewhere else. We however reconsidered our allowance and can offer a slight discount on this rate.
A160	(b) Unskilled Labourer	h	92.65	67.86	88.20	As per the requirements of the tender document, [redacted] remunerate its wage employees as per the BCCEI minimum wage rates for the different task grades. The suggested target rate is less than the BCCEI minimum wage rate for this task grade plus the other allowances to cover our cost to company (skills development levy, UIF, BCCEI annual leave – 15 days, BCCEI council levy, BCCEI holiday bonus, CIRBF provident fund, PPE, Public holiday pay and FEM – Workman's compensation). It therefore seems like other tenderers allowed far less than the legal requirements. We however reconsidered our mark-up on this rate and can therefore offer a slightly reduced rate.
A170	(c) Team leader	h	120.59	84.57	109.88	As per the requirements of the tender document, Martin and East remunerate its wage employees as per the BCCEI minimum wage rates for the different task grades. The suggested target rate is less than the BCCEI minimum wage rate for this task grade plus the other allowances

						to cover our cost to company (skills development levy, UIF, BCCEI annual leave – 15 days, BCCEI council levy, BCCEI holiday bonus, CIRBF provident fund, PPE, Public holiday pay and FEM – Workman's compensation. It therefore seems like other tenderers allowed far less than the legal requirements. We however reconsidered our mark-up on this rate and can therefore offer a slightly reduced rate.
A180	(d) Foreman	h	381.55	192.19	246.54	As per the requirements of the tender document, [redacted] remunerate its wage employees as per the BCCEI minimum wage rates for the different task grades. The suggested target rate is less than the BCCEI minimum wage rate for this task grade plus the other allowances to cover our cost to company (skills development levy, UIF, BCCEI annual leave – 15 days, BCCEI council levy, BCCEI holiday bonus, CIRBF provident fund, PPE, Public holiday pay and FEM – Workman's compensation. It therefore seems like other tenderers allowed far less than the legal requirements. We however reconsidered our mark-up on this rate and can therefore offer a slightly reduced rate.
A190	(e) Artisan / Pipelayer/ Bricklayer	h	236.82	97.20	120.52	As per the requirements of the tender document, [redacted] remunerate its wage employees as per the BCCEI minimum wage rates for the different task grades. The suggested target rate is less than the BCCEI minimum wage rate for this task grade plus the other allowances to cover our cost to company (skills development levy, UIF, BCCEI annual leave – 15 days, BCCEI council levy, BCCEI holiday bonus, CIRBF provident fund, PPE, Public holiday pay and FEM – Workman's compensation. It therefore seems like other tenderers allowed far less than the legal requirements. We however reconsidered our mark-up on this rate and can therefore offer a slightly reduced rate.
A200	(f) Plant Operator	h	131.48	85.99	110.44	As per the requirements of the tender document, [redacted] remunerate its wage employees as per the BCCEI minimum wage rates for the different task grades. The suggested target rate is less than the BCCEI minimum wage rate for this task grade plus the other allowances to cover our cost to company (skills development levy, UIF, BCCEI annual leave – 15 days, BCCEI council levy, BCCEI holiday bonus, CIRBF provident fund, PPE, Public holiday pay and FEM – Workman's compensation. It therefore seems like other tenderers allowed far less than

						the legal requirements. We however reconsidered our mark-up on this rate and can therefore offer a slightly reduced rate.
A210	(g) Flag person	h	92.65	66.31	85.98	As per the requirements of the tender document, [redacted] remunerate its wage employees as per the BCCEI minimum wage rates for the different task grades. The suggested target rate is less than the BCCEI minimum wage rate for this task grade plus the other allowances to cover our cost to company (skills development levy, UIF, BCCEI annual leave – 15 days, BCCEI council levy, BCCEI holiday bonus, CIRBF provident fund, PPE, Public holiday pay and FEM – Workman's compensation. It therefore seems like other tenderers allowed far less than the legal requirements. We however reconsidered our mark-up on this rate and can therefore offer a slightly reduced rate.
A220	(h) Driver	h	131.76	75.04	96.70	As per the requirements of the tender document, [redacted] remunerate its wage employees as per the BCCEI minimum wage rates for the different task grades. The suggested target rate is less than the BCCEI minimum wage rate for this task grade plus the other allowances to cover our cost to company (skills development levy, UIF, BCCEI annual leave – 15 days, BCCEI council levy, BCCEI holiday bonus, CIRBF provident fund, PPE, Public holiday pay and FEM – Workman's compensation. It therefore seems like other tenderers allowed far less than the legal requirements. We however reconsidered our mark-up on this rate and can therefore offer a slightly reduced rate.
A240	(j) Steel Welder	h	212.97	155.83	200.19	As per the requirements of the tender document, [redacted] remunerate its wage employees as per the BCCEI minimum wage rates for the different task grades. The suggested target rate is less than the BCCEI minimum wage rate for this task grade plus the other allowances to cover our cost to company (skills development levy, UIF, BCCEI annual leave – 15 days, BCCEI council levy, BCCEI holiday bonus, CIRBF provident fund, PPE, Public holiday pay and FEM – Workman's compensation. It therefore seems like other tenderers allowed far less than the legal requirements. We however reconsidered our mark-up on this rate and can therefore offer a slightly reduced rate.
A260	(b) Handling costs in respect of item A250	%	18%	12%	15,5%	This rate covers the contractors profit and attendance (overheads cost) for the actual cost incurred under the provisional sum item above. Our

						overhead cost is fixed, but we could reconsider the profit margin allowed for. We can therefore offer a saving on the item.
A380	(ii) Capacity of 6 ton	h	705.24	517.35	523.25	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
A420	(o) Light delivery vehicle(i) Capacity of 0,5 ton	h	275.94	144.70	144.18	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
A430	(ii) Capacity of 1 ton	h	319.29	176.35	180.03	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
A490	(s) Handling costs in respect of item A480	%	18%	12%	15,5%	This rate covers the contractors profit and attendance (overheads cost) for the actual cost incurred under the provisional sum item above. Our overhead cost is fixed, but we could reconsider the profit margin allowed for. We can therefore offer a saving on the item.
A500	TEMPORARY WORKS Main access roads to worksCo	m	1 190.68	649.88	725.93	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
A510	(b) Up to 7 meter width	m	1 724.25	1 107.98	1 259.5	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
A520	Removal of temporary access roads and reinstate site	m	395.08	196.23	197.54	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
A530	(b) Up to 7 meter width	m	395.08	272.58	275.64	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
A540	Accommodating traffic and maintaining temporary devi	No.	8 010.44	5 015.46	6,483.45	According to the heading for items A540 to A600, tenderers must also allow for flagmen, which is a time related cost, although the unit of measurement for these items is for a fixed quantity. The difference in rate between the tenderers could therefore be based on how many days each contractor allowed for flagmen. It is impossible to know this at tender stage. We do not want to risk reducing our allowance for flagman by that much as it is a critical health and safety requirement for this item. Only one flagman for 5 days is already around R 3 500 at the BCCEI rate including all on cost as explained above. We however reconsidered our calculation and can offer a slightly reduced rate.
A550	(b) Point repair (Over 15m and up to 30 meter)	No.	12 553.17	7 289.29	9,352.09	According to the heading for items A540 to A600, tenderers must also allow for flagmen, which is a time related cost, although the unit of measurement for these items is for a fixed quantity. The difference in rate between the tenderers could therefore be based on how many days each contractor allowed for flagmen. It is impossible to know this at tender stage. We do not want to risk reducing our allowance for flagman by that much as it is a

						critical health and safety requirement for this item. Only one flagman for 10 days is already around R 7 000 at the BCCEI rate including all on cost as explained above. All road signs and delineators must then still be set up and removed upon completion. We however reconsidered our calculation and can offer a slightly reduced rate.
A580	(e) Urban streets - One-Way traffic accommodated	km	16 734.38	12 475.48	16 090.75	According to the heading for items A540 to A600, tenderers must also allow for flagmen, which is a time related cost, although the unit of measurement for these items is for a fixed quantity. The difference in rate between the tenderers could therefore be based on how many days each contractor allowed for flagmen. It is impossible to know this at tender stage. We do not want to risk reducing our allowance for flagman by that much as it is a critical health and safety requirement for this item. Only two flagman, one on each side, for 10 days is already around R 14 000 at the BCCEI rate including all on cost as explained above. All road signs and delineators must then still be set up and removed upon completion. We however reconsidered our calculation and can offer a slightly reduced rate.
A590	(f) Urban streets - Lane Closure in and beyond junction	km	24 446.73	14 696.55	19 009.37	According to the heading for items A540 to A600, tenderers must also allow for flagmen, which is a time related cost, although the unit of measurement for these items is for a fixed quantity. The difference in rate between the tenderers could therefore be based on how many days each contractor allowed for flagmen. It is impossible to know this at tender stage. We do not want to risk reducing our allowance for flagman by that much as it is a critical health and safety requirement for this item. Four flagman, one at each end of a four way junction, for 10 days is already around R 28 000 at the BCCEI rate including all on cost as explained above. All road signs and delineators must then still be set up and removed upon completion. We however reconsidered our calculation and can offer a slightly reduced rate.
A620	(b) The use of specialist equipment for detection	h	959.21	718.87	922.32	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
A630	Hand excavation necessary for locating and exposing	m^3	623.33	417.89	528.53	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
A640	(b) In all other areas	m^3	623.33	375.40	403.93	We reviewed our calculation of the rate for this item and are able to offer

						a revised rate.
A700	(c) Operate and maintain (150 points max)	day	7 781.30	5 888.99	7 482.02	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
A710	(d) Operate and maintain (300 points max)	day	14 834.89	10 609.03	13 736.01	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
A730	(f) % Profit and Attendance for item A720	%	18%	12%	15,5%	This rate covers the contractors profit and attendance (overheads cost) for the actual cost incurred under the provisional sum item above. Our overhead cost is fixed, but we could reconsider the profit margin allowed for. We can therefore offer a saving on the item.
A780	e) PSiRA Grade C Unarmed Guard	Man-day	1 013.13	767.83	974.16	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
A960	n) Handling costs and profit for item A950	%	18%	12%	15.5%	This rate covers the contractors profit and attendance (overheads cost) for the actual cost incurred under the provisional sum item above. Our overhead cost is fixed, but we could reconsider the profit margin allowed for. We can therefore offer a saving on the item.
A1030	Medical surveilance for EPWP workers if required, as	No.	1 768.12	1 234.02	1 602.80	[redacted] outsource the medical surveillance to professionals in this field. It is important to note that an asbestos medical is more expensive than a normal medical and for an asbestos medical an x-ray must be included. The cost of the medical and the x-ray is more expensive than your target rate. Transport to and from the medical center, cost of unproductive hours and profit must then still be added. However, after reviewing our rate we can offer a slightly lower rate.
A1070	a) Handling costs and profit for item A1060	%	18%	12%	15,5%	This rate covers the contractors profit and attendance (overheads cost) for the actual cost incurred under the provisional sum item above. Our overhead cost is fixed, but we could reconsider the profit margin allowed for. We can therefore offer a saving on the item.
B20	Remove and grub trees and tree stumps of girtha) Up	No.	3 583.01	2 070.00	2 668.00	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
B30	b) over 0,5m up to and including 1,0m	No.	4 756.75	3 092.20	4 004.00	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
B140	e) Dismantle and Remove: Asphalt i) Asphalt (0mm to	m²	164.81	84.11	108.89	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
B150	ii) Asphalt (Over 50mm thick)	m²	247.21	111.14	142.80	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
B180	h) Dismantle and Remove: Fence i) All wire type fenc	m	650.61	112.82	144.81	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
B190	ii) All palisade type fencing	m	810.53	209.90	270.61	We reviewed our calculation of the rate for this item and are able to offer

						a revised rate.
B200	iii) Vibracrete walls	m	810.53	196.51	254.69	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
B250	iii) over 200mm thick concrete	m^2	467.84	269.02	280.71	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
B270	m) Dismantle and Remove: Concrete Thrust Blocks	m^3	3 538.64	1 014.19	1 294.57	Minimal allowance was made for this item. Our rate is based on 2 labourers, compressor and breakers and 3 hours for a 4ton truck to break and remove 1m3 of concrete. The target rate therefore seems very low. However, we decided to double the production to 2m3 with this team and could therefore offer a reduced rate.
B290	Remove and dispose of rubble	m^3	834.14	364.77	472.09	The rate per ton to dispose of rubble at an accredited landfill site is R 640,00 per ton. To calculate the rate per m3 you need to multiply with a factor of about 1.6. The target rate is therefore way too low for the tenderer to dispose of rubble at an accredited landfill site. It is therefore impossible to offer a big saving on this item. We however reconsidered our mark-up and can offer a slightly lower rate.
B360	g) Fence i) All wire type fencing	m	806.76	239.76	309.90	[redacted] is not a specialist fencing contractor. Prices from 3 different fencing contractors were acquired and the lowest one was selected to reinstate the fence upon completion. The rate received to reinstate the fence is almost double your target rate. Allowance must then still be made to remove the existing wall and to keep the material safe. We however reviewed the rate and can offer a slightly lower rate.
B370	ii) All palisade type fencing	m	978.29	634.44	809.13	[redacted] is not a specialist fencing contractor. Prices from 3 different fencing contractors were acquired and the lowest one was selected to reinstate the wall upon completion. The rate received to reinstate the wall is almost equal to your target rate. Allowance must then still be made to remove the existing wall and to keep the material safe. We however reviewed the rate and can offer a slightly lower rate.
B380	iii) Vibracrete walls	m	1 101.85	637.15	828.09	[redacted] is not a specialist fencing contractor. Prices from 3 different fencing contractors were acquired and the lowest one was selected to reinstate the wall upon completion. The rate received to reinstate the wall is almost equal to your target rate. Allowance must then still be made to remove the existing wall and to keep the material safe. We however reviewed the rate and can offer a slightly lower

						rate.
B420	d) Fence i) All wire type fencing	m	1 368.92	670.48	853.02	[redacted] is not a specialist fencing contractor. Prices from 3 different fencing contractors were acquired and the lowest one was selected to reinstate the fence upon completion. The rate received to reinstate the fence is almost 50% above your target rate. Allowance must then still be made to remove the existing wall and to dispose of. We however reviewed the rate and can offer a slightly lower rate.
B430	ii) All palisade type fencing	m	3 640.84	1 758.50	2 272.13	[redacted] is not a specialist fencing contractor. Prices from 3 different fencing contractors were acquired and the lowest one was selected to reinstate the fence upon completion. The rate received to reinstate the fence is almost 50% above your target rate. Allowance must then still be made to remove the existing wall and to dispose of. We however reviewed the rate and can offer a slightly lower rate.
B520	Handling costs in respect of item B510	%	18%	12%	15,5%	This rate covers the contractors profit and attendance (overheads cost) for the actual cost incurred under the provisional sum item above. Our overhead cost is fixed, but we could reconsider the profit margin allowed for. We can therefore offer a saving on the item.
C50	e) Exceeding 4,0 m but not exceeding 5,0 m	m	1 884.79	1 280.67	1 615.53	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C80	Excavate and dispose of unsuitable material from trench bottom	m³	500.00	207.58	250.00	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C110	c) Exceeding 2,0 m but not exceeding 3,0 m	m	2 181.66	1 120.08	1 450.47	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C170	d) Exceeding 3,0 m but not exceeding 4,0m	m³	1 081.63	670.76	867.56	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C180	e) Exceeding 4,0 m but not exceeding 5,0 m	m³	2 071.86	1 048.20	1 327.05	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C230	By importation from commercial source (As approved	m³	735.22	471.67	613.14	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C300	iv) 4,0m - 5,0m	m	8 753.89	4 947.97	6 352.25	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C350	c) Shoring design and approval costs as approved by t	h	2 857.14	1 652.53	2 035.00	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C410	f) Bulk water mains	No.	1 500.00	529.00	680.00	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C430	h) Stormwater pipes over 600mm dia.	No.	1 000.00	426.00	550.00	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C450	j) Sewer pipes up to 300 mm dia.	No.	350.00	261.70	330.00	We reviewed our calculation of the rate for this item and are able to offer a revised rate.

C460	k) Sewer pipes over 300 mm dia.	No.	500.00	300.60	390.00	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C630	FINISHING (REINSTATEMENT)Reinsta te road surface	m3	979.77	729.12	942.09	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C640	Subbase Construct subbase with G5 material from com	m3	1 373.95	832.23	1 077.77	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C650	Process subbase material by means of cement stabilization	m3	1 373.95	671.18	827.37	This item is not an extra over item on item C640 above. It is therefore the same process and material supply as per item C640, but with additional P&L cost to add the cement. The rate should therefore be higher than for item C640, but your target rate for this item is lower. We can therefore not reduce our rate much closer to your target rate. We can however offer a slightly lower rate.
C670	Base Course Construct base with G4 material from com	m3	1 512.94	1 105.14	1 433.17	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C790	Joint sealants Application of waterproofing sealant to a	l	96.09	54.12	68.86	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C800	Reinstate other surfaces including the following new la	m3	4 571.42	3 200.52	4 070.00	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C810	SEGMENTED PAVING Concrete interlocking block pav	m²	421.59	302.84	390.36	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C820	Tan interlocking pavers	m²	437.60	314.52	405.18	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C830	Charcoal interlocking pavers	m²	435.77	313.44	403.49	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C840	Terracotta interlocking pavers	m²	437.01	315.80	404.63	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C930	Concrete straight edge bond paving blocks (Class 30,	m²	444.62	333.05	411.68	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C950	Charcoal interlocking pavers	m²	461.91	355.12	446.59	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C970	Concrete cobble paving blocks (Class 30, 50mm thick	m²	566.32	415.06	524.36	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C980	Double charcoal cobble	m²	566.32	434.89	551.00	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C990	Concrete cobble paving blocks (Class 30, 70mm thick	m²	719.52	509.26	661.66	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C1000	Double charcoal cobble	m²	719.52	528.92	676.98	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C1040	(ii) Wheatstone or equivalent	m²	754.12	524.61	678.76	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
C1050	Installation of pavers (Paver costs measured	m²	217.15	133.85	173.71	We reviewed our calculation of the rate for this item and are able to offer

	separatel					a revised rate.
C1070	ii) Handling costs and profit for item C1060	%	18%	12%	15.5%	This rate covers the contractors profit and attendance (overheads cost) for the actual cost incurred under the provisional sum item above. Our overhead cost is fixed, but we could reconsider the profit margin allowed for. We can therefore offer a saving on the item.
D160	200 mm diam.	m	729.96	415.21	429.96	There seems to be a mistake with the rate indicated by the City. The rate submitted by [redacted] at time of tender is R 429.96.
D750	Supply of Pex-Aluminium-Pex multi-layer pipe PN 16 o	m	44.48	32.10	40.32	This item is for the supply of the pipe only. At time of tender we acquired 3 quotes from pipe suppliers and selected the lowest price received. We therefore cannot offer a big discount. We however reconsidered our mark-up and can offer a slightly lower rate.
D760	20 mm diam.	m	74.13	48.71	63.00	This item is for the supply of the pipe only. At time of tender we acquired 3 quotes from pipe suppliers and selected the lowest price received. We therefore cannot offer a big discount. We however reconsidered our mark-up and can offer a slightly lower rate.
D770	25 mm diam.	m	117.37	78.92	102.51	This item is for the supply of the pipe only. At time of tender we acquired 3 quotes from pipe suppliers and selected the lowest price received. We therefore cannot offer a big discount. We however reconsidered our mark-up and can offer a slightly lower rate.
D780	32 mm diam.	m	234.75	120.42	156.47	This item is for the supply of the pipe only. At time of tender we acquired 3 quotes from pipe suppliers and selected the lowest price received. We therefore cannot offer a big discount. We however reconsidered our mark-up and can offer a slightly lower rate.
D790	40 mm diam.	m	352.12	171.23	219.45	This item is for the supply of the pipe only. At time of tender we acquired 3 quotes from pipe suppliers and selected the lowest price received. We therefore cannot offer a big discount. We however reconsidered our mark-up and can offer a slightly lower rate.
D910	JOINTING (POINT REPAIRS)Cut into existing pipeline	No.	2 795.14	1 996.74	2 588.09	The heading for this item states that the tenderer must include two long collar detachable joints to cut into an existing pipeline. [redacted] further allowed for a 2m pipe length in order to connect to the existing pipeline. The cost price for these two collars and the 2m length of pipe is higher than the target rate. We therefore cannot reduce our rate significantly to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our

						mark-up. We can therefore offer a slightly reduced rate.
D930	90 mm diam.	No.	4 042.49	2 604.74	3 344.25	The heading for this item states that the tenderer must include two long collar detachable joints to cut into an existing pipeline. [redacted] further allowed for a 2m pipe length in order to connect to the existing pipeline. The cost price for these two collars and the 2m length of pipe is higher than the target rate. We therefore cannot reduce our rate significantly to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D940	110 mm diam.	No.	4 734.38	2 889.13	3 723.86	The heading for this item states that the tenderer must include two long collar detachable joints to cut into an existing pipeline. [redacted] further allowed for a 2m pipe length in order to connect to the existing pipeline. The cost price for these two collars and the 2m length of pipe is higher than the target rate. We therefore cannot reduce our rate significantly to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D950	160 mm diam.	No.	5 563.41	4 123.57	4 953.18	The heading for this item states that the tenderer must include two long collar detachable joints to cut into an existing pipeline. [redacted] further allowed for a 2m pipe length in order to connect to the existing pipeline. The cost price for these two collars and the 2m length of pipe is higher than the target rate. We therefore cannot reduce our rate significantly to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D960	200 mm diam.	No.	7 598.43	4 492.51	5 796.22	The heading for this item states that the tenderer must include two long collar detachable joints to cut into an existing pipeline. [redacted] further allowed for a 2m pipe length in order to connect to the existing pipeline. The cost price for these two collars and the 2m length of pipe is higher than the target rate. We therefore cannot reduce our rate significantly to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D970	250 mm diam.	No.	10 189.91	6 652.31	8 643.97	The heading for this item states that the tenderer must include two

						long collar detachable joints to cut into an existing pipeline. [redacted] further allowed for a 2m pipe length in order to connect to the existing pipeline. The cost price for these two collars and the 2m length of pipe is higher than the target rate. We therefore cannot reduce our rate significantly to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D980	315 mm diam.	No.	12 831.46	8 601.95	11 090.23	The heading for this item states that the tenderer must include two long collar detachable joints to cut into an existing pipeline. [redacted] further allowed for a 2m pipe length in order to connect to the existing pipeline. The cost price for these two collars and the 2m length of pipe is higher than the target rate. We therefore cannot reduce our rate significantly to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D990	355 mm diam.	No.	21 376.10	9 611.79	12 334.98	The heading for this item states that the tenderer must include two long collar detachable joints to cut into an existing pipeline. [redacted] further allowed for a 2m pipe length in order to connect to the existing pipeline. The cost price for these two collars and the 2m length of pipe is higher than the target rate. We therefore cannot reduce our rate significantly to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D1000	400 mm diam.	No.	25 424.48	16 374.11	21 180.06	The heading for this item states that the tenderer must include two long collar detachable joints to cut into an existing pipeline. [redacted] urther allowed for a 2m pipe length in order to connect to the existing pipeline. The cost price for these two collars and the 2m length of pipe is higher than the target rate. We therefore cannot reduce our rate significantly to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D1010	450 mm diam.	No.	31 096.74	18 371.29	23 696.91	The heading for this item states that the tenderer must include two long collar detachable joints to cut into an existing pipeline. [redacted] urther allowed for a 2m pipe length in order to connect to the

						existing pipeline. The cost price for these two collars and the 2m length of pipe is higher than the target rate. We therefore cannot reduce our rate significantly to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D1020	500 mm diam.	No.	33 557.45	20 705.35	26 897.45	The heading for this item states that the tenderer must include two long collar detachable joints to cut into an existing pipeline. [redacted] further allowed for a 2m pipe length in order to connect to the existing pipeline. The cost price for these two collars and the 2m length of pipe is higher than the target rate. We therefore cannot reduce our rate significantly to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D1910	BENDS: All plain ended (Type 1: Mild Steel hot dipped	No.	3 776.26	2 272.37	2 930.80	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D1920	90 mm diam.	No.	4 238.29	2 552.10	3 288.15	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D1930	110 mm diam.	No.	4 981.19	2 970.56	3 857.99	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in

						order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D1940	160 mm diam.	No.	7 801.05	4 481.68	5 793.98	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D1950	200 mm diam.	No.	9 386.83	6 246.45	8 102.42	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D1960	250 mm diam.	No.	14 068.00	9 603.84	12 305.67	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D1970	300 mm diam.	No.	19 321.01	12 114.56	15 688.75	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We

						can therefore offer a slightly reduced rate.
D1980	350 mm diam.	No.	25 952.03	14 636.55	18 929.59	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D1990	400 mm diam.	No.	33 383.00	20 222.68	26 057.14	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2000	450 mm diam.	No.	36 764.86	23 384.96	30 274.90	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2010	500 mm diam.	No.	49 745.61	36 336.22	44 289.18	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2020	22.5 deg75 mm diam.	No.	3 776.26	2 273.56	2 930.80	The target rate for this item is less than the cost of purchasing a Mild

						Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2030	90 mm diam.	No.	4 238.29	2 553.00	3 288.15	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2040	110 mm diam.	No.	4 981.19	2 972.06	3 861.81	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2050	160 mm diam.	No.	7 801.05	4 483.77	5 793.98	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2060	200 mm diam.	No.	9 386.83	6 247.64	7 993.22	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which

						should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2070	250 mm diam.	No.	14 068.00	9 605.63	12 305.67	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2080	300 mm diam.	No.	19 321.01	12 115.76	15 688.75	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2090	350 mm diam.	No.	25 952.03	14 638.34	18 929.59	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2100	400 mm diam.	No.	33 383.00	20 223.87	26 057.14	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get

						closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2110	450 mm diam.	No.	36 764.86	23 386.45	30 130.35	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2120	500 mm diam.	No.	49 745.61	36 336.22	45 069.04	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2130	45 deg75 mm diam.	No.	3 776.26	2 303.89	2 930.80	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2140	90 mm diam.	No.	4 238.29	2 583.62	3 288.15	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can

						therefore offer a slightly reduced rate.
D2150	110 mm diam.	No.	4 981.19	3 019.78	3 861.81	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2160	160 mm diam.	No.	7 801.05	4 578.62	5 854.58	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2170	200 mm diam.	No.	9 386.83	6 350.00	8 138.82	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2180	250 mm diam.	No.	14 068.00	9 760.72	12 524.93	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2190	300 mm diam.	No.	19 321.01	12 296.17	15 840.05	The target rate for this item is less than the cost of purchasing a Mild

						Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2200	350 mm diam.	No.	25 952.03	16 188.23	20 864.74	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2210	400 mm diam.	No.	33 383.00	20 842.08	26 842.32	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2220	450 mm diam.	No.	36 764.86	24 381.16	31 286.75	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2230	500 mm diam.	No.	49 745.61	37 566.06	45 069.04	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which

						should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2240	90 deg75 mm diam.	No.	3 904.14	2 461.23	3 178.05	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2250	90 mm diam.	No.	4 366.16	2 733.75	3 553.40	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2260	110 mm diam.	No.	5 086.82	3 196.32	4 138.31	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2270	160 mm diam.	No.	8 017.88	4 935.89	6 390.17	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get

						closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2280	200 mm diam.	No.	9 525.82	6 859.74	8,554.90	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2290	250 mm diam.	No.	14 518.34	10 808.85	13,492.26	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2300	300 mm diam.	No.	19 543.40	13 427.62	17,399.75	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2310	350 mm diam.	No.	26 396.82	17 507.06	22 672.24	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can

						therefore offer a slightly reduced rate.
D2320	400 mm diam.	No.	33 614.29	22 832.53	29 400.05	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2330	450 mm diam.	No.	37 098.45	26 420.40	33,612.85	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2350	BENDS: All plain ended (Type 2: Mild Steel with Corroc	No.	4 159.89	2 545.32	3 305.41	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2360	90 mm diam.	No.	4 621.92	2 751.77	3 547.67	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2370	110 mm diam.	No.	5 587.21	3 364.14	4 327.79	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent

						plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2380	160 mm diam.	No.	9 135.41	5 199.14	6 633.98	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2390	200 mm diam.	No.	11 221.57	7 174.20	9 114.22	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2400	250 mm diam.	No.	17 125.91	10 893.53	13 903.63	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2410	300 mm diam.	No.	23 307.41	14 500.00	18 823.47	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance

						to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2420	350 mm diam.	No.	30 972.57	16 998.13	21 955.59	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2430	400 mm diam.	No.	39 524.40	23 691.86	30 517.58	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2440	450 mm diam.	No.	43 864.78	27 522.77	35 587.75	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2450	500 mm diam.	No.	53 081.52	38 854.34	48 926.90	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2460	22.5 deg75 mm diam.	No.	4 159.89	2 560.87	3 321.34	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two

						ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2470	90 mm diam.	No.	4 621.92	2 776.60	3 583.13	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2480	110 mm diam.	No.	5 587.21	3 389.57	4 370.89	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2490	160 mm diam.	No.	9 135.41	5 251.61	6 705.38	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2500	200 mm diam.	No.	11 221.57	7 259.76	9 377.17	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our

						mark-up. We can therefore offer a slightly reduced rate.
D2510	250 mm diam.	No.	17 125.91	11 022.32	14 306.77	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2520	300 mm diam.	No.	23 307.41	14 676.75	18 915.25	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2530	350 mm diam.	No.	30 972.57	17 227.50	22 077.75	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2540	400 mm diam.	No.	39 524.40	23 978.69	31 140.45	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2550	450 mm diam.	No.	43 864.78	27 877.76	35 934.32	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be

						inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2560	500 mm diam.	No.	53 081.52	39 282.98	49 343.83	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2570	45 deg75 mm diam.	No.	4 159.89	2 589.67	3 353.20	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2580	90 mm diam.	No.	4 621.92	2 824.85	3 654.04	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2590	110 mm diam.	No.	5 587.21	3 439.56	4 457.10	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a

						slightly reduced rate.
D2600	160 mm diam.	No.	9 135.41	5 410.84	6 919.58	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2610	200 mm diam.	No.	11 221.57	7 464.95	9 640.12	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2620	250 mm diam.	No.	17 125.91	11 396.13	14 709.91	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2630	300 mm diam.	No.	23 307.41	15 203.41	19 649.51	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2640	350 mm diam.	No.	30 972.57	19 031.58	24 643.27	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in

						the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2650	400 mm diam.	No.	39 524.40	25 050.91	32 386.19	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2660	450 mm diam.	No.	43 864.78	29 577.36	38 360.27	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2680	90 deg75 mm diam.	No.	4 271.09	2 794.35	3 606.07	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2690	90 mm diam.	No.	4 733.11	3 067.72	3 959.47	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.

D2700	110 mm diam.	No.	5 670.61	3 669.32	4 742.15	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2710	160 mm diam.	No.	9 691.40	5 982.95	7 755.53	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2720	200 mm diam.	No.	11 610.76	8 212.45	10 337.22	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2730	250 mm diam.	No.	17 548.46	12 652.24	15 623.63	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2740	300 mm diam.	No.	24 658.45	16 816.40	21 759.25	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can

						therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2750	350 mm diam.	No.	37 510.94	22 421.86	28 937.67	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2760	400 mm diam.	No.	47 966.46	29 789.86	38 717.67	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2770	450 mm diam.	No.	53 531.12	34 794.46	45 110.66	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2780	500 mm diam.	No.	64 885.06	46 500.32	60 330.36	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend as well as the two ranger couplings which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2870	400 mm diam.	No.	29 675.45	20 267.35	26 188.73	The target rate for this item is less

						than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2880	450 mm diam.	No.	32 299.69	24 180.14	31 401.18	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2980	400 mm diam.	No.	29 675.45	20 267.35	R 26,304.59	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D2990	450 mm diam.	No.	32 299.69	24 180.14	R 31,401.18	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D3090	400 mm diam.	No.	29 675.45	20 320.75	26 397.28	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend

						including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D3100	450 mm diam.	No.	32 299.69	24 267.54	31 401.18	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D3200	400 mm diam.	No.	29 932.44	20 525.59	26 649.25	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D3210	450 mm diam.	No.	32 670.35	24 593.11	31 761.18	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended bend including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D3310	400 mm diam.	No.	36 499.23	25 278.30	32 610.48	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly

						reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D3320	450 mm diam.	No.	40 188.49	29 863.79	38 746.37	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D3420	400 mm diam.	No.	36 499.23	25 622.49	33 184.38	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D3430	450 mm diam.	No.	40 188.49	30 289.79	39 063.18	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D3530	400 mm diam.	No.	36 499.23	26 364.54	34 045.23	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as

						well as our mark-up. We can therefore offer a slightly reduced rate.
D3630	350 mm diam.	No.	33 358.97	25 233.43	32 422.49	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D3640	400 mm diam.	No.	45 879.29	31 997.13	40 961.68	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D3650	450 mm diam.	No.	50 928.86	37 355.09	48 485.43	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended bend including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D3740	350 mm diam.	No.	18 335.05	13 817.44	17 830.49	The target rate for this item is less than the cost of purchasing a double flanged cement lining and concreate sheating or equivalent bend including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D3750	400 mm diam.	No.	27 416.92	18 266.24	23 662.61	The target rate for this item is less than the cost of purchasing a

						double flanged cement lining and concreate sheating or equivalent bend including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D3760	450 mm diam.	No.	30 075.76	22 230.50	28 066.38	The target rate for this item is less than the cost of purchasing a double flanged cement lining and concreate sheating or equivalent bend including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D3850	350 mm diam.	No.	18 335.05	13 817.44	17 830.49	The target rate for this item is less than the cost of purchasing a double flanged cement lining and concreate sheating or equivalent bend including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D3860	400 mm diam.	No.	27 416.92	18 266.24	23 743.94	The target rate for this item is less than the cost of purchasing a double flanged cement lining and concreate sheating or equivalent bend including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D3870	450 mm diam.	No.	30 075.76	22 230.50	28 066.38	The target rate for this item is less than the cost of purchasing a double flanged cement lining and concreate sheating or equivalent bend including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target

						rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D3960	350 mm diam.	No.	18 335.05	13 817.44	17 830.49	The target rate for this item is less than the cost of purchasing a double flanged cement lining and concreate sheating or equivalent bend including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D3970	400 mm diam.	No.	27 416.92	18 319.64	23 769.33	The target rate for this item is less than the cost of purchasing a double flanged cement lining and concreate sheating or equivalent bend including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D3980	450 mm diam.	No.	30 075.76	22 239.65	28 066.38	The target rate for this item is less than the cost of purchasing a double flanged cement lining and concreate sheating or equivalent bend including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D4080	400 mm diam.	No.	30 488.42	20 499.19	26 548.50	The target rate for this item is less than the cost of purchasing a double flanged cement lining and concreate sheating or equivalent bend including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D4090	450 mm diam.	No.	32 361.47	23 828.85	30 193.88	The target rate for this item is less than the cost of purchasing a double flanged cement lining and

						concreate sheating or equivalent bend including stainless steel nuts and bolts which should be inclusive to the price as stated in the heading to this item. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D4190	250 x 110 mm	No.	7 676.29	3 883.99	5 019.46	The target rate for this item is less than the cost of purchasing a PVC class 16 socketed tee. The material portion of this rate is about 99%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D4200	250 x 160 mm	No.	7 682.46	4 022.17	5209.52	The target rate for this item is less than the cost of purchasing a PVC class 16 socketed tee. The material portion of this rate is about 99%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D4210	250 x 200 mm	No.	7 687.41	4 185.43	5 429.24	The target rate for this item is less than the cost of purchasing a PVC class 16 socketed tee. The material portion of this rate is about 99%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D4220	250 x 250 mm	No.	7 070.88	4 197.85	5 448.10	The target rate for this item is less than the cost of purchasing a PVC class 16 socketed tee. The material portion of this rate is about 99%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D4230	300 x 110 mm	No.	14 518.59	7 426.02	9 422.10	The target rate for this item is less than the cost of purchasing a PVC class 16 socketed tee. The material portion of this rate is about 99%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour

						allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D4240	300 x 160 mm	No.	14 524.77	7 024.01	9 077.20	The target rate for this item is less than the cost of purchasing a PVC class 16 socketed tee. The material portion of this rate is about 99%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D4250	300 x 200 mm	No.	14 529.71	8 251.13	10 600.00	The target rate for this item is less than the cost of purchasing a PVC class 16 socketed tee. The material portion of this rate is about 99%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D4260	300 x 250 mm	No.	14 535.89	8 803.98	11 423.10	The target rate for this item is less than the cost of purchasing a PVC class 16 socketed tee. The material portion of this rate is about 99%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D4270	300 x 300 mm	No.	11 230.88	6 723.63	8 739.00	The target rate for this item is less than the cost of purchasing a PVC class 16 socketed tee. The material portion of this rate is about 99%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5050	TEES: All plain ended (Type 1: Mild Steel hot dipped g	No.	5 208.17	2 573.16	3 310.30	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a

						slightly reduced rate.
D5060	110 x 75 mm	No.	6 507.05	3 189.81	4 125.16	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5070	110 x 110 mm	No.	7 174.23	3 445.48	4 429.06	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5080	160 x 110 mm	No.	10 033.02	4 988.67	6 415.25	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5090	160 x 160 mm	No.	11 133.25	5 504.18	7 019.84	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a

						slightly reduced rate.
D5100	200 x 110 mm	No.	10 776.82	5 891.54	7 569.08	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5110	200 x 160 mm	No.	12 494.19	6 865.41	8 862.78	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5120	200 x 200 mm	No.	14 458.30	7 554.32	9 789.02	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5130	250 x 110 mm	No.	15 857.86	9 373.14	12 115.67	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a

						slightly reduced rate.
D5140	250 x 160 mm	No.	18 715.00	10 570.96	13 696.22	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5150	250 x 200 mm	No.	19 762.23	11 448.16	14 772.61	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5160	250 x 250 mm	No.	19 925.80	11 422.46	14 736.32	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5170	300 x 110 mm	No.	19 685.91	11 257.30	14 424.63	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a

						slightly reduced rate.
D5180	300 x 160 mm	No.	21 514.47	12 145.13	15 756.63	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5190	300 x 200 mm	No.	21 934.55	12 891.90	16 755.83	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5200	300 x 250 mm	No.	23 614.86	13 920.26	18 034.23	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5210	300 x 300 mm	No.	25 219.16	14 151.93	18 363.21	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a

						slightly reduced rate.
D5220	350 x 110 mm	No.	27 081.93	16 717.22	21 542.02	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5230	350 x 160 mm	No.	28 204.40	17 307.62	22 432.35	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5240	350 x 200 mm	No.	29 219.38	18 435.44	23 700.25	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5250	350 x 250 mm	No.	30 632.81	19 408.98	24 844.25	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a

						slightly reduced rate.
D5260	350 x 300 mm	No.	32 092.50	20 597.38	26 031.34	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5270	350 x 350 mm	No.	36 335.89	21 702.73	28 023.59	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5280	400 x 110 mm	No.	31 481.60	19 704.68	25 543.94	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5290	400 x 160 mm	No.	35 005.92	21 959.34	28 396.44	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a

						slightly reduced rate.
D5300	400 x 200 mm	No.	35 737.35	22 854.30	28 988.44	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5310	400 x 250 mm	No.	37 751.25	24 282.16	30 618.44	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5320	400 x 300 mm	No.	39 686.95	25 140.49	32 194.22	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5330	400 x 350 mm	No.	42 379.14	26 718.97	34 373.22	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a

						slightly reduced rate.
D5340	400 x 400 mm	No.	44 628.41	27 975.26	36 193.72	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5350	450 x 110 mm	No.	38 568.72	25 825.66	32 819.75	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5360	450 x 160 mm	No.	40 063.70	26 697.49	34 090.25	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5370	450 x 200 mm	No.	40 444.86	27 221.14	34 414.18	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a

						slightly reduced rate.
D5380	450 x 250 mm	No.	41 830.50	28 073.36	35 591.75	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5390	450 x 300 mm	No.	43 257.30	28 594.36	36 812.79	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5400	450 x 350 mm	No.	45 777.14	30 022.06	38 954.26	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5410	450 x 400 mm	No.	47 809.57	31 088.99	40 304.71	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a

						slightly reduced rate.
D5420	450 x 450 mm	No.	49 329.26	32 781.00	41 973.01	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5440	500 x 160 mm	No.	46 203.40	35 434.73	46 002.58	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5470	500 x 300 mm	No.	50 507.93	38 352.36	48 928.88	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5480	500 x 350 mm	No.	53 016.65	39 770.20	51,365.48	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a

						slightly reduced rate.
D5490	500 x 400 mm	No.	55 165.84	40 938.83	53 019.08	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5500	500 x 450 mm	No.	56 073.94	42 100.15	54 334.88	The target rate for this item is less than the cost of purchasing a Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5520	TEES: All plain ended (Type 2: Mild Steel with Corroco	No.	5 597.36	3 401.33	4 419.85	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5530	110 x 75 mm	No.	6 979.64	4 339.14	5 615.94	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced

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D5540	110 x 110 mm	No.	7 719.10	4 843.12	6 268.81	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5550	160 x 110 mm	No.	10 811.40	6 690.08	8 690.92	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5560	160 x 160 mm	No.	11 950.55	7 169.17	9 226.96	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5570	200 x 110 mm	No.	11 686.41	7 882.00	10 129.28	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced

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D5580	200 x 160 mm	No.	13 596.15	9 251.52	11 997.62	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5590	200 x 200 mm	No.	14 563.32	10 066.60	13 080.97	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5600	250 x 110 mm	No.	18 776.78	13 279.28	16 717.22	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5610	250 x 160 mm	No.	20 688.74	14 602.43	18 419.47	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced

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D5620	250 x 200 mm	No.	21 976.16	16 084.90	20 264.45	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5630	250 x 250 mm	No.	21 843.96	15 007.21	19 447.97	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5640	300 x 110 mm	No.	21 548.45	14 753.47	19 014.71	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5650	300 x 160 mm	No.	23 599.41	15 842.25	20 450.56	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced

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D5660	300 x 200 mm	No.	24 102.89	16 504.41	21 077.43	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5670	300 x 250 mm	No.	25 866.59	17 569.28	22 619.13	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5680	300 x 300 mm	No.	27 582.10	18 248.26	23 463.59	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5690	350 x 110 mm	No.	29 564.95	18 909.15	24 448.37	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced

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D5700	350 x 160 mm	No.	30 734.12	19 408.23	24 926.25	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5710	350 x 200 mm	No.	31 982.62	20 686.23	26 698.09	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5720	350 x 250 mm	No.	33 529.49	21 429.31	27 721.35	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5730	350 x 300 mm	No.	34 940.25	22 010.70	28 336.24	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced

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D5740	350 x 350 mm	No.	39 644.00	24 976.10	32 143.34	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5750	400 x 110 mm	No.	35 267.85	21 486.81	27 771.14	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5760	400 x 160 mm	No.	38 236.19	24 590.73	31 617.19	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5770	400 x 200 mm	No.	39 128.85	25 522.25	32 974.84	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced

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D5780	400 x 250 mm	No.	41 309.55	26 965.19	34 810.44	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5790	400 x 300 mm	No.	43 423.16	28 108.58	36 250.82	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5800	400 x 350 mm	No.	46 187.63	29 247.46	37 822.30	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5810	400 x 400 mm	No.	48 108.87	30 467.15	39 392.85	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced

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D5820	450 x 110 mm	No.	42 488.41	29 393.90	37 828.00	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5830	450 x 160 mm	No.	44 122.38	30 347.04	39 282.75	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5840	450 x 200 mm	No.	44 598.06	30 856.22	39 706.25	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5850	450 x 250 mm	No.	46 167.17	26 424.28	34 164.45	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced

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D5860	450 x 300 mm	No.	47 599.54	31 977.91	41 253.21	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5870	450 x 350 mm	No.	50 108.26	32 901.03	42 239.63	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5880	450 x 400 mm	No.	52 346.40	34 020.45	44 123.59	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5890	450 x 450 mm	No.	54 449.98	35 878.34	46 324.74	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced

						rate.
D5900	500 x 110 mm	No.	49 823.47	36 765.35	47 503.31	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5910	500 x 160 mm	No.	51 985.63	37 759.15	48 747.11	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5920	500 x 200 mm	No.	54 496.21	38 452.69	49 380.55	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5930	500 x 250 mm	No.	58 533.89	40 551.76	52 113.51	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced

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D5940	500 x 300 mm	No.	60 404.44	41 479.85	53 302.68	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5950	500 x 350 mm	No.	63 024.36	42 714.79	55 116.62	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5960	500 x 400 mm	No.	65 618.34	44 334.26	56 865.68	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D5970	500 x 450 mm	No.	66 693.24	45 161.51	58 323.68	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced

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D5980	500 x 500 mm	No.	73 772.77	49 506.21	63 927.68	The target rate for this item is less than the cost of purchasing a Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent plain ended tee including three ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6140	300 x 250 mm	No.	18 498.15	14 211.69	18 129.03	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6150	300 x 300 mm	No.	19 810.27	14 775.32	19 103.53	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6170	350 x 160 mm	No.	21 187.18	16 163.55	20 929.80	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced

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D6190	350 x 250 mm	No.	23 573.66	17 818.62	22 918.49	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6200	350 x 300 mm	No.	24 812.52	18 177.86	23 544.25	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6210	350 x 350 mm	No.	28 145.95	20 773.65	26 921.46	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6220	400 x 110 mm	No.	26 327.27	16 506.12	21 273.73	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced

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D6230	400 x 160 mm	No.	29 850.89	19 758.98	25 525.68	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6240	400 x 200 mm	No.	31 025.87	20 715.39	26 766.88	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6250	400 x 250 mm	No.	32 502.32	21 805.15	28 033.58	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6260	400 x 300 mm	No.	34 110.97	22 701.08	29 413.70	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced

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D6270	400 x 350 mm	No.	35 720.85	23 379.31	30 233.58	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6280	400 x 400 mm	No.	38 686.10	23 811.26	30 901.68	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6290	450 x 110 mm	No.	32 927.34	24 679.96	32 010.78	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6300	450 x 160 mm	No.	34 046.72	25 422.80	32 830.88	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced

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D6310	450 x 200 mm	No.	34 832.51	25 946.30	33 587.72	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6320	450 x 250 mm	No.	35 610.89	26 260.04	34 057.66	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6330	450 x 300 mm	No.	36 755.38	26 406.29	33 723.47	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6340	450 x 350 mm	No.	38 173.75	26 871.55	34 423.09	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced

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D6350	450 x 400 mm	No.	40 898.07	27 035.35	34 945.48	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6360	450 x 450 mm	No.	42 333.73	28 480.86	36 872.56	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6370	500 x 110 mm	No.	46 675.34	35 036.63	45 378.58	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6380	500 x 160 mm	No.	47 547.62	35 598.00	46 225.78	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced

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D6390	500 x 200 mm	No.	48 191.33	35 953.63	46 473.63	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6400	500 x 250 mm	No.	49 976.65	37 361.52	48 389.08	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6410	500 x 300 mm	No.	51 165.22	37 849.59	48 936.54	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6420	500 x 350 mm	No.	52 571.25	38 300.13	49 453.78	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced

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D6430	500 x 400 mm	No.	55 948.29	38 608.56	50 040.97	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6440	500 x 450 mm	No.	56 390.60	39 298.20	50 874.25	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6450	500 x 500 mm	No.	63 559.09	43 909.05	56 816.97	The target rate for this item is less than the cost of purchasing a mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent including stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6670	350 x 300 mm	No.	27 976.69	21 328.99	27 636.52	The target rate for this item is less than the cost of purchasing a mild steel with Corrocoat Polyglass VE corrosion protection or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.

D6680	350 x 350 mm	No.	31 821.63	24 333.33	31 433.16	The target rate for this item is less than the cost of purchasing a mild steel with Corrocoat Polyglass VE corrosion protection or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6690	400 x 110 mm	No.	30 534.21	21 112.10	27 283.36	The target rate for this item is less than the cost of purchasing a mild steel with Corrocoat Polyglass VE corrosion protection or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6700	400 x 160 mm	No.	33 440.08	24 020.17	31 197.83	The target rate for this item is less than the cost of purchasing a mild steel with Corrocoat Polyglass VE corrosion protection or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6710	400 x 200 mm	No.	34 794.21	25 116.15	32 458.23	The target rate for this item is less than the cost of purchasing a mild steel with Corrocoat Polyglass VE corrosion protection or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6720	400 x 250 mm	No.	36 455.98	26 353.74	34 004.98	The target rate for this item is less than the cost of purchasing a mild steel with Corrocoat Polyglass VE corrosion protection or equivalent

						with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6730	400 x 300 mm	No.	38 262.31	27 525.09	35 686.28	The target rate for this item is less than the cost of purchasing a mild steel with Corrocoat Polyglass VE corrosion protection or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6740	400 x 350 mm	No.	39 952.50	28 349.56	36 314.78	The target rate for this item is less than the cost of purchasing a mild steel with Corrocoat Polyglass VE corrosion protection or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6750	400 x 400 mm	No.	42 553.27	29 064.50	37 664.53	The target rate for this item is less than the cost of purchasing a mild steel with Corrocoat Polyglass VE corrosion protection or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6790	450 x 250 mm	No.	40 429.42	26 593.56	34 515.78	The target rate for this item is less than the cost of purchasing a mild steel with Corrocoat Polyglass VE corrosion protection or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this

						rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6800	450 x 300 mm	No.	41 580.08	31 495.26	40 420.78	The target rate for this item is less than the cost of purchasing a mild steel with Corrocoat Polyglass VE corrosion protection or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6810	450 x 350 mm	No.	42 986.10	32 048.00	41 448.62	The target rate for this item is less than the cost of purchasing a mild steel with Corrocoat Polyglass VE corrosion protection or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6820	450 x 400 mm	No.	45 939.00	32 877.60	42 122.76	The target rate for this item is less than the cost of purchasing a mild steel with Corrocoat Polyglass VE corrosion protection or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6830	450 x 450 mm	No.	48 023.30	34 699.49	44 807.83	The target rate for this item is less than the cost of purchasing a mild steel with Corrocoat Polyglass VE corrosion protection or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however

						reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6860	500 x 200 mm	No.	57 124.14	43 696.41	56 426.28	The target rate for this item is less than the cost of purchasing a mild steel with Corrocoat Polyglass VE corrosion protection or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6870	500 x 250 mm	No.	60 849.23	46 033.97	59 624.78	The target rate for this item is less than the cost of purchasing a mild steel with Corrocoat Polyglass VE corrosion protection or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6880	500 x 300 mm	No.	62 161.35	46 655.33	60 419.38	The target rate for this item is less than the cost of purchasing a mild steel with Corrocoat Polyglass VE corrosion protection or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6890	500 x 350 mm	No.	63 690.93	47 381.18	61 402.18	The target rate for this item is less than the cost of purchasing a mild steel with Corrocoat Polyglass VE corrosion protection or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.

D6900	500 x 400 mm	No.	67 562.17	48 586.04	63 030.47	The target rate for this item is less than the cost of purchasing a mild steel with Corrocoat Polyglass VE corrosion protection or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6910	500 x 450 mm	No.	68 189.82	49 214.06	63 614.67	The target rate for this item is less than the cost of purchasing a mild steel with Corrocoat Polyglass VE corrosion protection or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6920	500 x 500 mm	No.	79 250.19	55 043.98	71 411.47	The target rate for this item is less than the cost of purchasing a mild steel with Corrocoat Polyglass VE corrosion protection or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D6970	160 x 160 mm	No.	14 675.48	5 321.21	6 655.72	We reviewed this rate and picked up a typing error. Herewith the corrected rate.
D7080	300 x 250 mm	No.	18 498.15	14 211.69	R 18,418.31	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7090	300 x 300 mm	No.	19 810.27	14 777.32	18 948.27	The target rate for this item is less

						than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7110	350 x 160 mm	No.	21 187.18	16 163.55	20 598.12	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7130	350 x 250 mm	No.	23 573.66	17 818.62	22 918.49	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7140	350 x 300 mm	No.	24 812.52	18 274.66	23 157.11	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7150	350 x 350 mm	No.	28 145.95	20 773.65	26 700.91	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts

						which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7160	400 x 110 mm	No.	26 327.27	16 506.12	21 376.65	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7170	400 x 160 mm	No.	29 850.89	19 758.98	25 525.68	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7180	400 x 200 mm	No.	31 025.87	20 715.39	26 879.71	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7190	400 x 250 mm	No.	32 502.32	21 805.15	28 288.18	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can

						therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7200	400 x 300 mm	No.	34 110.97	22 701.08	29 413.70	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7210	400 x 350 mm	No.	35 720.85	23 379.31	30 233.58	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7220	400 x 400 mm	No.	38 686.10	23 811.26	30 901.68	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7230	450 x 110 mm	No.	32 927.34	24 679.96	32 010.78	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance

						to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7240	450 x 160 mm	No.	34 046.72	25 422.80	32 830.88	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7250	450 x 200 mm	No.	34 832.51	25 946.30	33 587.72	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7260	450 x 250 mm	No.	35 610.89	26 260.04	33 777.90	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7270	450 x 300 mm	No.	36 755.38	26 406.29	34 298.13	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7280	450 x 350 mm	No.	38 173.75	27 946.13	35 618.33	The target rate for this item is less

						than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7290	450 x 400 mm	No.	40 898.07	27 035.35	34 945.48	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7300	450 x 450 mm	No.	42 333.73	28 480.86	36 872.56	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7310	500 x 110 mm	No.	46 675.34	35 036.63	45 378.58	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7320	500 x 160 mm	No.	47 547.62	35 598.00	46 225.78	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts

						which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7330	500 x 200 mm	No.	48 191.33	35 953.63	46 473.63	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7340	500 x 250 mm	No.	49 976.65	37 361.52	48 193.18	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7350	500 x 300 mm	No.	51 165.22	37 849.59	48 936.54	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7360	500 x 350 mm	No.	52 571.25	38 300.13	49 453.78	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can

						therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7370	500 x 400 mm	No.	55 948.29	38 608.56	50 040.97	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7380	500 x 450 mm	No.	56 390.60	39 298.20	50 874.25	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7390	500 x 500 mm	No.	63 559.09	43 909.05	56 816.97	The target rate for this item is less than the cost of purchasing a Mild Steel with Cement lining and concrete sheating or equivalent with stainless steel nut and bolts which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7420	200 mm diam.	No.	5 164.47	2 688.53	3389.13	We reviewed this rate and picked up an error. Herewith the corrected rate.
D7490	HYDRANT TEES: Double plain ended tees with with 1	No.	7 118.64	2 613.30	4 531.50	The target rate for this item is less than the cost of purchasing a double plain ended tee with a 100mm diameter flanged branch, type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent, inclusive of the ranger couplings which should be inclusive of the rate as stated in the heading to this

						item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work, corrected an error in the calculation and adjusted our mark-up. We can therefore offer a reduced rate.
D7500	160 mm diam.	No.	9 994.10	3 838.69	6 868.80	The target rate for this item is less than the cost of purchasing a double plain ended tee with a 100mm diameter flanged branch, type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent, inclusive of the ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work, corrected an error in the calculation and adjusted our mark-up. We can therefore offer a reduced rate.
D7510	200 mm diam.	No.	10 757.92	4 372.46	7 493.66	The target rate for this item is less than the cost of purchasing a double plain ended tee with a 100mm diameter flanged branch, type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent, inclusive of the ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work, corrected an error in the calculation and adjusted our mark-up. We can therefore offer a reduced rate.
D7520	250 mm diam.	No.	16 702.96	6 610.56	12 313.74	The target rate for this item is less than the cost of purchasing a double plain ended tee with a 100mm diameter flanged branch, type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent, inclusive of the ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work, corrected an error in the calculation and adjusted

						our mark-up. We can therefore offer a reduced rate.
D7530	300 mm diam.	No.	14 185.52	8 766.88	14 347.99	The target rate for this item is less than the cost of purchasing a double plain ended tee with a 100mm diameter flanged branch, type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent, inclusive of the ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work, corrected an error in the calculation and adjusted our mark-up. We can therefore offer a reduced rate.
D7540	350 mm diam.	No.	25 174.90	13 997.28	19 215.59	The target rate for this item is less than the cost of purchasing a double plain ended tee with a 100mm diameter flanged branch, type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent, inclusive of the ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work, corrected an error in the calculation and adjusted our mark-up. We can therefore offer a reduced rate.
D7550	400 mm diam.	No.	31 593.67	17 946.26	24 462.06	The target rate for this item is less than the cost of purchasing a double plain ended tee with a 100mm diameter flanged branch, type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent, inclusive of the ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work, corrected an error in the calculation and adjusted our mark-up. We can therefore offer a reduced rate.
D7560	450 mm diam.	No.	39 520.07	23 411.60	30 905.98	The target rate for this item is less than the cost of purchasing a double plain ended tee with a 100mm diameter flanged branch, type 1 - mild steel hot dipped galvanized with Plascoat or

						Carboline coating or equivalent, inclusive of the ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work, corrected an error in the calculation and adjusted our mark-up. We can therefore offer a reduced rate.
D7570	500 mm diam.	No.	46 578.97	30 682.35	39 882.48	The target rate for this item is less than the cost of purchasing a double plain ended tee with a 100mm diameter flanged branch, type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent, inclusive of the ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work, corrected an error in the calculation and adjusted our mark-up. We can therefore offer a reduced rate.
D7580	HYDRANT TEES: Double plain ended tees with with 1	No.	7 541.18	3 240.55	4 873.50	The target rate for this item is less than the cost of purchasing a double plain ended tee with a 100mm diameter flanged branch, Type 2: Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent inclusive of the ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work, corrected an error in the calculation and adjusted our mark-up. We can therefore offer a reduced rate.
D7590	160 mm diam.	No.	10 605.68	4 759.20	7 363.80	The target rate for this item is less than the cost of purchasing a double plain ended tee with a 100mm diameter flanged branch, Type 2: Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent inclusive of the ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance

						to perform the work, corrected an error in the calculation and adjusted our mark-up. We can therefore offer a reduced rate.
D7600	200 mm diam.	No.	11 664.17	5 578.56	9 507.16	The target rate for this item is less than the cost of purchasing a double plain ended tee with a 100mm diameter flanged branch, Type 2: Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent inclusive of the ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work, corrected an error in the calculation and adjusted our mark-up. We can therefore offer a reduced rate.
D7610	250 mm diam.	No.	18 407.60	8 703.10	13 693.44	The target rate for this item is less than the cost of purchasing a double plain ended tee with a 100mm diameter flanged branch, Type 2: Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent inclusive of the ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work, corrected an error in the calculation and adjusted our mark-up. We can therefore offer a reduced rate.
D7620	300 mm diam.	No.	20 925.75	11 751.08	15 756.49	The target rate for this item is less than the cost of purchasing a double plain ended tee with a 100mm diameter flanged branch, Type 2: Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent inclusive of the ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work, corrected an error in the calculation and adjusted our mark-up. We can therefore offer a reduced rate.
D7630	350 mm diam.	No.	27 182.00	16 030.97	20 840.09	The target rate for this item is less than the cost of purchasing a double plain ended tee with a 100mm diameter flanged branch, Type 2: Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent inclusive of the ranger

						couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work, corrected an error in the calculation and adjusted our mark-up. We can therefore offer a reduced rate.
D7640	400 mm diam.	No.	34 179.00	20 394.67	26 554.56	The target rate for this item is less than the cost of purchasing a double plain ended tee with a 100mm diameter flanged branch, Type 2: Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent inclusive of the ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work, corrected an error in the calculation and adjusted our mark-up. We can therefore offer a reduced rate.
D7650	450 mm diam.	No.	43 384.16	25 770.06	34 033.48	The target rate for this item is less than the cost of purchasing a double plain ended tee with a 100mm diameter flanged branch, Type 2: Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent inclusive of the ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work, corrected an error in the calculation and adjusted our mark-up. We can therefore offer a reduced rate.
D7660	500 mm diam.	No.	49 080.90	31 252.42	38 743.98	The target rate for this item is less than the cost of purchasing a double plain ended tee with a 100mm diameter flanged branch, Type 2: Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent inclusive of the ranger couplings which should be inclusive of the rate as stated in the heading to this item. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work, corrected an error in the calculation and adjusted our mark-up. We can therefore offer

						a reduced rate.
D7670	HYDRANT TEES: All flanged tees with with 100mm dia	No.	8 302.26	2 955.51	3 625.50	The target rate for this item is less than the cost of purchasing an all flanged hydrant tee with a 100mm branch (ductile iron PN16) inclusive of the gasket sets as stated in the specification. The material portion of this rate is about 95%. We can therefore not reduce our rate in order to get to your target rate. We however reconsidered the labour allowance to perform the work, corrected an error in the calculation and adjusted our mark-up. We can therefore offer a reduced rate.
D7680	160 mm diam.	No.	12 370.00	4 357.51	5 534.80	The target rate for this item is less than the cost of purchasing an all flanged hydrant tee with a 100mm branch (ductile iron PN16) inclusive of the gasket sets as stated in the specification. The material portion of this rate is about 95%. We can therefore not reduce our rate in order to get to your target rate. We however reconsidered the labour allowance to perform the work, corrected an error in the calculation and adjusted our mark-up. We can therefore offer a reduced rate.
D7690	200 mm diam.	No.	14 345.25	5 378.24	6 911.66	The target rate for this item is less than the cost of purchasing an all flanged hydrant tee with a 100mm branch (ductile iron PN16) inclusive of the gasket sets as stated in the specification. The material portion of this rate is about 95%. We can therefore not reduce our rate in order to get to your target rate. We however reconsidered the labour allowance to perform the work, corrected an error in the calculation and adjusted our mark-up. We can therefore offer a reduced rate.
D7700	250 mm diam.	No.	22 641.73	9 233.68	11 943.56	The target rate for this item is less than the cost of purchasing an all flanged hydrant tee with a 100mm branch (ductile iron PN16) inclusive of the gasket sets as stated in the specification. The material portion of this rate is about 95%. We can therefore not reduce our rate in order to get to your target rate. We however reconsidered the labour allowance to perform the work, corrected an error in the calculation and adjusted our mark-up. We can therefore offer a reduced rate.
D7710	300 mm diam.	No.	26 712.93	10 306.67	13 355.31	The target rate for this item is less than the cost of purchasing an all flanged hydrant tee with a 100mm branch (ductile iron PN16) inclusive of the gasket sets as stated in the specification. The material portion of this rate is about 95%. We can therefore not reduce our rate in order to get to your target rate. We however reconsidered the labour allowance to perform the work,

						corrected an error in the calculation and adjusted our mark-up. We can therefore offer a reduced rate.
D7720	350 mm diam.	No.	35 546.47	12 577.08	16 319.15	The target rate for this item is less than the cost of purchasing an all flanged hydrant tee with a 100mm branch (ductile iron PN16) inclusive of the gasket sets as stated in the specification. The material portion of this rate is about 95%. We can therefore not reduce our rate in order to get to your target rate. We however reconsidered the labour allowance to perform the work, corrected an error in the calculation and adjusted our mark-up. We can therefore offer a reduced rate.
D7730	400 mm diam.	No.	47 745.01	15 425.00	19 967.02	The target rate for this item is less than the cost of purchasing an all flanged hydrant tee with a 100mm branch (ductile iron PN16) inclusive of the gasket sets as stated in the specification. The material portion of this rate is about 95%. We can therefore not reduce our rate in order to get to your target rate. We however reconsidered the labour allowance to perform the work, corrected an error in the calculation and adjusted our mark-up. We can therefore offer a reduced rate.
D7740	450 mm diam.	No.	57 646.15	21 476.24	27 735.37	The target rate for this item is less than the cost of purchasing an all flanged hydrant tee with a 100mm branch (ductile iron PN16) inclusive of the gasket sets as stated in the specification. The material portion of this rate is about 95%. We can therefore not reduce our rate in order to get to your target rate. We however reconsidered the labour allowance to perform the work, corrected an error in the calculation and adjusted our mark-up. We can therefore offer a reduced rate.
D7750	500 mm diam.	No.	73 667.75	31 453.40	40 840.66	The target rate for this item is less than the cost of purchasing an all flanged hydrant tee with a 100mm branch (ductile iron PN16) inclusive of the gasket sets as stated in the specification. The material portion of this rate is about 95%. We can therefore not reduce our rate in order to get to your target rate. We however reconsidered the labour allowance to perform the work, corrected an error in the calculation and adjusted our mark-up. We can therefore offer a reduced rate.
D7760	HYDRANT TEES: All flanged tees with with 100mm dia	No.	33 770.07	3 273.28	3 370.07	There seems to be a typing error on your side as the rate submitted with the tender for this item is R 3 370.07.
D7800	300 mm diam.	No.	14 032.17	10 702.33	13 753.13	The target rate for this item is less than the cost of purchasing an all flanged hydrant tee with a 100mm diameter branch - type 1 - mild steel hot dipped galvanized with

						Plascoat or Carboline coating or equivalent, inclusive of the gasket sets which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7810	350 mm diam.	No.	17 912.51	12 853.87	16 506.24	The target rate for this item is less than the cost of purchasing an all flanged hydrant tee with a 100mm diameter branch - type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent, inclusive of the gasket sets which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7820	400 mm diam.	No.	25 946.73	15 581.68	20 157.81	The target rate for this item is less than the cost of purchasing an all flanged hydrant tee with a 100mm diameter branch - type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent, inclusive of the gasket sets which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7830	450 mm diam.	No.	32 299.69	22 881.05	28 871.58	The target rate for this item is less than the cost of purchasing an all flanged hydrant tee with a 100mm diameter branch - type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent, inclusive of the gasket sets which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7840	500 mm diam.	No.	47 777.43	32 733.10	42 334.98	The target rate for this item is less

						than the cost of purchasing an all flanged hydrant tee with a 100mm diameter branch - type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent, inclusive of the gasket sets which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7890	300 mm diam.	No.	16 193.09	12 323.62	15 996.25	The target rate for this item is less than the cost of purchasing an all flanged hydrant tee with a 100mm diameter branch - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent, inclusive of the gasket sets which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7900	350 mm diam.	No.	20 142.63	14 288.94	18 475.94	The target rate for this item is less than the cost of purchasing an all flanged hydrant tee with a 100mm diameter branch - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent, inclusive of the gasket sets which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7910	400 mm diam.	No.	28 819.31	18 730.02	24 061.56	The target rate for this item is less than the cost of purchasing an all flanged hydrant tee with a 100mm diameter branch - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent, inclusive of the gasket sets which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the

						work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7920	450 mm diam.	No.	36 593.13	26 523.88	34132.63	The target rate for this item is less than the cost of purchasing an all flanged hydrant tee with a 100mm diameter branch - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent, inclusive of the gasket sets which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7930	500 mm diam.	No.	50 557.35	35 112.56	45183.98	The target rate for this item is less than the cost of purchasing an all flanged hydrant tee with a 100mm diameter branch - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent, inclusive of the gasket sets which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7980	300 mm diam.	No.	13 785.06	10 429.31	13511.13	The target rate for this item is less than the cost of purchasing an all flanged hydrant tee with a 100mm diameter branch - type 3: mild steel with cement lining and concrete sheating or equivalent, inclusive of the gasket sets which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D7990	350 mm diam.	No.	17 455.37	12 439.97	16154.39	The target rate for this item is less than the cost of purchasing an all flanged hydrant tee with a 100mm diameter branch - type 3: mild steel with cement lining and concrete sheating or equivalent, inclusive of the gasket sets which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to

						your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8000	400 mm diam.	No.	23 728.97	13 901.27	17 898.16	The target rate for this item is less than the cost of purchasing an all flanged hydrant tee with a 100mm diameter branch - type 3: mild steel with cement lining and concrete sheating or equivalent, inclusive of the gasket sets which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8010	450 mm diam.	No.	25 319.01	16 128.06	20 691.98	The target rate for this item is less than the cost of purchasing an all flanged hydrant tee with a 100mm diameter branch - type 3: mild steel with cement lining and concrete sheating or equivalent, inclusive of the gasket sets which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8020	500 mm diam.	No.	45 677.04	30 987.72	40124.98	The target rate for this item is less than the cost of purchasing an all flanged hydrant tee with a 100mm diameter branch - type 3: mild steel with cement lining and concrete sheating or equivalent, inclusive of the gasket sets which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 95%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8500	CROSSES: All plain ended (Type 1: Mild Steel hot dipp	No.	7 911.26	5 146.52	6 668.04	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to

						your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8510	110 x 75 mm	No.	8 822.67	5 436.15	7 054.47	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8520	110 x 110 mm	No.	10 157.03	6 445.78	8 272.87	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8530	160 x 110 mm	No.	14 088.44	9 106.37	11 799.88	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8540	160 x 160 mm	No.	16 083.19	10 049.62	12 952.81	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to

						your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8550	200 x 110 mm	No.	15 251.01	10 647.35	13 618.67	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8560	200 x 160 mm	No.	17 290.23	11 747.13	15 160.31	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8570	200 x 200 mm	No.	18 698.11	12 241.79	15 797.57	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8580	250 x 110 mm	No.	18 716.44	13 314.90	16 709.39	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to

						your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8590	250 x 160 mm	No.	21 013.51	14 744.34	18 757.78	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8600	250 x 200 mm	No.	21 545.78	15 939.58	20 083.39	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8610	250 x 250 mm	No.	24 961.99	16 910.62	21 872.59	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8620	300 x 110 mm	No.	23 316.46	15 682.95	20 269.24	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to

						your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8630	300 x 160 mm	No.	25 363.47	16 876.08	21 841.35	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8640	300 x 200 mm	No.	25 756.62	17 605.46	22 790.19	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8650	300 x 250 mm	No.	28 611.28	19 413.28	25 081.68	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8660	300 x 300 mm	No.	31 520.53	20 708.21	26 881.79	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to

						your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8670	350 x 110 mm	No.	29 757.24	19 554.47	25 393.74	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8680	350 x 160 mm	No.	31 756.44	20 479.61	26 338.59	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8690	350 x 200 mm	No.	32 190.72	21 370.11	27 716.72	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8700	350 x 250 mm	No.	35 495.74	23 282.51	29 988.92	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to

						your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8710	350 x 300 mm	No.	38 668.62	24 683.80	31 446.99	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8720	350 x 350 mm	No.	44 558.96	27 462.35	35 505.89	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8730	400 x 110 mm	No.	37 128.18	23 944.65	30 808.06	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8740	400 x 160 mm	No.	39 167.41	25 589.43	33 111.08	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to

						your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8750	400 x 200 mm	No.	39 924.17	26 649.00	34 379.84	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8760	400 x 250 mm	No.	43 012.35	28 685.74	37 029.31	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8770	400 x 300 mm	No.	45 519.14	29 717.16	38 481.30	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8780	400 x 350 mm	No.	50 553.27	31 618.37	40 715.28	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to

						your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8790	400 x 400 mm	No.	55 125.18	34 327.32	44 378.68	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8800	450 x 110 mm	No.	41 582.55	29 377.03	37 159.18	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8810	450 x 160 mm	No.	43 960.93	30 695.99	39 276.68	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8820	450 x 200 mm	No.	44 362.97	31 411.63	39 634.62	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to

						your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8830	450 x 250 mm	No.	47 210.96	33 105.98	42 170.23	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8840	450 x 300 mm	No.	49 748.70	33 909.40	44 074.08	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8850	450 x 350 mm	No.	54 782.83	35 865.51	45 931.08	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8860	450 x 400 mm	No.	59 375.87	38 530.56	49 760.11	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to

						your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8870	450 x 450 mm	No.	60 991.93	40 451.77	52 069.26	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8930	500 x 350 mm	No.	61 597.34	46 980.33	60 843.29	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8940	500 x 400 mm	No.	67 522.52	50 537.70	65 092.61	The target rate for this item is less than the cost of purchasing an all plain ended type 1 - mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8950	500 x 450 mm	No.	70 113.78	52 970.74	68 143.18	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target

						rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8970	CROSSES: All plain ended (Type 2: Mild Steel with Co	No.	10 079.60	6 429.98	8 285.59	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8980	110 x 75 mm	No.	10 991.01	6 744.08	8 687.62	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D8990	110 x 110 mm	No.	12 636.72	7 581.98	9 779.52	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9000	160 x 110 mm	No.	17 218.63	10 575.77	13 725.93	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target

						rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9010	160 x 160 mm	No.	19 263.42	11 428.76	14 734.87	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9020	200 x 110 mm	No.	19 126.22	12 248.46	15 854.30	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9030	200 x 160 mm	No.	21 298.88	13 584.50	17 647.97	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9040	200 x 200 mm	No.	22 867.99	14 392.35	18 579.17	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target

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D9050	250 x 110 mm	No.	22 497.13	16 113.97	20 075.39	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9060	250 x 160 mm	No.	24 510.65	17 382.39	21 871.33	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9070	250 x 200 mm	No.	24 937.28	18 476.37	23 240.14	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9080	250 x 250 mm	No.	27 853.11	18 425.63	23 733.64	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target

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D9090	300 x 110 mm	No.	27 836.61	19 287.30	24 845.89	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9100	300 x 160 mm	No.	29 975.92	20 422.52	26 512.54	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9110	300 x 200 mm	No.	30 365.72	21 123.03	27 097.59	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9120	300 x 250 mm	No.	33 509.50	22 888.31	29 629.94	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target

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D9130	300 x 300 mm	No.	36 107.40	24 049.16	31 067.08	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9140	350 x 110 mm	No.	35 090.24	23 708.89	30 482.70	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9150	350 x 160 mm	No.	37 132.80	24 588.25	31 661.82	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9160	350 x 200 mm	No.	37 522.61	25 480.22	32 887.26	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target

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D9170	350 x 250 mm	No.	40 243.84	27 087.95	34 945.88	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9180	350 x 300 mm	No.	43 861.51	28 585.65	37 044.61	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9190	350 x 350 mm	No.	49 515.00	31 113.20	40 225.79	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9200	400 x 110 mm	No.	42 298.84	28 873.16	37 422.46	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target

						rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9210	400 x 160 mm	No.	44 568.24	30 527.52	39 424.57	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9220	400 x 200 mm	No.	44 900.22	31 461.99	40 073.61	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9230	400 x 250 mm	No.	48 561.07	33 568.79	43 332.91	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9240	400 x 300 mm	No.	50 639.75	34 380.67	44 397.18	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target

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D9250	400 x 350 mm	No.	55 841.79	35 922.12	46 505.14	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9260	400 x 400 mm	No.	59 788.78	38 319.63	48 115.53	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9270	450 x 110 mm	No.	46 475.21	34 972.03	41 515.18	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9280	450 x 160 mm	No.	48 631.19	36 161.82	43 434.68	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target

						rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9290	450 x 200 mm	No.	48 965.40	36 859.74	43 732.23	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9300	450 x 250 mm	No.	51 663.28	38 349.32	46 134.19	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9310	450 x 300 mm	No.	54 758.12	39 178.50	48 923.98	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9320	450 x 350 mm	No.	60 003.52	40 691.22	52 648.12	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target

						rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9330	450 x 400 mm	No.	63 957.18	43 146.40	55 599.17	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9340	450 x 450 mm	No.	65 723.36	45 181.17	58 686.48	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9400	500 x 350 mm	No.	68 114.58	52 263.10	67 817.27	The target rate for this item is less than the cost of purchasing an all plain ended type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the specifications. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9600	300 x 300 mm	No.	24 013.51	17 588.32	22 773.35	The target rate for this item is less than the cost of purchasing an all flanged ends - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get

						closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9640	350 x 250 mm	No.	26 494.98	20 276.28	25 962.12	The target rate for this item is less than the cost of purchasing an all flanged ends - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9650	350 x 300 mm	No.	29 175.50	21 368.73	27 210.34	The target rate for this item is less than the cost of purchasing an all flanged ends - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9660	350 x 350 mm	No.	32 957.43	23 479.67	29 949.29	The target rate for this item is less than the cost of purchasing an all flanged ends - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9670	400 x 110 mm	No.	31 100.08	21 995.13	28 276.08	The target rate for this item is less than the cost of purchasing an all flanged ends - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in

						the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9680	400 x 160 mm	No.	32 282.47	22 464.71	28 839.86	The target rate for this item is less than the cost of purchasing an all flanged ends - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9690	400 x 200 mm	No.	33 847.88	23 578.26	30 233.56	The target rate for this item is less than the cost of purchasing an all flanged ends - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9700	400 x 250 mm	No.	35 756.76	24 691.04	31 933.06	The target rate for this item is less than the cost of purchasing an all flanged ends - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9710	400 x 300 mm	No.	37 690.27	24 901.99	31 891.34	The target rate for this item is less than the cost of purchasing an all flanged ends - type 1: mild steel hot dipped galvanized with Plascoat or

						Carboline coating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9720	400 x 350 mm	No.	40 520.84	25 947.98	32 995.98	The target rate for this item is less than the cost of purchasing an all flanged ends - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9730	400 x 400 mm	No.	46 532.88	26 954.81	34 861.48	The target rate for this item is less than the cost of purchasing an all flanged ends - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9750	450 x 160 mm	No.	36 435.38	27 802.62	35 993.46	The target rate for this item is less than the cost of purchasing an all flanged ends - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.

D9760	450 x 200 mm	No.	37 606.65	28 509.66	36 855.80	The target rate for this item is less than the cost of purchasing an all flanged ends - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9770	450 x 250 mm	No.	39 248.66	29 293.04	37 848.87	The target rate for this item is less than the cost of purchasing an all flanged ends - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9780	450 x 300 mm	No.	41 198.28	29 339.41	37 492.98	The target rate for this item is less than the cost of purchasing an all flanged ends - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9790	450 x 350 mm	No.	44 028.86	30 386.36	39 371.58	The target rate for this item is less than the cost of purchasing an all flanged ends - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour

						allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9800	450 x 400 mm	No.	50 064.38	31 419.29	40 819.98	The target rate for this item is less than the cost of purchasing an all flanged ends - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9810	450 x 450 mm	No.	50 726.61	32 739.49	42 151.72	The target rate for this item is less than the cost of purchasing an all flanged ends - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9850	500 x 250 mm	No.	53 381.75	41 052.97	53 150.26	The target rate for this item is less than the cost of purchasing an all flanged ends - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9860	500 x 300 mm	No.	55 294.33	41 703.67	54 184.62	The target rate for this item is less than the cost of purchasing an all flanged ends - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%.

						We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9870	500 x 350 mm	No.	57 989.00	42 665.92	54 997.03	The target rate for this item is less than the cost of purchasing an all flanged ends - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9880	500 x 400 mm	No.	65 504.67	45 346.42	58 491.78	The target rate for this item is less than the cost of purchasing an all flanged ends - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9890	500 x 450 mm	No.	67 250.46	47 871.76	61 640.91	The target rate for this item is less than the cost of purchasing an all flanged ends - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D9900	500 x 500 mm	No.	79 857.70	52 026.83	66 834.93	The target rate for this item is less than the cost of purchasing an all flanged ends - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent cross, inclusive of the stainless

						steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10060	300 x 250 mm	No.	27 065.03	20 809.08	26 946.66	The target rate for this item is less than the cost of purchasing an all flanged ends - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10070	300 x 300 mm	No.	29 110.03	21 725.98	28 060.66	The target rate for this item is less than the cost of purchasing an all flanged ends - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10100	350 x 200 mm	No.	30 269.49	23 212.42	30 137.37	The target rate for this item is less than the cost of purchasing an all flanged ends - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10110	350 x 250 mm	No.	31 770.65	24 252.74	31 380.32	The target rate for this item is less than the cost of purchasing an all

						flanged ends - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10120	350 x 300 mm	No.	34 945.38	25 988.11	33 686.80	The target rate for this item is less than the cost of purchasing an all flanged ends - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10130	350 x 350 mm	No.	38 464.14	28 108.01	36 161.01	The target rate for this item is less than the cost of purchasing an all flanged ends - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10140	400 x 110 mm	No.	36 845.25	27 113.70	34 938.88	The target rate for this item is less than the cost of purchasing an all flanged ends - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can

						therefore offer a slightly reduced rate.
D10150	400 x 160 mm	No.	38 283.40	27 834.21	35 695.56	The target rate for this item is less than the cost of purchasing an all flanged ends - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10160	400 x 200 mm	No.	39 376.83	28 701.23	37 024.76	The target rate for this item is less than the cost of purchasing an all flanged ends - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10170	400 x 250 mm	No.	41 922.00	30 289.43	39 082.31	The target rate for this item is less than the cost of purchasing an all flanged ends - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10180	400 x 300 mm	No.	43 379.84	30 531.83	39 421.66	The target rate for this item is less than the cost of purchasing an all flanged ends - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get

						closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10190	400 x 350 mm	No.	46 396.98	31 888.70	41 422.58	The target rate for this item is less than the cost of purchasing an all flanged ends - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10200	400 x 400 mm	No.	51 714.66	33 483.88	43 491.33	The target rate for this item is less than the cost of purchasing an all flanged ends - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10240	450 x 250 mm	No.	44 195.68	33 816.62	43 308.73	The target rate for this item is less than the cost of purchasing an all flanged ends - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10250	450 x 300 mm	No.	46 764.30	34 632.28	44 733.38	The target rate for this item is less than the cost of purchasing an all flanged ends - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in

						the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10260	450 x 350 mm	No.	49 829.63	36 020.87	46 489.13	The target rate for this item is less than the cost of purchasing an all flanged ends - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10270	450 x 400 mm	No.	55 154.72	37 631.09	48 843.37	The target rate for this item is less than the cost of purchasing an all flanged ends - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10280	450 x 450 mm	No.	55 983.75	38 863.44	50 015.18	The target rate for this item is less than the cost of purchasing an all flanged ends - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10330	500 x 300 mm	No.	61 589.31	46 640.64	59 863.78	The target rate for this item is less than the cost of purchasing an all flanged ends - type 2: mild steel with Corrocoat Polyglass VE

						corrosion protection or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10340	500 x 350 mm	No.	65 230.38	48 335.56	62 369.66	The target rate for this item is less than the cost of purchasing an all flanged ends - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10350	500 x 400 mm	No.	70 603.66	50 661.52	65 825.23	The target rate for this item is less than the cost of purchasing an all flanged ends - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10360	500 x 450 mm	No.	71 682.27	52 554.26	67 964.14	The target rate for this item is less than the cost of purchasing an all flanged ends - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.

D10370	500 x 500 mm	No.	83 923.80	56 582.68	73 224.18	The target rate for this item is less than the cost of purchasing an all flanged ends - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10390	110 x 75 mm	No.	5 778.35	3 753.73	4 862.55	The target rate for this item is less than the cost of purchasing an all flanged ends - type 3: mild steel with Cement lining and concrete sheating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10540	300 x 300 mm	No.	29 333.66	22 253.77	28 740.73	The target rate for this item is less than the cost of purchasing an all flanged ends - type 3: mild steel with Cement lining and concrete sheating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10590	350 x 300 mm	No.	34 939.20	26 429.26	34 233.73	The target rate for this item is less than the cost of purchasing an all flanged ends - type 3: mild steel with Cement lining and concrete sheating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a

						slightly reduced rate.
D10600	350 x 350 mm	No.	38 581.52	28 304.30	36 271.21	The target rate for this item is less than the cost of purchasing an all flanged ends - type 3: mild steel with Cement lining and concrete sheating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10610	400 x 110 mm	No.	33 939.31	24 485.65	31 652.16	The target rate for this item is less than the cost of purchasing an all flanged ends - type 3: mild steel with Cement lining and concrete sheating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10620	400 x 160 mm	No.	35 928.49	25 661.60	33 220.12	The target rate for this item is less than the cost of purchasing an all flanged ends - type 3: mild steel with Cement lining and concrete sheating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10630	400 x 200 mm	No.	37 883.09	27 117.24	35 023.60	The target rate for this item is less than the cost of purchasing an all flanged ends - type 3: mild steel with Cement lining and concrete sheating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a

						slightly reduced rate.
D10640	400 x 250 mm	No.	40 445.56	28 802.63	37 387.96	The target rate for this item is less than the cost of purchasing an all flanged ends - type 3: mild steel with Cement lining and concrete sheating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10650	400 x 300 mm	No.	42 514.97	29 132.60	37 630.74	The target rate for this item is less than the cost of purchasing an all flanged ends - type 3: mild steel with Cement lining and concrete sheating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10660	400 x 350 mm	No.	45 209.64	30 060.32	38 935.68	The target rate for this item is less than the cost of purchasing an all flanged ends - type 3: mild steel with Cement lining and concrete sheating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10670	400 x 400 mm	No.	50 479.14	30 415.77	39 455.58	The target rate for this item is less than the cost of purchasing an all flanged ends - type 3: mild steel with Cement lining and concrete sheating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a

						slightly reduced rate.
D10700	450 x 200 mm	No.	39 761.40	30 398.79	39 277.70	The target rate for this item is less than the cost of purchasing an all flanged ends - type 3: mild steel with Cement lining and concrete sheating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10710	450 x 250 mm	No.	41 596.14	31 351.71	40 436.38	The target rate for this item is less than the cost of purchasing an all flanged ends - type 3: mild steel with Cement lining and concrete sheating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10720	450 x 300 mm	No.	43 582.84	31 431.10	40 674.73	The target rate for this item is less than the cost of purchasing an all flanged ends - type 3: mild steel with Cement lining and concrete sheating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10730	450 x 350 mm	No.	46 246.62	32 331.01	41 707.69	The target rate for this item is less than the cost of purchasing an all flanged ends - type 3: mild steel with Cement lining and concrete sheating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a

						slightly reduced rate.
D10740	450 x 400 mm	No.	52 102.98	33 206.91	42 878.99	The target rate for this item is less than the cost of purchasing an all flanged ends - type 3: mild steel with Cement lining and concrete sheating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10750	450 x 450 mm	No.	53 080.28	34 803.91	44 928.66	The target rate for this item is less than the cost of purchasing an all flanged ends - type 3: mild steel with Cement lining and concrete sheating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10800	500 x 300 mm	No.	58 860.04	44 666.29	57 676.68	The target rate for this item is less than the cost of purchasing an all flanged ends - type 3: mild steel with Cement lining and concrete sheating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10810	500 x 350 mm	No.	62 854.48	46 829.40	59 604.49	The target rate for this item is less than the cost of purchasing an all flanged ends - type 3: mild steel with Cement lining and concrete sheating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a

						slightly reduced rate.
D10820	500 x 400 mm	No.	68 836.87	48 268.27	62 547.38	The target rate for this item is less than the cost of purchasing an all flanged ends - type 3: mild steel with Cement lining and concrete sheating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10830	500 x 450 mm	No.	69 764.74	50 076.71	64 492.42	The target rate for this item is less than the cost of purchasing an all flanged ends - type 3: mild steel with Cement lining and concrete sheating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D10840	500 x 500 mm	No.	80 673.15	52 741.73	68 154.98	The target rate for this item is less than the cost of purchasing an all flanged ends - type 3: mild steel with Cement lining and concrete sheating or equivalent cross, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11110	REDUCERS: All plain ended (Type 1: Mild Steel hot di	No.	4 070.93	2 561.83	3 306.51	The target rate for this item is less than the cost of purchasing an all plain ended - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can

						therefore offer a slightly reduced rate.
D11120	160 x 75 mm diam.	No.	5 427.48	3 271.65	4 229.01	The target rate for this item is less than the cost of purchasing an all plain ended - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11130	160 x 110 mm diam.	No.	6 642.86	4 267.59	5 526.20	The target rate for this item is less than the cost of purchasing an all plain ended - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11140	200 x 110 mm diam.	No.	7 724.66	5 476.09	6 604.03	The target rate for this item is less than the cost of purchasing an all plain ended - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11150	200 x 160 mm diam.	No.	9 047.28	6 329.05	7 728.05	The target rate for this item is less than the cost of purchasing an all plain ended - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get

						closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11160	250 x 160 mm diam.	No.	11 179.47	7 757.57	9 543.65	The target rate for this item is less than the cost of purchasing an all plain ended - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11170	250 x 200 mm diam.	No.	11 747.44	8 310.19	10 026.33	The target rate for this item is less than the cost of purchasing an all plain ended - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11180	300 x 160 mm diam.	No.	13 917.75	8 689.20	11 208.73	The target rate for this item is less than the cost of purchasing an all plain ended - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11190	300 x 200 mm diam.	No.	13 669.65	9 760.87	12 204.69	The target rate for this item is less than the cost of purchasing an all plain ended - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the

						item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11200	300 x 250 mm diam.	No.	15 159.81	10 752.81	13 531.40	The target rate for this item is less than the cost of purchasing an all plain ended - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11210	350 x 200 mm diam.	No.	17 219.56	11 149.21	14 413.21	The target rate for this item is less than the cost of purchasing an all plain ended - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11220	350 x 250 mm diam.	No.	19 699.37	13 258.24	16 793.76	The target rate for this item is less than the cost of purchasing an all plain ended - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11230	350 x 300 mm diam.	No.	21 424.25	14 276.83	18 266.18	The target rate for this item is less than the cost of purchasing an all plain ended - type 1: mild steel hot dipped galvanized with Plascoat or

						Carboline coating or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11240	400 x 200 mm diam.	No.	24 109.28	16 322.38	20 548.04	The target rate for this item is less than the cost of purchasing an all plain ended - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11250	400 x 250 mm diam.	No.	27 409.73	19 155.80	24 446.27	The target rate for this item is less than the cost of purchasing an all plain ended - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11260	400 x 300 mm diam.	No.	27 225.58	18 396.14	23 204.83	The target rate for this item is less than the cost of purchasing an all plain ended - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.

D11270	400 x 350 mm diam.	No.	31 682.47	20 744.97	26 739.69	The target rate for this item is less than the cost of purchasing an all plain ended - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11280	450 x 250 mm diam.	No.	29 889.49	21 517.20	27 375.05	The target rate for this item is less than the cost of purchasing an all plain ended - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11290	450 x 300 mm diam.	No.	32 955.39	23 740.42	30 447.99	The target rate for this item is less than the cost of purchasing an all plain ended - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11300	450 x 350 mm diam.	No.	36 506.03	26 135.22	33 724.12	The target rate for this item is less than the cost of purchasing an all plain ended - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour

						allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11310	450 x 400 mm diam.	No.	39 741.61	28 662.63	36 709.55	The target rate for this item is less than the cost of purchasing an all plain ended - type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11370	REDUCERS: All plain ended (Type 2: Mild Steel with C	No.	4 554.64	2 661.48	3 448.74	The target rate for this item is less than the cost of purchasing an all plain ended - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11380	160 x 75 mm diam.	No.	6 446.04	3 530.19	4 560.21	The target rate for this item is less than the cost of purchasing an all plain ended - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11390	160 x 110 mm diam.	No.	5 888.94	4 237.60	5 040.93	The target rate for this item is less than the cost of purchasing an all plain ended - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to

						your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11440	300 x 160 mm diam.	No.	12 217.55	8 447.61	10 908.74	The target rate for this item is less than the cost of purchasing an all plain ended - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11470	350 x 200 mm diam.	No.	14 847.73	11 209.44	14 078.84	The target rate for this item is less than the cost of purchasing an all plain ended - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11480	350 x 250 mm diam.	No.	16 930.57	12 987.90	16 722.28	The target rate for this item is less than the cost of purchasing an all plain ended - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11490	350 x 300 mm diam.	No.	18 458.63	13 970.58	17 939.24	The target rate for this item is less than the cost of purchasing an all plain ended - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to

						your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11530	400 x 350 mm diam.	No.	26 647.48	20 358.37	26 318.38	The target rate for this item is less than the cost of purchasing an all plain ended - type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent reducer, inclusive of the ranger couplings, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11630	REDUCERS: Double Flanged (Ductile Iron PN 16) with	No.	3 679.89	1 960.53	2 517.68	The target rate for this item is less than the cost of purchasing a double flanged (Ductile Iron PN 16) reducer, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11640	160 x 75 mm diam.	No.	4 311.18	2 539.90	3 271.86	The target rate for this item is less than the cost of purchasing a double flanged (Ductile Iron PN 16) reducer, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D11650	160 x 110 mm diam.	No.	6 211.41	3 458.27	4 445.22	The target rate for this item is less than the cost of purchasing a double flanged (Ductile Iron PN 16) reducer, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can

						therefore offer a slightly reduced rate.
D11960	300 x 160 mm diam.	No.	10 648.81	7 961.69	10 266.99	The target rate for this item is less than the cost of purchasing a double flanged type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent reducer, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D12040	400 x 300 mm diam.	No.	23 815.67	18 201.06	23 522.14	The target rate for this item is less than the cost of purchasing a double flanged type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent reducer, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D12050	400 x 350 mm diam.	No.	27 386.32	20 479.48	26 393.85	The target rate for this item is less than the cost of purchasing a double flanged type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating or equivalent reducer, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D12150	REDUCERS: Double Flanged (Type 2: Mild Steel with	No.	3 679.89	2 747.78	3 552.57	The target rate for this item is less than the cost of purchasing a double flanged type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent reducer, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get

						closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D12170	160 x 110 mm diam.	No.	6 211.41	4 186.92	5 314.98	The target rate for this item is less than the cost of purchasing a double flanged type 2: mild steel with Corrocoat Polyglass VE corrosion protection or equivalent reducer, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D12480	300 x 160 mm diam.	No.	9 047.58	6 461.36	8 228.31	The target rate for this item is less than the cost of purchasing a double flanged - type 3: mild steel with Cement lining and concrete sheating or equivalent reducer, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D12530	350 x 300 mm diam.	No.	14 078.10	10 385.96	13 352.33	The target rate for this item is less than the cost of purchasing a double flanged - type 3: mild steel with Cement lining and concrete sheating or equivalent reducer, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D12540	400 x 200 mm diam.	No.	17 631.45	13 038.31	16 717.25	The target rate for this item is less than the cost of purchasing a double flanged - type 3: mild steel with Cement lining and concrete sheating or equivalent reducer, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can

						therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D12550	400 x 250 mm diam.	No.	19 886.27	15 087.80	19 010.28	The target rate for this item is less than the cost of purchasing a double flanged - type 3: mild steel with Cement lining and concrete sheating or equivalent reducer, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D12560	400 x 300 mm diam.	No.	19 708.80	14 137.18	18 375.63	The target rate for this item is less than the cost of purchasing a double flanged - type 3: mild steel with Cement lining and concrete sheating or equivalent reducer, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D12570	400 x 350 mm diam.	No.	22 594.98	16 445.36	21 062.03	The target rate for this item is less than the cost of purchasing a double flanged - type 3: mild steel with Cement lining and concrete sheating or equivalent reducer, inclusive of the stainless steel bolts and nuts, which should be inclusive of the rate as stated in the item description. The material portion of this rate is about 98%. We can therefore not significantly reduce our rate in order to get closer to your target rate. We however reconsidered the labour allowance to perform the work as well as our mark-up. We can therefore offer a slightly reduced rate.
D12610	450 x 400 mm diam.	No.	58 855.60	22 919.90	29 666.44	We corrected an error in our calculation. We can therefore offer a reduced rate.
D12890	Mild Steel flanged socket adaptor with corrosion protec	No.	1 749.50	1 140.23	1 474.79	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D12900	90 mm diam.	No.	2 067.02	1 291.15	1 675.59	We reviewed our calculation of the rate for this item and are able to offer a revised rate.

D12910	110 mm diam.	No.	2 067.02	1 393.09	1 791.93	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D12920	160 mm diam.	No.	3 249.42	2 218.42	2 816.75	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D12930	200 mm diam.	No.	4 166.17	2 966.47	3 711.91	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D12940	250 mm diam.	No.	6 433.35	4 455.53	5 731.09	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D12950	300 mm diam.	No.	8 228.57	6 187.32	7 330.07	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D13260	200mm diameter	No.	3 261.77	2 381.52	3 037.71	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D13290	350mm diameter	No.	7 511.96	5 619.44	6 994.99	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D13440	HDPE PE100 PN 16 stub only50mm diameter	No.	308.26	114.25	147.86	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D13450	80mm diameter	No.	387.90	142.98	185.47	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D13460	110mm diameter	No.	474.81	169.48	218.34	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D13470	160mm diameter	No.	584.57	260.15	335.36	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D13480	200mm diameter	No.	735.63	319.76	412.13	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D13490	250mm diameter	No.	930.93	415.62	531.90	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D13500	300mm diameter	No.	1 219.08	643.94	824.40	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D13510	350mm in diameter	No.	1 589.22	832.30	1 053.27	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D13520	400mm diameter	No.	1 941.93	1 029.99	1 295.28	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D13530	450mm in diameter	No.	2 390.78	1 214.02	1 564.09	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D13540	500mm diameter	No.	2 782.45	1 512.66	1 912.32	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D13822	200mm or 250mm or 300mm in diameter	No.	8 775.72	5 046.83	7 264.74	For the installation of a new valve the description includes “joint”, which therefore mean the contractor needs to allow for jointing and therefore for the jointing material. We therefore allowed for stainless steel bolts and nuts and denso tape as a material portion to this rate, although the cost of the valve is covered under the supply item for the valve. It

						could be that the other contractors allowed for this cost under the valve supply item. We however reviewed our calculation of the rate for this item and are able to offer a revised rate.
D13824	350mm or 400mm or 450mm in diameter	No.	17 568.57	7 576.64	14 421.93	For the installation of a new valve the description includes “joint”, which therefore mean the contractor needs to allow for jointing and therefore for the jointing material. We therefore allowed for stainless steel bolts and nuts and denso tape as a material portion to this rate, although the cost of the valve is covered under the supply item for the valve. It could be that the other contractors allowed for this cost under the valve supply item. We however reviewed our calculation of the rate for this item and are able to offer a revised rate.
D13826	500mm in diameter	No.	28 575.46	11 600.34	23 371.12	For the installation of a new valve the description includes “joint”, which therefore mean the contractor needs to allow for jointing and therefore for the jointing material. We therefore allowed for stainless steel bolts and nuts and denso tape as a material portion to this rate, although the cost of the valve is covered under the supply item for the valve. It could be that the other contractors allowed for this cost under the valve supply item. We however reviewed our calculation of the rate for this item and are able to offer a revised rate.
D13830	Repair leaking valves - Repack gland and operate valv	No.	5 178.45	2 901.94	3 239.83	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D13832	200mm or 250mm or 300mm in diameter	No.	18 438.72	6 128.54	6 950.72	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D13834	350mm or 400mm or 450mm in diameter	No.	86 688.50	20 629.69	24 245.99	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D13836	500mm in diameter	No.	91 376.95	23 735.77	27 871.82	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D13840	Remove existing valve on operational water pipeline a	No.	4 658.69	1 369.01	3 964.89	According to specification PS-TD 3, the rate should not only allow for the removal of a valve on a live pipeline, but also for the installation of a new valve including all necessary couplings etc. The target rate clearly doesn’t allow for all of that and we therefore feel that other tenderers might not have allowed for everything as per the specification, but for the removal only as per the item description. We can therefore not offer a reduced rate very close to the target rate. We however reviewed our rate and can offer a slightly

						reduced rate.
D13850	200mm or 250mm or 300mm in diameter	No.	10 775.85	2 397.97	9 045.49	According to specification PS-TD 3, the rate should not only allow for the removal of a valve on a live pipeline, but also for the installation of a new valve including all necessary couplings etc. The target rate clearly doesn't allow for all of that and we therefore feel that other tenderers might not have allowed for everything as per the specification, but for the removal only as per the item description. We can therefore not offer a reduced rate very close to the target rate. We however reviewed our rate and can offer a slightly reduced rate.
D13860	350mm or 400mm or 450mm in diameter	No.	20 068.73	3 619.75	16 647.86	According to specification PS-TD 3, the rate should not only allow for the removal of a valve on a live pipeline, but also for the installation of a new valve including all necessary couplings etc. The target rate clearly doesn't allow for all of that and we therefore feel that other tenderers might not have allowed for everything as per the specification, but for the removal only as per the item description. We can therefore not offer a reduced rate very close to the target rate. We however reviewed our rate and can offer a slightly reduced rate.
D13870	500mm in diameter	No.	31 575.66	6 121.31	26 042.23	According to specification PS-TD 3, the rate should not only allow for the removal of a valve on a live pipeline, but also for the installation of a new valve including all necessary couplings etc. The target rate clearly doesn't allow for all of that and we therefore feel that other tenderers might not have allowed for everything as per the specification, but for the removal only as per the item description. We can therefore not offer a reduced rate very close to the target rate. We however reviewed our rate and can offer a slightly reduced rate.
D13970	Plaster and / or waterproof inside of valve chamber to	m²	325.95	196.29	245.88	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D14030	b) 50 mm diam.	No.	4 586.19	3 318.44	4 169.19	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D14040	Installation of Combination Air Valve (Air valve priced s	No.	5 623.22	4 232.44	5 476.59	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D14050	d) 100 mm diam.	No.	7 026.34	5 305.07	6 846.89	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D14100	Installation of wafer type Butterfly valve, joint, fixing, be	No.	38 783.33	8 123.86	10 411.02	For the installation of a new butterfly valve the description includes "joint", which therefore

						mean the contractor needs to allow for jointing and therefore for the jointing material. This item is also for the installation of 4 different size options, so for which size must tenderers allow in terms of jointing material. Most butterfly valves are flanged. We therefore allowed for two 500mm diameter flanged ranger couplings with stainless steel bolts and nuts. It could be that the other contractors allowed for smaller fittings or no coupling fittings at all and that could be the reason for the large difference in rates. We however reviewed our calculation of the rate for this item and are able to offer a revised rate.
D14190	Installation and provision of PVC pipe for access to val	No.	1 653.08	823.33	849.99	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D14200	Air valve boxes with ductile iron cover and cap (refer to	No.	7 767.60	5 114.50	6 601.25	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D14210	Air valve boxes with polymer concrete cover and cap (	No.	7 335.17	4 142.19	5 362.33	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D14270	Installation of new underground hydrant complete as p	No.	4 915.21	3 331.64	4 177.16	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D14280	Installation of new underground hydrant complete as p	No.	5 862.79	2 953.16	3 806.22	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D14290	Remove existing underground hydrant	No.	1 346.84	973.36	1 199.11	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D14300	Above ground (Pillar Type) Fire HydrantsSupply of new	No.	9 758.14	6 792.63	8 687.80	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D14320	Remove existing above ground pillar type hydrant	No.	2 244.73	1 586.75	1 998.51	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D14370	Repair leak at underground hydrant - replace washer o	No.	3 912.39	1 661.06	2 149.25	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D14380	Replace nozzle of fire hydrants	No.	2 102.79	1 559.54	2 011.54	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D14390	Repair leaking pillar type hydrant	No.	12 002.87	1 969.66	2 551.37	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D14520	ANCILLARIESAnchor/Thru st blocks and pedestalsCon	m^3	4 324.32	3 271.71	4 244.66	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D14590	c) 100mm up to 150mm in diameter	No.	2 867.40	1 864.54	2 420.62	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D14600	including 75mm diameter combination meterd) 200mm	No.	16 806.54	2 417.86	14 963.08	The cost of the 75mm diameter combination meter is already almost 5 times the target rate. We therefore cannot achieve the target rate. We further allowed for two socketed flanged adaptors. The description clearly states that a 75mm combination meter must be included, maybe some other

						tenderers did not allow for it. We however reviewed our rate and can offer a slightly reduced rate.
D14630	c) 100mm up to 150mm in diameter	No.	3 155.19	1 972.43	2 553.74	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D14640	including 75mm diameter combination meterd) 200mm	No.	17 094.33	2 608.27	15 219.31	The cost of the 75mm diameter combination meter is already almost 5 times the target rate. We therefore cannot achieve the target rate. We further allowed for two socketed flanged adaptors. The description clearly states that a 75mm combination meter must be included, maybe some other tenderers did not allow for it. We however reviewed our rate and can offer a slightly reduced rate.
D14660	b) 50mm up to 80mm in diameter	No.	2 434.97	1 802.43	2 326.19	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D14670	c) 100mm up to 150mm in diameter	No.	6 851.87	2 663.92	3 431.46	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D14680	including 75mm diameter combination meterd) 200mm	No.	24 210.93	3 641.85	21 555.31	The cost of the 75mm diameter combination meter is already almost 3 times the target rate. We therefore cannot achieve the target rate. We further allowed for two socketed flanged adaptors. The description clearly states that a 75mm combination meter must be included, maybe some other tenderers did not allow for it. We however reviewed our rate and can offer a slightly reduced rate.
D14690	Install new bulk water meter and chamber complete as	No.	94 066.83	55 452.40	71 986.37	It is important to note that only the bulk water meter is supplied by the city. The tenderer needs to allow for all the other 14 fittings. The cost of the other fittings as per drawing W4 is almost equal to the target rate. Allowance must then still be made for the installation cost as well as the supply of materials and construction of the chamber. The target rate therefore seems very low in order to cover all the cost that should be allowed for in this item. We however reviewed our calculation and can offer a slightly reduced rate.
D14700	b) 80mm in diameter	No.	107 204.49	61 554.17	79 444.07	It is important to note that only the bulk water meter is supplied by the city. The tenderer needs to allow for all the other 14 fittings. The cost of the other fittings as per drawing W4 is almost equal to the target rate. Allowance must then still be made for the installation cost as well as the supply of materials and construction of the chamber. The target rate therefore seems very low in order to cover all the cost that should be allowed for in this item. We however reviewed our calculation and can offer a slightly reduced rate.

D14710	c) 100mm in diameter	No.	115 580.08	66 690.07	86 204.72	It is important to note that only the bulk water meter is supplied by the city. The tenderer needs to allow for all the other 14 fittings. The cost of the other fittings as per drawing W4 is almost equal to the target rate. Allowance must then still be made for the installation cost as well as the supply of materials and construction of the chamber. The target rate therefore seems very low in order to cover all the cost that should be allowed for in this item. We however reviewed our calculation and can offer a slightly reduced rate.
D14720	d) 150mm in diameter	No.	170 580.22	90 934.46	117 141.74	It is important to note that only the bulk water meter is supplied by the city. The tenderer needs to allow for all the other 14 fittings. The cost of the other fittings as per drawing W4 is more than the target rate. Allowance must then still be made for the installation cost as well as the supply of materials and construction of the chamber. The target rate therefore seems very low in order to cover all the cost that should be allowed for in this item. We however reviewed our calculation and can offer a slightly reduced rate.
D14730	e) 200mm in diameter	No.	186 738.35	108 838.78	138 834.26	It is important to note that only the bulk water meter is supplied by the city. The tenderer needs to allow for all the other 14 fittings. The cost of the other fittings as per drawing W4 is more than the target rate. Allowance must then still be made for the installation cost as well as the supply of materials and construction of the chamber. The target rate therefore seems very low in order to cover all the cost that should be allowed for in this item. We however reviewed our calculation and can offer a slightly reduced rate.
D14740	f) 250mm in diameter	No.	345 419.89	171 796.54	222 559.16	It is important to note that only the bulk water meter is supplied by the city. The tenderer needs to allow for all the other 14 fittings. The cost of the other fittings as per drawing W4 is more than the target rate. Allowance must then still be made for the installation cost as well as the supply of materials and construction of the chamber. The target rate therefore seems very low in order to cover all the cost that should be allowed for in this item. We however reviewed our calculation and can offer a slightly reduced rate.
D14750	g) 300mm in diameter	No.	435 278.61	226 577.13	293 460.30	It is important to note that only the bulk water meter is supplied by the city. The tenderer needs to allow for all the other 14 fittings. The cost

						of the other fittings as per drawing W4 is more than the target rate. Allowance must then still be made for the installation cost as well as the supply of materials and construction of the chamber. The target rate therefore seems very low in order to cover all the cost that should be allowed for in this item. We however reviewed our calculation and can offer a slightly reduced rate.
D14820	Geotextile / Geomembrane wrapped around a crushed	m²	50.49	31.42	39.20	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D14840	New connections onto existing watermains by means o	No.	5 862.50	3 373.21	4 337.01	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D14850	b) 80mm to 100mm Under Pressure Drilling	No.	13 495.21	6 744.36	8 632.98	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
D15090	Magnum saddles (Polypropylene) and specials includin	No.	1 814.87	1 333.57	1 714.21	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
E200	ix) V - Channel (2 x C1)	m	863.01	642.27	810.02	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
E210	x) Cast-in-situ kerbing (25Mpa/19mm concrete)	m	778.46	572.34	741.96	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
E220	xi) Combined kerb and infall channel to match existing	m	720.77	515.42	668.50	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
E320	x) Cast-in-situ kerbing (25Mpa/19mm concrete)	m	717.41	546.57	702.03	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
E330	xi) Combined kerb and infall channel to match existing	m	677.67	506.80	656.26	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
F150	d) Exceeding 3,0 m but not exceeding 4,0m	m³	1 081.63	567.82	713.33	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
F160	e) Exceeding 4,0 m but not exceeding 5,0 m	m³	2 071.86	765.00	989.38	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
F450	SLIPLININGSliplining establishmentFixed charges	Sum	11 983.31	8 707.66	11 153.85	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
F580	Weld, and install HDPE flange adapter with stub and s	No.	1 658.78	793.64	1 028.54	The material cost for this item is more than the target rate. Tenderers must allow for a stub, stainless steel backing ring as well as the stainless steel bolts and nuts (not mentioned in item description but as per the tender document). We therefore cannot match the target rate, but after reviewing our calculation we can offer a slightly reduced rate.
F590	110mm dia	No.	1 917.90	935.16	1 215.45	The material cost for this item is more than the target rate. Tenderers must allow for a stub, stainless steel backing ring as well as the stainless steel bolts and nuts (not mentioned in item description but as per the tender document). We therefore cannot match the target rate, but

						after reviewing our calculation we can offer a slightly reduced rate.
F600	160mm dia	No.	3 394.15	1 498.60	1 944.05	The material cost for this item is more than the target rate. Tenderers must allow for a stub, stainless steel backing ring as well as the stainless steel bolts and nuts (not mentioned in item description but as per the tender document). We therefore cannot match the target rate, but after reviewing our calculation we can offer a slightly reduced rate.
F610	200mm dia	No.	5 671.53	2 351.00	3 044.74	The material cost for this item is more than the target rate. Tenderers must allow for a stub, stainless steel backing ring as well as the stainless steel bolts and nuts (not mentioned in item description but as per the tender document). We therefore cannot match the target rate, but after reviewing our calculation we can offer a slightly reduced rate.
F620	250mm dia	No.	10 632.24	3 747.36	4 318.12	The material cost for this item is more than the target rate. Tenderers must allow for a stub, stainless steel backing ring as well as the stainless steel bolts and nuts (not mentioned in item description but as per the tender document). We therefore cannot match the target rate, but after reviewing our calculation we can offer a slightly reduced rate.
F630	315mm dia	No.	10 438.53	4 695.87	5 884.86	The material cost for this item is more than the target rate. Tenderers must allow for a stub, stainless steel backing ring as well as the stainless steel bolts and nuts (not mentioned in item description but as per the tender document). We therefore cannot match the target rate, but after reviewing our calculation we can offer a slightly reduced rate.
F640	355mm dia	No.	14 543.65	6 820.90	8 060.90	The material cost for this item is more than the target rate. Tenderers must allow for a stub, stainless steel backing ring as well as the stainless steel bolts and nuts (not mentioned in item description but as per the tender document). We therefore cannot match the target rate, but after reviewing our calculation we can offer a slightly reduced rate.
F650	400mm dia	No.	21 833.80	9 665.18	11 680.02	The material cost for this item is more than the target rate. Tenderers must allow for a stub, stainless steel backing ring as well as the stainless steel bolts and nuts (not mentioned in item description but as per the tender document). We therefore cannot match the target rate, but after reviewing our calculation we can offer a slightly reduced rate.
F660	500mm dia	No.	34 887.44	13 901.70	17 523.00	The material cost for this item is more than the target rate. Tenderers must allow for a stub, stainless steel backing ring as well as the stainless steel (s/s) bolts and nuts (not mentioned in item description but as

						per the tender document). **To give you some insight, the s/s backing ring costs about R 16 000,00 and the stainless steel bolts and nuts is R 9 950,00**. If the target rate is based on rates from all tenderers then surely some did not allow for these s/s fittings. We therefore cannot match the target rate, but after reviewing our calculation we can offer a slightly reduced rate.
F670	Grouting of annulusGrouting of annulus	m³	16 539.91	3 630.70	4 673.75	[redacted] requested a quote from an experienced sub-contractor for the grouting of the annulus. We therefore had to include establishment and de-establishment cost over and above the rate per cubic meter. We reconsidered this rate and can therefore offer a revised rate.
F700	Disposal cost for dumping the drilling mud, including b	Ton	3 694.20	2 002.24	2 600.00	The item description specifically states that the material must be disposed of at an **accredited landfill site**. The two accredited landfill sites in Cape Town charge a set rate of R 2 600,00/ton for this type of waste material. We therefore cannot offer a reduced rate. We however reconsidered our mark-up, overhead allowance and CPA allowance for the first year and can therefore offer a reduced rate.
F710	Testing of bentonite sample	Sum	8 525.09	4 341.82	5 600.00	This again is a fixed rate charged by the accredited landfill site. We can therefore not offer a massive saving to get closer to the target rate. We however reconsidered our mark-up, overhead allowance and CPA allowance for the first year and can therefore offer a reduced rate.
G10	SITE SECURITY (LOW RISK)GENERAL ITEMSThe c	m	2 162.16	1 266.23	972.97	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
G20	1.1.2 Soil treatment around fence	m²	110.52	74.20	93.92	We reviewed our calculation of the rate for this item and are able to

						offer a revised rate.
G30	1.1.3 Gravel layer 75 mm thick around fence	m²	187.08	113.93	147.01	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
G40	1.1.4 Vehicular sliding gate size 5m x 3 m high consist	No	74 131.20	25 170.60	22 239.36	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
G80	1.3 CCTV, ACCESS CONTROL, ALARM SYSTEMS, E	No	34 699.00	3 453.86	4 468.88	[redacted]t requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
G90	1.3.1.3 Face camera	No	30 555.00	5 859.58	5 305.94	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return.

						This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
G100	1.3.1.4 Security enclosure camera	No	34 699.00	4 515.66	4 547.95	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
G110	1.3.1.5 Mounting pole 3m above ground	No	15 199.00	2 784.35	3 585.13	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
G120	1.3.1.6 Camera equipment enclosure mounted on a po	No	12 865.20	5 750.16	6 424.70	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the

						equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
G130	1.3.1.7 Network Video Recorder (NVR) including PoE	No	308 880.00	18 066.07	14 949.79	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
G140	1.3.2 Access control1.3.2.1 Non-contact card reader	No	9 680.00	3 929.18	4 200.77	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
G150	1.3.2.2 Access controllers	No	19 880.00	6 492.13	6 586.56	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J.

						Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
G160	1.3.2.3 Gooseneck support for the vehicle entrance inc	No	9 960.00	2 212.45	2 162.16	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
G170	1.3.5 Central equipment enclosure1.3.4.1 Tamper-resi	Sum	26 650.50	8 001.66	9 865.63	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
G190	1.3.4.3 Firewall, VPN and other equipment required to	Sum	54 350.00	12 562.48	12 509.64	[redacted] requested rates from a professional specialist supplier and installer of all the

						required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
G200	1.4 Repair and maintenance1.4.1 All systems shall be	Months	24 350.00	9 497.00	9 173.74	[redacted] requested revised quotes from the original installers as well as additional companies. After reviewing the revised quotes and our own strategy we are able to submit a reduced rate for this item.
G210	1.5 Installation1.5.1 The installation of the systems incl	Sum	175 995.00	39 328.49	39 536.64	[redacted] requested revised quotes from the original installers as well as additional companies. After reviewing the revised quotes and our own strategy we are able to submit a reduced rate for this item.
G220	1.6 Testing, commissioning and training1.6.1 Testing a	Sum	18 000.00	6 777.78	6 795.36	[redacted] requested revised quotes from the original installers as well as additional companies. After reviewing the revised quotes and our own strategy we are able to submit a reduced rate for this item.
G230	1.6.2 Training of operators, guards and other relevant	Sum	9 000.00	5 205.00	6 500.00	[redacted] requested revised quotes from the original installers as well as additional companies. After reviewing the revised quotes and our own strategy we are able to submit a reduced rate for this item.
H10	SITE SECURITY (MEDIUM RISK)GENERAL ITEMSTh	m	2 409.26	1 331.90	1 278.76	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape

						Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
H20	1.1.2 Extra over fencing for excavating, placing and ba	m	555.98	367.40	472.5	[redacted] requested revised quotes from the original installers as well as additional companies. After reviewing the revised quotes and our own strategy we are able to submit a reduced rate for this item.
H30	1.1.3 Soil treatment around fence	m²	110.52	82.20	98.4	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
H40	1.1.4 Gravel layer 75 mm thick around fence	m²	187.08	118.93	154.36	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
H50	1.1.5 Vehicular sliding gate size 5m x 3 m high consist	No	74 131.20	25 170.60	27 910.84	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
H60	1.1.6 Extra over for 6 No strand electrical fencing to to	m	488.03	298.90	370.66	[redacted] requested revised quotes from the original installers as well as additional companies. After reviewing the revised quotes and our own strategy we are able to submit a reduced rate for this item.
H80	1.1.8 Vehicular barrier comprising motorized booms 3.	No	44 465.00	33 622.95	33 493.01	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape

						Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
H100	1.3 CCTV, ACCESS CONTROL, ALARM SYSTEMS, E	No	34 699.00	7 809.86	7 595.70	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
H110	1.3.1.2 Vehicle camera	No	34 699.00	6 693.98	8 635.43	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
H120	1.3.1.3 Face camera	No	30 555.00	5 818.64	5 889.60	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital

						cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
H130	1.3.1.4 PTZ camera	No	119 286.00	8 241.66	10 680.35	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
H140	1.3.1.5 Security enclosure camera	No	34 699.00	4 432.86	4 417.20	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
H150	1.3.1.6 Mounting pole 3m above ground	No	15 199.00	2 784.35	3 366.90	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our

						strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
H160	1.3.1.7 Camera equipment enclosure mounted on a po	No	12 865.50	5 786.22	6 240.00	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
H170	1.3.1.8 Network Video Recorder (NVR) including PoE	No	308 880.00	17 395.57	19 170.00	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
H180	1.3.2 Access control1.3.2.1 Non-contact card reader	No	9 680.00	3 929.18	3 264.00	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and

						installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
H190	1.3.2.2 Access controllers	No	19 880.00	6 492.13	6 397.20	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
H200	1.3.2.3 Gooseneck support for the vehicle entrance inc	No	9 960.00	2 260.45	2 100.00	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.

H210	1.3.3 Alarm systems1.3.3.1 8J Electric fence energiser	No	29 660.00	6 207.34	6 583.20	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
H220	1.3.3.2 Electric fence control unit and link to the centra	No	32 115.00	4 894.63	4 608.00	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
H230	1.3.5 Central equipment enclosure1.3.5.1 Tamper-resi	Sum	26 650.00	8 001.66	9 582.00	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been

						applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
H250	1.3.5.3 Firewall, VPN and other equipment required to	Sum	54 350.00	12 562.48	11 880.00	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
H260	1.4 Repair and maintenance1.4.1 All systems shall be	Months	24 350.00	7 306.60	8 220.00	[redacted] requested revised quotes from the original installers as well as additional companies. After reviewing the revised quotes and our own strategy we are able to submit a reduced rate for this item.
H270	1.5 Installation1.5.1 The installation of the systems incl	Sum	175 995.00	42 743.39	42 240.00	[redacted] requested revised quotes from the original installers as well as additional companies. After reviewing the revised quotes and our own strategy we are able to submit a reduced rate for this item.
H280	1.6 Testing, commissioning and training1.6.1 Testing a	Sum	18 000.00	7 246.10	7 590.00	[redacted] requested revised quotes from the original installers as well as additional companies. After reviewing the revised quotes and our own strategy we are able to submit a reduced rate for this item.
H290	1.6.2 Training of operators, guards and other relevant	Sum	9 000.00	5 493.20	7 020.00	[redacted] requested revised quotes from the original installers as well as additional companies. After reviewing the revised quotes and our own strategy we are able to submit a reduced rate for this item.
J10	SITE SECURITY (HIGH RISK)GENERAL ITEMSThe c	m	3 583.01	1 417.98	1 423.81	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the

						equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
J20	1.1.2 Extra over fencing for excavating, placing and ba	m	555.98	368.50	420.00	[redacted] requested revised quotes from the original installers as well as additional companies. After reviewing the revised quotes and our own strategy we are able to submit a reduced rate for this item.
J40	1.1.4 Soil treatment around fence	m²	110.52	74.20	93.92	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
J50	1.1.5 Gravel layer 75 mm thick around fence	m²	187.08	118.93	154.56	We reviewed our calculation of the rate for this item and are able to offer a revised rate.
J60	1.1.6 Vehicular sliding gate size 5m x 3 m high consist	No	74 131.20	25 170.60	24 397.59	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
J70	1.1.7 Extra over for 8 No strand electrical fencing to to	m	525.10	324.70	308.88	[redacted] requested revised quotes from the original installers as well as additional companies. After reviewing the revised quotes and our own strategy we are able to submit a reduced rate for this item.
J100	1.1.10 Internal vehicular barrier comprising motorized	No	130 570.00	58 869.02	61 809.00	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the

						equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
J110	1.2 SECURITY GUARDSThe contractor shall make pr	Day	3 200.00	1 642.13	2 121.77	[redacted] requested revised quotes from the original security companies as well as additional companies. After reviewing the revised quotes and our own strategy we are able to submit a reduced rate for this item.
J120	1.2.2 Grade B security guard	Day	2 100.00	1 373.25	1 783.80	[redacted] requested revised quotes from the original security companies as well as additional companies. After reviewing the revised quotes and our own strategy we are able to submit a reduced rate for this item.
J140	1.3 CCTV, ACCESS CONTROL, ALARM SYSTEMS, E	No	30 555.00	3 848.17	4 736.40	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
J150	1.3.1.2 Gate camera	No	34 699.00	3 253.86	4 210.19	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to

						the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
J160	1.3.1.3 Vehicle camera	No	34 699.00	6 557.48	8 439.57	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
J170	1.3.1.4 Face camera	No	30 555.00	5 859.58	5 889.60	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
J180	1.3.1.5 Road camera	No	34 699.00	5 073.20	6 510.60	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital

						cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
J190	1.3.1.6 PTZ camera	No	119 286.00	9 428.86	10 954.20	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
J200	1.3.1.7 Security enclosure camera	No	34 699.00	4 545.26	4 417.20	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
J210	1.3.1.8 Mounting pole 3m above ground	No	15 199.00	3 074.35	3 366.90	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our

						strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
J220	1.3.1.9 Camera equipment enclosure mounted on a po	No	12 865.50	5 506.22	6 240.00	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
J230	1.3.1.10 Network Video Recorder (NVR) including PoE	No	308 880.00	18 530.41	24 060.56	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
J240	1.3.2 Access control1.3.2.1 Non-contact card reader	No	9 680.00	3 929.18	3 264.00	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and

						installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
J250	1.3.2.2 non-contact face recognition camera	No	30 555.00	9 811.38	10 670.40	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
J260	1.3.2.3 Access controllers	No	19 880.00	5 864.15	6 397.20	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.

J270	1.3.2.4 Gooseneck support for the vehicle entrance inc	No	9 960.00	2 477.45	2 100.00	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
J280	1.3.3 Alarm systems1.3.3.1 Multi infrared beam (8 bea	No	86 550.00	6 018.17	7 789.87	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
J290	1.3.3.2 Electric fence energiser	No	29 660.00	7 117.34	6 583.20	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been

						applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
J300	1.3.3.3 Electric fence control unit and link to the centra	No	32 115.00	4 211.85	4 608.00	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
J310	1.3.5 Central equipment enclosure1.3.5.1 Tamper-resi	Sum	26 650.50	8 552.91	9 582.00	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return. This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
J330	1.3.5.3 Firewall, VPN and other equipment required to	Sum	54 350.00	12 804.22	11 880.00	[redacted] requested rates from a professional specialist supplier and installer of all the required safety equipment and materials to be supplied and installed under the site security sections G, H and J. Originally we allowed for the equipment/material to be used once, but after reconsidering our strategy we decided to capitalize the supply cost of the equipment/material and allow for an internal rate to recover the capital cost over time at an acceptable rate of return.

						This enables [redacted] to provide a more competitive rate to the benefit of the City of Cape Town. A mark-up of 18% has been applied to cover overhead costs and profit. We therefore offer a reduced rate for this item.
J340	1.4 Repair and maintenance1.4.1 All systems shall be	Months	24 350.00	8 330.60	10 710.00	[redacted] requested revised quotes from the original installers as well as additional companies. After reviewing the revised quotes and our own strategy we are able to submit a reduced rate for this item.
J350	1.5 Installation1.5.1 The installation of the systems incl	Sum	175 995.00	48 935.79	48 000.00	[redacted] requested revised quotes from the original installers as well as additional companies. After reviewing the revised quotes and our own strategy we are able to submit a reduced rate for this item.
J360	1.6 Testing, commissioning and training1.6.1 Testing a	Sum	18 000.00	8 394.98	10 500.00	[redacted] requested revised quotes from the original installers as well as additional companies. After reviewing the revised quotes and our own strategy we are able to submit a reduced rate for this item.
J370	1.6.2 Training of operators, guards and other relevant	Sum	9 000.00	5 493.20	7 020.00	[redacted] requested revised quotes from the original installers as well as additional companies. After reviewing the revised quotes and our own strategy we are able to submit a reduced rate for this item.

In addition to the above, herewith additional explanations and information for the rate submitted for the following items:

ITEMS A100-1, A100-2 & A100-3

As explained above, each tenderer will make different allowances for time-related supervision costs. As there are no specific items provided for supervision time-related costs, contractors must include these costs under various time-related items. This may be done under a single item, multiple time-related items, or spread across other billed items. It is therefore not possible to directly compare individual time-related items, as each tenderer may adopt a different pricing strategy.

It is therefore recommended that the total of all time-related items be compared across the tenders received. Even this comparison may be distorted where certain tenderers have distributed their time-related supervision costs across the entire Bill of Quantities.

[redacted] have allowed for time-related supervision costs under items A100-1, A100-2, and A100-3. These rates may appear high when viewed in isolation, as other tenderers may have included similar costs under different items or combinations of items. The fact that these individual rates are higher does not necessarily indicate that [redacted] overall project pricing will be higher.

[redacted] have been appointed on several panel term tenders by the City of Cape Town over the past few years. To illustrate the above, we refer to a current contract on which we are appointed.

Under Contract No. 265Q/2021/22, a panel term tender for the replacement of water pipes by means of pipe bursting, [redacted] rate for Item A100 – Contractual Requirements is significantly higher than those of the other contractors on the panel. The average rate of the five contractors is R4,976.37, while [redacted] rate is R7,207.63, which is 44.83% higher than the average.

However, when the five time-related P&G items are combined, [redacted] total amounts to R8,559.06. This figure is much closer to the average combined rate of the other contractors, which is R7,648.63. In this comparison, [redacted] total is only 11.9% higher than the average.

Furthermore, [redacted] are ranked either first or second on approximately 95% of individual works projects when all quantities are taken into account. This demonstrates that a higher rate on a single time-related preliminary and general item does not necessarily negatively impact the overall ranking of contractors. Please refer to **Annexure A** below, which reflects the results of five recent works projects under this contract.

Based on the above and our pricing strategy, we therefore argue that the rates for items A100-1, A100-2, and A100-3 should not be further reduced beyond our first offer.

ITEMS D7490 to D7660

The headings for these items state that the rates for the supply and installation of these hydrant tees should also include the cost to supply the ranger couplings in order to fit the hydrant tees.

We noticed that for most of these items, the target rates are similar to the rates received from our supplier to supply the hydrant tee only. It therefore seems like some of the other tenderers might not have allowed for the ranger couplings.

[redacted] allowed for two ranger couplings per hydrant tee as per the heading for these items. We could however offer a slightly reduced rate on most of these items, but cannot reduce the rate any closer to the suggested target rate.

ITEMS D13822, D13824 and D13826

These items allow for the installation of different valve sizes under each item description. We queried this at time of tender, as the tenderer needs to allow for stainless steel bolts and nuts and gasket sets in order to fit these valves. The cost of stainless steel bolts and nuts and gaskets for different valve sizes are different.

Therefore, should a tenderer allow for the installation of an 80mm diameter valve under item D13830, but another allows for a 150mm diameter valve to be installed under the same item, the difference in cost will be substantial due to the large cost difference in gasket sets for an 80mm diameter valve and a 150mm diameter valve.

In addition, it is clearly stated in PS-TD 1 that the tenderer should allow for any incidentals required to complete the work, therefore stainless steel bolts, nuts and gaskets. Some

tenderers might not have allowed for this as it is not clearly stated in the item description, but only in the project specification.

We could however offer a reduced rate but cannot get any closer to your target rate.

ITEMS D13840 to D13870

PS-TD 3 clearly states that the tendered rate must cover the cost of installing a new valve (valve priced separately). However, the tenderers must allow for stainless steel bolts and nuts, gasket sets and denso tape. Looking at the target rate, it seems like some of the other tenderers made no allowance for these materials, and only made allowance for plant and labour to remove a valve.

As an example, the cost of the stainless steel bolts and nuts, gasket sets and denso tape to install a 500mm diameter valve is R 20 700,00, much higher than the target rate of R 6 121.31.

Although we offered a reduce rate, we cannot further reduce our rate in order to get closer to your target rate.

ITEMS D14600, D14640 and D14680

The headings to these items clearly state that the tendered rate should not include the cost of the meter as it is supplied by the City of Cape Town.

However, additional sub-headings for items D14600, D14640 and D14680 state that additional allowance must be made for a 75mm diameter combination meter in the case of installing 200mm diameter meters.

The ambiguity arises as to whether the tenderer is required to allow for the supply of the 75 mm diameter combination meter, or whether this meter will also be supplied by the City of Cape Town.

Based on the target rates for these items it seems like most tenders did not make an allowance to supply the combination meters. As an example, the target rate for item D14600 is R 2 417.86 while the cost of a 75mm combination meter is R 10 410,00.

Our understanding of the item descriptions is that the City of Cape Town will supply the meter, but that the tenderer must allow for the supply of the combination meter. In this case, we cannot offer additional savings on the rates submitted. However, if the City of Cape Town can confirm that the combination meters will also be supplied by the City, then we will be able to offer much lower rates for these items.

We considered your request carefully and trust that the above suitably addresses your query, however if you require additional information, do not hesitate to contact us.

Yours faithfully

[redacted]

[redacted]

ANNEXURE A

TERM TENDER FOR TRENCHLESS REHABILITATION OF WATER MAINS BY PIPE-CRACKING

WORKS PROJECT NO: 265Q/2021/22 R2-23 (Preliminary)

CONTRACTOR	PROJECT AMOUNT (Inc Vat)	BBBEE LEVEL	POINTS FOR PRICE (MAX 90)	POINTS BBBEE (MAX 10)	TOTAL ADJUDICATION POINTS	RANKING
[redacted]	R 4 919 688.25	1	86.32	10	96.32	3
	R 4 726 279.02	1	90.00	10	100.00	1
	R 4 750 599.57	2	89.54	9	98.54	2
	R 5 104 844.34	2	82.79	9	91.79	4
	R 5 420 116.90	1	76.79	10	86.79	5

TERM TENDER FOR TRENCHLESS REHABILITATION OF WATER MAINS BY PIPE-CRACKING

WORKS PROJECT NO: 265Q/2021/22 R2-19 (Preliminary revised)

CONTRACTOR	PROJECT AMOUNT (Inc Vat)	BBBEE LEVEL	POINTS FOR PRICE (MAX 90)	POINTS BBBEE (MAX 10)	TOTAL ADJUDICATION POINTS	RANKING
[redacted]	R 6 192 742.21	1	77.98	10	87.98	5
	R 5 462 887.71	1	90.00	10	100.00	1
	R 5 557 969.11	2	88.43	9	97.43	2
	R 5 914 361.97	2	82.56	9	91.56	3
	R 6 153 257.95	1	78.63	10	88.63	4

TERM TENDER FOR TRENCHLESS REHABILITATION OF WATER MAINS BY PIPE-CRACKING

WORKS PROJECT NO: 265Q/2021/22 R3A-05 (Preliminary)

CONTRACTOR	PROJECT AMOUNT (Inc Vat)	BBBEE LEVEL	POINTS FOR PRICE (MAX 90)	POINTS BBBEE (MAX 10)	TOTAL ADJUDICATION POINTS	RANKING
[redacted]	R 5 211 851.03	1	90.00	10	100.00	1
	R 5 860 416.07	1	78.80	10	88.80	2
	R 6 043 350.77	2	75.64	9	84.64	3
	R 6 341 031.34	2	70.50	9	79.50	5
	R 6 248 115.13	1	72.11	10	82.11	4

TERM TENDER FOR TRENCHLESS REHABILITATION OF WATER MAINS BY PIPE-CRACKING

WORKS PROJECT NO: 265Q/2021/22 R3A-04 (Preliminary)

CONTRACTOR	PROJECT AMOUNT (Inc Vat)	BBBEE LEVEL	POINTS FOR PRICE (MAX 90)	POINTS BBBEE (MAX 10)	TOTAL ADJUDICATION POINTS	RANKING
[redacted]	R 5 285 761.67	1	90.00	10	100.00	1
	R 5 855 277.36	1	80.30	10	90.30	2
	R 5 993 698.12	2	77.95	9	86.95	3
	R 6 364 186.98	2	71.64	9	80.64	5
	R 6 369 563.96	1	71.55	10	81.55	4

TERM TENDER FOR TRENCHLESS REHABILITATION OF WATER MAINS BY PIPE-CRACKING

WORKS PROJECT NO: 265Q/2021/22 R3Z-03 (Preliminary)

CONTRACTOR	PROJECT AMOUNT (Inc Vat)	BBBEE LEVEL	POINTS FOR PRICE (MAX 90)	POINTS BBBEE (MAX 10)	TOTAL ADJUDICATION POINTS	RANKING
[redacted]	R 2 832 053.89	1	88.74	10	98.74	2
	R 2 792 824.05	1	90.00	10	100.00	1
	R 2 881 348.72	2	87.15	9	96.15	4
	R 2 894 167.71	2	86.73	9	95.73	5
	R 2 877 789.47	1	87.26	10	97.26	3

TENDER 150Q/2024/25: TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

(TO BE FILLED IN BY THE CONTRACTOR)

Confirmation of Receipt

The contractor identified in the offer part of the Contract hereby confirms receipt from the City of Cape Town (identified in the acceptance part) of 1 (one) complete, signed copy of the Contract containing price schedule as awarded by the BAC, including the *Schedule of Deviations* (if any) on:

The..... (Day)

Of..... (Month)

20..... (year)

At..... (Place)

For the Supplier: Signature(s) . . . . . .

Name(s) . . . . . .

Capacity . . . . . .

Signature and name of witness:

Signature . . . . . Name . . . . . .

C1.2 Contract Data

Part 1: Contract Data provided by the Employer

GENERAL CONDITIONS OF CONTRACT

The following standardised General Conditions of Contract:

General Conditions of Contract for Construction Works, Third Edition, 2015

prepared by the South African Institution of Civil Engineering (SAICE) shall apply to and form the General Conditions of Contract for this contract. Copies of these conditions of contract are obtainable from the South African Institution of Civil Engineering (SAICE), Private Bag X200, Halfway House 1685, Tel: (011) 805 5947, Fax: (011) 805 5971, e-mail: civilinfo@saice.org.za.

Copies of the General Conditions of Contract are available for inspection and scrutiny at the offices of the Employer.

The Pro-formas bound with the General Conditions of Contract 2015, on pages 96 to 113 shall not apply to this Contract and shall be replaced with the documentation bound into this Contract Document.

The General Conditions of Contract make several references to the Contract Data for specific data, which together with these conditions collectively describe the risks, liabilities and obligations of the contracting parties and the procedures for the administration of the Contract. The Contract Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the general conditions of contract.

The General Conditions of Contract shall be read in conjunction with the variations, amendments and additions set out in the Contract Specific Data below. Each item of data given below is cross-referenced to the clause in the General Conditions of Contract to which it mainly applies.

The documents forming the Contract are to be taken as mutually explanatory of one another. For the purposes of interpretation, the priority of the documents shall be in accordance with the following sequence.

a) the Form of Offer and Acceptance,
b) the Contract Specific Data within the Contract Data,
c) the General Conditions of Contract for Construction Works, Third Edition, 2015,
d) the Drawings,
e) the Scope of Work,
f) the Pricing Data, and
g) the conditions of tender, the tender data and tender schedules.

If an ambiguity or discrepancy is found in the documents, the Employer's Agent shall issue any necessary clarification or instruction.

CONTRACT SPECIFIC DATA

The following contract specific data, referring to the General Conditions of Contract for Construction Works, Third Edition, 2015, are applicable to this Contract:

Clause 1.1.1.2:

Add the following after "Bill of Quantities":

, also referred to as Bills of Quantities,

Clause 1.1.1.7:

Add the following after "Contract" and before "means":

, also referred to as Framework Contract or term tender contract,

Add the following after "Acceptance,":

including, if applicable, the Form of Offer and Acceptance in a Works Project contract document, in which case "Contract" includes the Works Project contract,

Clause 1.1.1.11:

Add the following after "Acceptance":

... of a Works Project.

The Contract Sum for each Works Project shall for Panel 1 exceed R1 million and not exceed R3 million, Panel 2 exceed R3 million and not exceed R6 million and for Panel 3 exceed R6 million and not exceed R10 million (including contingencies and VAT excluding CPA).

Clause 1.1.1.13:

The Defects Liability Period is **12** months per Works Project.

Clause 1.1.1.14:

Delete "Commencement Date" and replace with:

date specified in the Works Project contract for commencement with Works execution,

The time for achieving Practical Completion, inclusive of non-working days referred to in Clause 5.8.1 below, but exclusive of special non-working days (Clause 5.8.1), will be determined for each Works Project as specified in the Works Project contract document.

Clause 1.1.1.15:

The **Employer** is the CITY OF CAPE TOWN, represented by the Director : WATER AND SANITATION: DISTRIBUTION SERVICES, or such other Director named in the Works Project contract document(s), and/or such other person or persons duly authorised thereto by the Employer in writing.

The name of the Employer is: CITY OF CAPE TOWN
DIRECTORATE: WATER AND SANITATION: DISTRIBUTION SERVICES

and is referred to in the Contract documents by the terms "Employer", "City of Cape Town" or "Council" as the context provides.

Clause 1.1.1.16:

Add the following after "Contract Data":

in the Works Project contract document,

The name of the Employer's Agent will be stated in the Works Project contract document(s) and who may be an employee of the Employer or, alternatively, may be an independent agent appointed by the Employer.

Clause 1.1.1.20

Add the following after "Contract":

and also includes the Form of Offer and Acceptance applicable in each Works Project contract document.

Clause 1.1.1.26:

The Pricing Strategy is a Re-measurement Contract.

Clause 1.1.1.28:

The Scope of Work in this Framework Contract document is applicable, as relevant, together with the project specific Scope of Work in each Works Project contract document.

Clause 1.1.1.33:

The "Works" applies to the Works Projects individually or as a whole, as the context provides.

Add the following Clauses after Clause 1.1.1.34:

1.1.1.35 "**Drawings**" means all drawings, calculations and technical information forming part of the Contract documents and any modifications thereof or additions thereto from time to time approved in writing by the Employer's Agent or delivered to the Contractor by the Employer's Agent.

1.1.1.36 "**Framework Contract**" means the Contract as defined in Clause 1.1.1.7; and "**Framework Contract Period**" means the period stated in the Contract Data, during which Works Projects may be allocated to the Contractor and for which Purchase Orders may be raised (issued) provided that such orders be completed prior to the expiry of the period; provided that the Framework Contract shall continue to remain in force after the expiration of the Framework Contract Period until the Final Approval Certificate has been issued by the Employer's Agent for the last outstanding Works Project at the expiration of the Defects Liability Period of that Works Project.

1.1.1.37 "**Framework Contract Manager**" means the person named as the Framework Contract Manager in the Contract Data or any other person appointed from time to time by the Employer and of whom the Contractor is notified, in writing, to act as Framework Contract Manager for the purposes of the Contract as substitute for the Framework Contractor Manager so named.

The function of the Framework Contract Manager is to administer the Framework Contract, and such functions as would normally fall to the Employer's Agent in accordance with the provisions of the Framework Contract, shall be undertaken by the Framework Contract Manager in this regard.

The Framework Contract Manager shall be an employee of the Employer, authorised as its representative to administer the Framework Contract, and all references to "Employer's Agent" in the Contract shall apply to the Framework Contract Manager in respect of his/her administering the Framework Contract.

The Framework Contract Manager is:

Name: [redacted]
Address: City of Cape Town
Water and Sanitation Head Office
8 Voortrekker Road
Corner of Mike Pienaar Boulevard and Voortrekker Road
Bellville
7535

1.1.1.38 "**Letter of Notification**" means the letters of formal notification, signed by the Employer, of the decision of the Supply Chain Management Bid Adjudication Committee sent to all tenderers. The notification of the decision does not form part of the Employer's Acceptance of a successful tenderer's Offer and no rights shall accrue.

1.1.1.39 "**Panel**" means a number of contractors, of which the Contractor is one, appointed by the Employer under the Framework Contract to be available to execute Works Projects as and when they arise.

1.1.1.40 "**Purchase Order**" means the official purchase order created and released on the City of Cape Town's SAP System.

1.1.1.41 "**Schedules of Rates**" means, in this Framework Contract document, the document so designated in the Pricing Data, and which will be used to compile Bills of Quantities in the Works Project contract document(s).

1.1.1.42 "**Works Project**" means a part of the Works to be performed (task) by a Contractor under the Contract, the specific terms, conditions and scope of the Works Project contract being specified in a Works Project contract document.

1.1.1.43 "**Works Project Acceptance/Refusal Notice**" means the formal notification, signed by the successful tenderer/prospective Contractor and sent to the Employer, of his decision to accept/ refuse the opportunity afforded to participate further in the Contractor appointment procedure for a Works Project as specified in the Contract.

1.1.1.44 **"Intellectual Property"** means any and all intellectual property rights of any nature anywhere in the world whether registered, registerable or otherwise, including patents, trademarks, registered designs and domain names, applications for any of the foregoing, trade or business names, copyright and rights in the nature of copyright, design rights, rights in databases, know-how, trade secrets and any other intellectual property rights which subsist in computer software, computer programs, websites, documents, information, techniques, business methods, drawings, logos, instruction manuals, lists and procedures and particulars of customers, marketing methods and procedures and advertising literature, including the "look and feel" of any websites

Clause 1.2.1.2:

The address of the Employer is:

Physical address: Tower Block, Civic Centre
12 Hertzog Boulevard
Cape Town
8001

Postal address: P O Box 298
Cape Town
8000

E-mail address: [redacted]

The address of the Employer's Agent will be stated in the Works Project contract document(s).

Clause 1.3:

Delete Clause 1.3.5 in its entirety and replace with the following:

1.3.5 Intellectual Property

1.3.5.1 The Contractor acknowledges that it shall not acquire any right, title or interest in or to the Intellectual Property of the Employer.

1.3.5.2 The Contractor hereby assigns to the Employer, all Intellectual Property created, developed or otherwise brought into existence by it for the purposes of the contract, unless the Parties expressly agree otherwise in writing.

1.3.5.3 The Contractor shall be deemed to have given the Employer a non-terminable, transferable, non-exclusive, royalty-free licence to copy, use and communicate the Contractor's documents, including making and using modifications of such documents for further work required to the Works.

1.3.5.4 The Contractor shall, and warrants that it shall:

1.3.5.4.1 not be entitled to use the Employer's Intellectual Property for any purpose other than as contemplated in this contract;

1.3.5.4.2 not modify, add to, change or alter the Employer's Intellectual Property, or any information or data related thereto, nor may the Contractor produce any product as a result of, including and/or arising from any such information, data and Intellectual Property, and in the event that it does produce any such product, the product shall be, and be deemed in law to be, owned by the Employer;

1.3.5.4.3 not apply for or obtain registration of any domain name, trademark or design which is similar to any Intellectual Property of the Employer;

1.3.5.4.4 comply with all reasonable directions or instructions given to it by the Employer in relation to the form and manner of use of the Employer Intellectual Property, including without limitation, any brand guidelines which the Employer may provide to the contractor from time to time;

1.3.5.4.5 procure that its employees, directors, members and contractors comply strictly with the provisions of clauses 1.3.5.4.1 to 1.3.5.4.3 above; unless the Employer expressly agrees thereto in writing after obtaining due internal authority.

1.3.5.5 The Contractor represents and warrants to the Employer that, in providing goods, services or both, as the case may be, for the duration of the contract, it will not infringe or make unauthorised use of the Intellectual Property rights of any third party and hereby indemnifies the Employer from any claims, liability, loss, damages, costs, and expenses arising from the infringement or unauthorised use by the contractor of any third party's Intellectual Property rights.

1.3.5.6 In the event that the contract is cancelled, terminated, ended or is declared void, any and all of the Employer's Intellectual Property, and any and all information and data related thereto, shall be immediately handed over to the Employer by the contractor and no copies thereof shall be retained by the contractor unless the Employer expressly and in writing, after obtaining due internal authority, agrees otherwise.

Add the following Clause after Clause 1.3.6:

1.3.7 The parties agree that this contract shall also be subject to the Employer's Supply Chain Management Policy ('SCM Policy') that was applicable on the date the bid was advertised. Please refer to this document contained on the CCT's website.

1.3.8 Abuse of the supply chain management system is not permitted and may result in cancellation of the contract, restriction of the supplier, and/or the exercise by the Employer of any other rights and remedies available to it as described in the SCM Policy.

1.3.9 Protection of Personal Information Act of 2013

1.3.9.a By submitting a tender to the Employer, (and by concluding any ensuing related agreement with the City of Cape Town, if applicable), the Contractor thereby acknowledges and unconditionally agrees:

1.3.9.b that the Contractor has been informed of the purpose of the collection and processing of its personal information as defined in the Protection of Personal Information Act of 2013 ("POPIA"), which, for the avoidance of doubt is for, and in relation to, the tender process and the negotiation, conclusion, performance and enforcement of the ensuing agreement, if applicable, as well as for the Employer's reporting purposes;

1.3.9.c to the collection and processing of the Contractor's personal information by the Employer and agrees to make available to the Employer, all information reasonably required by the Employer for the above purposes;

1.3.9.d that the personal information the Employer collects from the Contractor or about the Contractor may be further processed for other activities and/or purposes which are lawful, reasonable, relevant and not excessive in relation to the purposes set out above, for which it was originally collected;

1.3.9.e that,the Contractor indemnifies the Employer and its officials, employees, and directors and undertakes to keep the Employer and its officials, employees, and directors indemnified in respect of any claim, loss, demands, liability, costs and expenses of whatsoever nature which may be made against the Employer (including the costs incurred in defending or contesting any such claim) in relation to the Contractor or the Contractor's employees', representatives' and/or sub-Suppliers' non-compliance with POPIA and/or the Employer's failure to obtain the Contractor's consent or to notify the Contractor of the reason for the processing of the Contractor's personal information;

1.3.9.f to the disclosure of the Contractor's personal information by the Employer to any third party, where the Employer has a legal or contractual obligation to disclose such personal information to the third party (or a legitimate interest exits therein);

1.3.9.g that, under POPIA, the Contractor may request to access, confirm, request the correction, destruction, or deletion of, or request a description of, personal information held by the Employer in relation to you, subject to applicable law; and

1.3.9.h that under POPIA, subject to applicable law, the Contractor also has the right to be notified of a personal information breach and the right to object to, or restrict, the Employer's processing of its personal information.

1.3.9.i All requests relating to data protection must be submitted in writing to:
The City Manager - C/o the Information Officer, Corporate Services Directorate
Via hand delivery at: 20th Floor, Tower Block, 12 Hertzog Boulevard, Cape Town 8001
Via post at: Private Bag X918, Cape Town, 8000
Via email at: Popia@capetown.gov.za.

1.3.10 As required by section 116(2)(b) of the Local Government: Municipal Financial Management Act 56 of 2003, the CCT shall monitor the performance of the Supplier on at least a monthly basis, and the Supplier agrees to provide the CCT with its full cooperation in this regard.

Clause 2:

Add the following Clause after Clause 2.5.1:

2.6 Procedures for the allocation of Works Projects

The Employer reserves the right to plan, allocate and effect individual Works Projects at its sole discretion and as described in this document.

The Employer will only order those quantities of work items which it actually requires for execution in a Works Project from time to time. The Employer reserves the right not to order any quantities at all depending on circumstances and subject to operational requirements.

The Works Projects shall be executed in areas within the City of Cape Town municipal area and outlined in clause C.1.6.1 in Part T1.2 Tender Data.

The Works Projects shall be identified subject to availability of funding.

The procedures for the allocation of Works Projects are described in detail at the end of this Part 1: Contract Data provided by the Employer.

Clause 3.1

Delete clause

Clause 3.2.2

Add the following at the end of the clause:

If, in exercising any discretion, the result of such decision would be to utilise the contingency allowance, increase the contract value or granting of time for practical completion, the Employer's Agent must obtain approval from the Employer that such funding or time is available and granted by the Employer to be awarded prior to finalising such a decision.

Clause 3.2.3:

The Employer's Agent shall obtain the specific approval of the Employer before executing any of his functions or duties according to the following Clauses of the General Conditions of Contract or Contract Data:

a) Clause 3.3.1 Nomination of Employer's Agent's Representative
b) Clause 3.3.4 Employer's Agent's authority to delegate
c) Clause 5.8.1 Non-working times
d) Clause 5.11.1 Suspension of the Works
e) Clause 5.12.4 Acceleration instead of extension of time
f) Clause 6. All actions in terms of the clause, subject to 3.2.2 of the Contract Data
g) Clause 6.4.1 Approval of rates for new items
h) Clause 6.10.10 Advance payment, for items not listed in the Advance Payment Schedule
j) Clause 10.1.5 All actions in terms of the clause, subject to 3.2.2 of the Contract Data

Clause 3.3.2.2.3:
Delete the words "oral or" from the clause

Clause 3.3.2.2.4:
Delete the words "oral or" from the clause

Clause 5:

Add the following Clause after Clause 5.1.1.2:

5.1.2 Framework Contract Period

The Framework Contract Period is for a period of **sixty (60) months** calculated from the Commencement Date.

Clause 5.3:

Delete Clauses 5.3.1 to 5.3.3 in their entirety and replace with the following:

5.3.1 Upon appointment to the Panel or Panels the Contractor shall submit the required documentation, for approval by the Framework Contract Manager, as set out below. If the documentation is not submitted with 14 days from the Commencement Date, or is found to be unacceptable, the Employer may terminate the Framework Contract in terms of Clause 9.2.

The documentation required is:

a) Approved framework Health and Safety Plan (Refer to applicable clause in the Health and Safety Specification in Part C3.5 in the Scope of Work)
b) Security (Refer to Clause 6.2)
c) Evidence of Insurance (Refer to Clause 8.6)
d) Occupational Health and Safety Agreement (Part C1.5 in Agreements and contract Data)

e) Letter of Good Standing from the Compensation Commissioner (if not insured with a Licensed Compensation Insurer) (Refer to Clause 4.3)
f) Protection of the Environment Declaration (Part C1.6 in Agreements and Contract Data)

5.3.2 The Contractor shall, save as may be otherwise provided in the Contract or be legally or physically impossible, commence executing the Works on the date specified in the Works Project contract; subject to the submission by the Contractor, and approval by the Employer's Agent, of any documentation required before commencement with Works execution, as set out in the Works Project contract.

The following documentation shall be submitted for **each Works Project** by the highest ranked contractor on a Panel as part of the Works Project submission:

a) Approved site specific Health and Safety plan (Refer to Health and Safety Specification in Part C3.5 Management and any other specific requirements stated in the Works Project contract document)
b) Initial Programme (Refer to Clause 5.6)
c) Evidence of Insurance (Refer to Clause 8.6)
d) Valid Letter of Good Standing with the Bargaining Council for the Civil Engineering Industry (BCCEI)

The time to submit any documentation required before commencement with Works execution of **each Works Project** shall be within the number of days from the Commencement Date of the Works Project as specified in the Works Project contract. Such documentation may include:

e) Method Statement (Refer to Environmental Management Specification in Part C3.5 Management)

5.3.3 Notwithstanding the provisions of Clause 5.3.2, where a construction work permit from the Provincial Director of the Department of Labour is required for a Works Project, commencement of the Works Project shall not be deemed to take place until such construction work permit has been issued by the Provincial Director.

5.3.4 Application for Construction Work Permit

Where the Employer is required to apply to the Provincial Director of the Department of Labour for a construction work permit to perform the intended construction work, the employer shall do so as soon as possible after the appointment of the contractor has been finalised and the contractor has been appointed as principal contractor in terms of Regulation 5(1)(k) of the Construction Regulations (2014) and upon receipt of relevant documents as stated in clause 5.3.1.

Should the issuing of a construction work permit delay the Employer's Agent's instruction to commence executing the Works Projects and this in turn causes a delay to Practical Completion of more than 60days, then the Contractor shall be entitled to make a claim in accordance with Clause 10.1. Should, however, the issuing of a construction work permit be delayed by the submission of a unacceptable draft Health and Safety Plan, in the opinion of either the Employer's Health and Safety Agent, or the Provincial Director of the Department of Labour, no claim for an extension of time will be entertained.

Clause 5.4.2:

Access to and possession of the Site shall not be exclusive to the Contractor insofar as the provisions of Clause 4.8 apply, and where ongoing use by the general public is required.

Add the following Clause after Clause 5.4.3:

5.4.4 The Contractor shall bear all costs and charges for special and temporary rights of way required by him in connection with access to the Site.

Clause 5.6.2.3:

Insert the following after "...approvals,":

... permits,

Clause 5.8.1:

The non-working days are Saturdays and Sundays.

The special non-working days are:

a) All gazetted public holidays.
b) Year-end break(s) not exceeding 15 working days in duration.

Clause 5.12.1:

Add the following:

The Contractor may not claim a delay on another Works Project as causing delay on the particular Works Project contract in question.

Clause 5.12.2.2:

No extension of time will be granted in respect of any delays attributed to normal climatic conditions. Normal climatic conditions shall be deemed to include normal rainfall and associated wet conditions and materials, strong winds and extremes of temperature. However, in the event that delays to critical activities exceed the number of working days listed below for each month, then abnormal climatic conditions shall be deemed to exist, and an extension of time may be claimed in accordance with the provisions of Clause 5.12.

The number of days quoted below shall be regarded as a fair estimate of the delays to be anticipated and allowed for under normal climatic conditions where inclement weather prevents or disrupts critical work.

January	2 days
February	2 days
March	2 days
April	2 days
May	2 days
June	4 days
July	4 days
August	4 days
September	4 days
October	2 days
November	2 days
December	2 days

Claims for delays for abnormal climatic conditions shall be accompanied by substantiating facts and evidence, which shall be submitted timeously as each day or half-day delay is experienced.

It shall be further noted that where the critical path is not affected, no extension of time for abnormal climatic conditions or for any other reason will be entertained.

Clause 5.13.1:

The penalty for failing to complete the Works of each Works Project within the time referred to in Clause 1.1.1.14 is for the different panels is as follows:
Panel 1: Above R1 000 000 up to R3 000 000: 3CE or higher: **R3000** per day
Panel 2: Above R3 000 000 up to R6 000 000: 4CE or higher: **R5000** per day
Panel 3: Above R6 000 000 up to R10 000 000: 5CE or higher: **R7000** per day.

Insert the following after "actual date of Practical Completion":

... or, in the case of termination by the Employer in terms of Clause 9.2.1, the actual date of termination,

Clause 5.16.3:

The latent defects period is **10** years.

Clause 6.2.1:

The security to be provided by the Contractor shall be a blanket performance guarantee of **R450 000** for Panel 1: Above R1 000 000 up to R3 000 000: 3CE or higher, **R1 260 000** for Panel 2: Above R3 000 000 up to R6 000 000: 4CE or higher and **R2 100 000** for Panel 3: Above R6 000 000 up to R10 000 000: 5CE or higher. The performance guarantee shall contain the precise wording of the document included in Part C1.3 of the Contract Data: **Form of Performance Guarantee**, and it shall be issued by a financial institution approved by the Employer at the date when the guarantee is issued. The list of approved financial institutions current at the date of tender is attached to the **Form of Performance Guarantee.**

In the event of the guarantee being called up (in full or in part) the Contractor shall within 21 days of the issue of a first written demand by the Employer to the Guarantor, provide at his own cost a replacement performance guarantee of R450 000 for Panel 1: Above R1 000 000 up to R3 000 000: 3CE or higher, R1 260 000 for Panel 2: Above R3 000 000 up to R6 000 000: 4CE or higher and R2 100 000 for Panel 3: Above R6 000 000 up to R10 000 000: 5CE or higher, and no work will be allocated to the Contractor until the replacement performance guarantee has been provided.

Clause 6.2.2:

Delete Clause 6.2.2 in its entirety.

Clause 6.2.3:

Delete Clause 6.2.3 in its entirety and replace with the following:

The Contractor shall ensure that the performance guarantee remains valid and enforceable until the last Certificate of Completion of the Works for the Works Projects is issued.

Clause 6.5.1.2.3:

The percentage allowance to cover overhead charges is **10%**

Clause 6.8.2:

Add the following to Clause 6.8.2:

The Contract Price shall be subject to contract price adjustment in accordance with Clause 6.8 of the General Conditions of Contract.

If special materials are specified in Part 2 of the Contract Data then the provisions of Clause 6.8.3 of the General Conditions of Contract shall apply to such special materials.

Where applicable, in terms of the foregoing, the value of the certificates issued shall be adjusted in accordance with the Contract Price Adjustment Schedule with the following values:

The value of "x" is 0,10.

The values of the coefficients for "Water and Sewer Reticulation" are:

a = 0,15 b = 0,20 c = 0,55 d = 0,10

The base month is one month prior to the month in which the tender closed.

Furthermore, the Contract Price Adjustment Schedule shall be amended as follows:

From the date of commencement the rates should be fixed for 12 months, therefore the first adjustment will be done in month 13 and the current month will be 2 months prior to the 13th month.

The second adjustment will be done in month 25 and the current month will be 2 months prior to the 25th month

The Third adjustment will be done in month 37 and the current month will be 2 months prior to the 37th month

The Fourth adjustment will be done in month 49 and the current month will be 2 months prior to the 49th month

"L" is the "Labour Index" and shall be the Consumer Price Index (CPI) for "All items (CPI Headline)", as published in the Statistical News Release, P0141: Table A – Consumer Price Index: Main Indices of Statistics South Africa

"P" is the "Plant Index" and shall be the Construction Materials Price Index for "Plant and Equipment" as published in the Statistical News Release P0151.1, Table 4 – Mining and construction plant and equipment price index of Statistics South Africa

"M" is the "Materials Index" and shall be the Construction Materials Price Index for selected materials, Materials for "Civil Engineering material – total," as published in the Statistical News Release P0151.1, Table 6 – Civil engineering material price indices of Statistics South Africa

"F" is the "Fuel Index" and shall be the Producer Price Index (PPI) for "Coal and Petroleum Products - Diesel", as published in the Statistical News Release P0142.1: Table 1 –PPI for final manufactured goods of Statistics South Africa

Clause 6.8.3: Variation in the cost of special materials

Price adjustment for variations in the cost of special materials is provided for in the Special Materials Schedule at the end of this Part 1: Contract Data provided by the Employer.

Clause 4.2 of the Contract Price Adjustment Schedule

Delete the words "by the Contractor" that appear after "…. entered in the Contract Data"

Clause 6.8.4:

Add the following to Clause 6.8.4:

Notwithstanding the above, in the event that a public holiday is proclaimed after 7 days before the closing date for an offer on a Works Project, no costs other than those that can be claimed under Clause 5.12.3 shall be added to the Contract Price.

Add the following after Clause 6.8.4:

6.8.5. If price adjustment for variations in the cost of plant and materials imported from outside of South Africa is provided for in the contract data, such adjustment shall be based on the information contained on the schedule titled "**Price Basis for Imported Resources"**and as below. For the purposes of this clause the Rand value of imported Plant and Materials inserted on the schedule titled "**Price Basis for Imported Resources"** (column (F)) shall be the value in foreign currency (column (A)) converted to South African Rand (column (C)) by using the closing spot selling rate quoted by **Employer's** main banker, [redacted] on the Base Date (seven calendar days before tender closing date) rounded to the second decimal place (column(B)), to which shall be added any Customs Surcharge and Customs Duty applicable at that date (columns (D) and (E)).

6.8.5.1 Adjustment for variations in rates of exchange:

(a) The value in foreign currency inserted in column (A) shall be subject to clause (h) below when recalculating the Rand value.

(b) The rate of exchange inserted in column (B) shall be the closing spot selling rate quoted by **Employer's** main banker, [redacted] on the Base Date, rounded to the second decimal place, subject to sub-paragraph (c) below.

(c) If the rate of exchange inserted by the Tenderer differs from the [redacted] rate referred to above, then the [redacted] rate shall apply and the Rand value in columns (C) and (F) shall be recalculated accordingly, without altering the price in the Schedules of Quantities for the relevant items.

(d) If a tender from a supplier or sub-contractor provides for variations in rates of exchange, the Contractor may **only** claim for variations in rates of exchange if he binds the supplier or sub-contractor to the same provision to take out forward cover as described in sub-paragraph (e) below.

(e) The Contractor (or supplier or sub-contractor) shall within five working days from the date of placing a firm order on an overseas supplier, cover or recover forward by way of a contract with a bank which is an authorised foreign exchange dealer, the foreign exchange component of the cost of any imported Plant and Materials inserted by the Tenderer on the schedule titled "**Price Basis for Imported Resources**".

(f) When the Contractor (or supplier or sub-contractor) so obtains forward cover, the Contractor shall immediately notify the Employer of the rate obtained and furnish the Employer with a copy of the foreign exchange contract note.

(g) Based on the evidence provided in sub-paragraph (f) above, the value in Rand inserted in column (C) on the schedule titled "**Price Basis for Imported Resources"** shall be recalculated using the forward cover rate obtained, and any increase or decrease in the Rand value defined in this clause shall be adjusted accordingly, subject to sub-paragraph (h) below. Failure to provide such evidence shall result in no such recalculation shall be considered by the Employer.

(h) The adjustments shall be calculated upon the value in foreign currency in the Contractor's (or supplier's or sub-contractor's) **forward cover contract**, provided that, should this value exceed the value in foreign currency inserted in column (A) of the schedule titled "**Price Basis for Imported Resources"**, then the value in column (A) shall be used.

6.8.5.2 Adjustment for variations in customs surcharge and customs duty

(a) Any increase or decrease in the Rand value between the amounts of Customs Surcharge and Customs Duty inserted on the schedule titled "**Price Basis for Imported Resources"**and those amounts actually paid to the Customs and Excise Authorities, which are due to changes in the percentage rates applicable or to the foreign exchange rate used by the authorities, shall be adjusted accordingly.

(b) The Tenderer shall state the Customs Duty Tariff Reference applicable to each item and the Contractor shall advise the Employer's Agent of any changes which occur.

6.8.5.3 Adjustment for variation in labour and material Costs

If the prices for imported Plant and Materials are not fixed, the Contractor shall in his Tender specify the formula for calculating Contract Price Adjustments normally used in the country of manufacture and the indices and relative proportions of labour and material on which his Tender prices are based. Evidence of the indices applicable shall be provided with each claim. The indices applicable 42 days before contractual dispatch date from the factory will be used for the purposes of Contract Price Adjustment.

Failure to specify a formula in the Tender shall mean that the prices are fixed or shall be deemed to be fixed.

Clause 6.10.1.5:

Delete Clause 6.10.1.5 in its entirety and replace with the following:

6.10.1.5 The value of Plant and materials:

6.10.1.5.1 up to a percentage limit of **80%** for the Plant and materials referred to in Clause 6.9.1.1 brought on to the Site but not yet built into the Permanent Works;

Provided that the Contractor has produced documentary evidence of ownership of such Plant and/or materials and has delivered to the Employer an indemnity, approved in writing by the Employer, against any claim to or in respect of such Plant and/or materials by reason of the Contractor's sequestration or liquidation, or of any defect in the Contractor's title to the Plant and/or materials;

6.10.1.5.2 which have been manufactured and are stored at places other than the Site, in respect of which the Employer has indicated, on the Advance Payment Schedule, that advance payment will be permitted;

6.10.1.5.3 for which a deposit with order is required from the Contractor by a manufacturer/supplier, only in respect of which the Employer has indicated, on the Advance Payment Schedule, that advance payment will be permitted;

The terms and conditions for advance payment are set out in Clause 6.10.10 and in the Advance Payment Schedule at the end of this Part 1: Contract Data provided by the Employer.

Clause 6.10.1.7:

Add the following after the words "Clause 5.13":

or any other fines or penalties that become due under the Contract.

Clause 6.10.3:

Add the following to Clause 6.10.3:

Notwithstanding the provision of a performance guarantee in terms of Clause 6.2.1, interim payments to the Contractor shall be subject to a retention by the Employer of an amount of **5%** of the said amounts due to the Contractor, with no limit per Works Project. A guarantee in lieu of retention is not permitted.

Clause 6.10.4:

Add the following to the last sentence of Clause 6.10.4:

..., dated as at the date of delivery of the Contractor's statement to the Employer's Agent.

Add the following to Clause 6.10.4:

Notwithstanding the above, the Employer's Agent shall be empowered to withhold the delivery of the payment certificate until the Contractor has complied with his obligations to report in terms of Clause 4.10.2 and as described in the Scope of Work.

The Contractor may submit a fully motivated application regarding more frequent payment to the Employer's Agent to be submitted to the Employer for consideration. Requests for more frequent payments will be considered at the sole discretion of the Employer and is not a right in terms of this contract.

Clause 6.10.10:

Add the following Clause after Clause 6.10.9:

6.10.10 Advance payment

Subject to Clauses 6.10.1.5.2 and 6.10.1.5.3, and the Advance Payment Schedule, the Employer shall make an advance payment for Plant and materials stored at places other than the Site, or in respect of which a deposit with order is required, only once the Contractor has submitted an advance payment guarantee in accordance with this Clause, the authenticity of which has been verified by the City's Treasury Department.

Unless and until the Employer receives this guarantee, the following paragraphs shall not apply.

The Employer's Agent shall issue an Interim Payment Certificate for, or including, advance payment after receiving a statement under Clause 6.10.1 and after the Employer has received a guarantee in an amount equal to the advance payment requested. This guarantee shall be issued by a financial institution approved by the Employer, as listed in the Annexure in Part C1.3 of the Contract Data, and shall be in the form of and shall contain the precise wording of the document included in Part C1.4: **Form of Advance Payment Guarantee** and shall come into force, be administered and expire in terms thereof.

The Employer shall return the guarantee to the Contractor within 14 days after the expiry date.

The provision of the Advanced Payment Guarantee shall be at the Contractor's cost.

The term "deposit" or "deposit with order" used in the context of this Clause and elsewhere by reference to this Clause, means a sum payable by the Contractor to a manufacturer/supplier prior to the manufacture of an item of Plant or material, required at the time of placing an order, the balance of the value of the item being payable later.

Clause 8.6.1:

The insurances to be effected and maintained by the Contractor shall be in the form of a blanket/umbrella policy for this term tender contract. This policy shall be endorsed as and when required to reflect each Works Project that may be allocated to the Contractor.

Clause 8.6.1.1.1:

The Contract Price shall, for insurance purposes, include for individual Works Project Contract Sums ranging from Panel 1: **Above R1 000 000 up to R3 000 000**: 3CE or higher, Panel 2: **Above R3 000 000 up to R6 000 000**: 4CE or higher and Panel 3: **Above R6 000 000 up to R10 000 000:** 5CE or higher and for each Works Project.

Clause 8.6.1.1.2:

The value of Plant and materials supplied by the Employer to be included in the insurance sum is **R 0.00 (Nil)**.

Clause 8.6.1.1.3:

The amount to cover professional fees for repairing damage and loss to be included in the insurance sum is **R0.00 (Nil).**

Clause 8.6.1.3:

The limit of indemnity for liability insurance is R20 000 000.00 for any single claim – the number of claims to be unlimited during the construction and defects liability periods.

Clause 8.6.1.5:

In addition to the insurances required in terms of General Conditions of Contract Clauses 8.6.1.1 to 8.6.1.4 the following insurance is also required:

a) Insurance of Construction Equipment (including tools, offices and other temporary structures and contents) and other things (except those intended for incorporation into the Works) brought onto the site for a sum sufficient to provide for their replacement.

b) Insurance in terms of the provisions of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993.

c) Motor Vehicle Liability Insurance comprising (as a minimum) "Balance of Third Party" Risks including Passenger Liability Indemnity.

d) Where the contract involves manufacturing and/or fabrication of the works or part thereof at premises other than the Site, the Contractor shall satisfy the Employer that all materials and equipment for incorporation in the works are adequately insured during manufacture and/or fabrication. In the event of the Employer having an insurable interest in such works during manufacture or fabrication then such interest shall be noted by endorsement to the Contractor's Policies of Insurance.

Clause 8.6.5:

Delete the following from Clause 8.6.5:

"and the terms thereof shall be subject to the approval of the Employer's Agent, which approval shall not be unreasonably withheld."

Clause 8.6.6:

Replace clause 8.6.6 with the following:

The evidence that the insurances have been effected in terms of Clause 8.6.1, shall be in the form of an insurance broker's warranty worded precisely as given in Part C1.7 Insurance Broker's Warranty.

In addition, an insurance broker's warranty will be required for every Works Project as and when the contractor submits an offer for a Works Project contract. This warranty shall, *inter alia*, confirm that the applicable blanket/umbrella policy for the term tender contract has been endorsed to reflect the Works Project contract and that all premiums have been paid.

Clause 8.6.7:

Add the following to the end of this Clause:

; and/or the Employer shall be entitled to exclude the Contractor from participating in any future Works Project processes until such time as satisfactory evidence has been provided.

Clause 9.1:

In Clause 9.1.6 replace "and 9.1.3" with:

, 9.1.3 and 9.1.7

Add the following Clause after Clause 9.1.6:

9.1.7 Death of Sole Proprietor/Member

Upon the death of the Contractor who was a Sole Proprietor, or a sole member of a Close Corporation, the Contract will terminate forthwith. The Employer shall pay to the Contractor's estate any money which it considers due under the Contract in terms of Clause 9.1.5, in full and final settlement thereof.

9.1.8 Material Irregularity during procurement process

The Employer may terminate the contract if a material irregularity vitiates the procurement process leading to the conclusion of the contract, rendering the procurement process and the conclusion of the resulting contract unfair, inequitable, non-transparent, uncompetitive or not cost-effective, provided the Employer follows the processes as described in its SCM Policy.

9.1.9 Reputational risk or harm to the Employer

The Employer, without prejudice to any other remedy for breach of contract, by written notice of default sent to the supplier, may terminate the contract if the implementation of the contract may result in reputational risk or harm to the City as a result of (inter alia):

9.1.9.1 reports of poor governance and/or unethical behaviour;
9.1.9.2 association with known notorious individuals and family of notorious individuals;
9.1.9.3 poor performance issues, known to the Employer;
9.1.9.4 negative social media reports;
9.1.9.5 adverse assurance (e.g. due diligence) report outcomes;
9.1.9.6 where the contractor has been restricted from doing business with the Employer; or
9.1.9.7 circumstances where the relevant vendor has employed, or is directed by, anyone who was previously employed in the service of the state (as defined in clause 1.53), where the person is or was negatively implicated in any SCM irregularity.

Clause 9.2.1:

Delete "or" at the end of Clause 9.2.1.3.6 and add the following Clause after Clause 9.2.1.3.7:

9.2.1.3.8 Has failed to provide the required insurances within the prescribed time,

Add the following Clause after Clause 9.2.3:

9.2.4 Employer's Elections in case of Insolvency

In addition to anything else contained in this contract, the Employer may make either of the following elections to ensure its rights are protected and any negative impact on service delivery is mitigated:

9.2.4.1 At any time, terminate the Contract by giving written notice to the Supplier; or

9.2.4.2 accept a contractor's proposal (via the trustee / liquidator) to render delivery utilising the appropriate contractual mechanisms or takes steps to ensure its rights are protected and any negative impact on service delivery is mitigated.

Clause 10.5.3:

The number of ad-hoc Adjudication Board Members to be appointed is 1(one).

ADDITIONAL CONDITIONS OF CONTRACT

Add the following Clause after Clause 10:

Clause 11 Details to be confidential

The Contractor shall treat the details of the Works comprised in this Contract as private and confidential (save in so far as may be necessary for the purposes hereof) and shall not publish or disclose the same or any particulars thereof in any trade or technical paper elsewhere without the prior written consent of the Employer's Agent.

Add the following after Clause 11:

12. Protection of personal information

12.1 The Supplier acknowledges that, for the purposes of this agreement, they may come into contact with or have access to personal information and other information that may be classified or deemed as private or confidential and for which Purchaser is responsible in terms of Protection of Personal Information Act ("POPIA"). Such personal information may also be deemed or considered as private and confidential as it relates to POPIA.

12.2 The Supplier agrees that they will at all times comply with POPIA and Purchaser's Privacy Notice, and that it shall only collect, use and process personal information it comes into contact with pursuant to this agreement in a lawful manner, and only to the extent required to execute the services, or to provide the goods and to perform their obligations in terms of the service level agreement.

12.3 The Supplier agrees that it shall put in place, and at all times maintain, appropriate physical, technological and contractual security measures to ensure the protection and confidentiality of the personal information that it, or its employees, its contractors or other authorised individuals comes into contact in relation to the service level agreement.

12.4 The supplier agrees that it shall notify the Purchaser immediately where there are reasonable grounds to believe that the personal information of a data subject has been accessed or acquired by any unauthorised person.

12.5 Unless so required by law, the Supplier agrees that it shall treat the personal information as confidential and further not disclose any personal information as defined in POPIA to any third party without the prior written consent of the Purchaser.

12.6 The Supplier hereby indemnifies and holds the Purchaser harmless against all claims, losses, damages and costs of whatsoever nature suffered by the Purchaser arising from or in relation to the Supplier's (and/or its employees', agents' and sub-contractors') non-compliance with applicable data protection laws and/or other legislation.

12.7 The Supplier agrees that the Purchaser may conduct regular data protection audits on the Supplier and undertakes to give its full co-operation in this regard.

13. Performance Monitoring

13.1 As required by section 116(2)(b) of the Local Government: Municipal Financial Management Act 56 of 2003, the City shall monitor the performance of the Contractor on at least a monthly basis, and the supplier agrees to provide the City with its full cooperation in this regard.

PROCEDURES FOR THE ALLOCATION OF WORKS PROJECTS

The procedures for the allocation of Works Projects, given below, are to be read in conjunction with Part T1.2 Tender Data and Clause 2.6 in the Contract Data. These procedures include the development of Works Project contract documents, applying the tendered rates in order to arrive at financial offers, calculating works project evaluation points, ranking the panel of contractors, and allocating the Works Project to the highest ranked contractor.

The procedures are summarised under the stages below, wherein the Employer (acting through his agent) shall

Stage 1: Employer prepares Works Project contract document, prices bills of quantities using each contractor's rates and prepares a works project evaluation ranking for all contractors

a) select a Work Area for the execution of the Works Project;
b) prepare a Works Project contract document, including Bills of Quantities and Scope Work therein;
c) compile priced bills of quantities for all contractors appointed, using their respective framework contract rates.

Stage 2: Contractors collect copy of Works Project contract document and works project evaluation ranking, attend compulsory Works Project meeting and submit acceptance/refusal notices

e) make available to the contractors a copy of the Works Project contract document with the Bills of Quantities priced by the Employer;
f) simultaneously, invite the contractors to attend a compulsory Works Project meeting;
g) conduct the Works Project meeting, including discussing any issues the contractors may have (this may result in changes being made to the Works Project contract document and its being re-issued; and
h) receive acceptance/refusal notices from contractors timeously after the meeting;

Stage 3: Contractors submit completed Works Project contract document and Employer allocates Works Project

i) request the contractors, who attended the Works Project meeting and accepted the work opportunity, to complete the Returnable Schedules, Form of Offer, Works Project Acceptance/Refusal Notice, etc. in the Works Project contract document and submit the completed document to the Employer; and
j) test submissions for completeness and allocate the Works Project to the highest scoring responsive contractor.

Further details of the procedures under the above stages are given below.

Stage 1

As and when the Employer requires work to be executed in a Works Project under the framework contract, the Employer shall specify, *inter alia*, the nature, location(s), extent, scope of work, proposed programme and contract period for the work required, in a **Works Project contract document** comprising, as relevant, Work Allocation Procedures, Returnable Schedules, Agreements and Contract Data, Bills of Quantities and Scope of Work.

In the Bills of Quantities the Employer shall assign quantities to the work items relating to the specific Scope of Work in the Works Project. The assigned quantities shall be multiplied by the framework contract rates to constitute amounts that will be totalled to provide a **financial offer** for each contractor for this specific Works Project.

Stage 2

The Employer shall invite the contractors to attend a compulsory **Works Project meeting** at a time and venue disclosed in writing by the Employer.

The Employer shall issue the invitation **at least 2** days prior to the meeting date, and simultaneously make available to the contractors their individually priced Works Project contract documents.

The Employer shall conduct the compulsory Works Project meeting on the date specified. The purpose of this meeting is to inform the contractors of the Scope of Work required in the Works Project. The meeting shall furthermore serve to answer any queries the contractors may have in respect of the required work, billed items and quantities, etc. (this may result in changes being made to the Works Project contract document and its being re-issued). A contractor who fails to attend the compulsory Works Project meeting will be **excluded** from further participation in the Works Project allocation process.

Included in the Works Project contract document is a Works Project **Acceptance/Refusal Notice** (Form C1.9) requesting the contractor to state in writing whether he accepts/refuses the opportunity afforded to participate further in the work allocation procedure (i.e. that he is willing/not willing to undertake the work specified in the Scope of Work and Bills of Quantities and has/has not the necessary resources, available to complete the work within the required Works Project contract period should he be allocated the work).

Contractors will be required to complete and return the Works Project Acceptance/Refusal Notice, by email, to the Employer prior to the closing date for receipt of Works Project Acceptance/Refusal Notices (non-submission will be regarded as a refusal), including, for those who accept, declaring whether their declarations in respect of sub-contractors made in the Preferencing Schedule in the Framework Contract document stand for the Works Project, or not - refer to Form C1.9 in this regard. The Employer will finalise the ranking of the contractors who accept, after taking their declarations into account.

Stage 3

Upon request of the Employer, the Works Project contract document shall be completed, signed and returned by the contractors who has accepted to the Employer's agent's offices no later than the date stated in such request.

The Employer will specify the proposed Works Project construction time period (time from the date specified for commencement with Works execution to Due Completion Date) for completing the specified Works in the Scope of Work in the Works Project contract document.

The submission of a fully completed and signed Works Project contract document is mandatory for the contractors who has been requested by the Employer to submit offers, and the contractors may be requested by the Employer to complete and/or sign their submission, if necessary, should they have not already done so.

A contractor whose offer is non-responsive, or who failed to return the completed, signed Works Project contract document (the offer) by the date stated in the Employer's request, will be **excluded** from further participation in the Works Project allocation process.

Acceptance of the successful contractor's offer takes place on the date the contractor (now Contractor in terms of the Contract) receives the City of Cape Town's official **purchase order**, such date being the Commencement Date of the Works Project contract.

Each Works Project shall be in the **value range** of above R1 000 000 up to R10 000 000 across three panels (including contingencies and VAT, but excluding contract price adjustment, if applicable).

Working days for these procedures are Mondays to Fridays.

SPECIAL MATERIALS SCHEDULE

Each material dealt with as a special material in terms of Clause 4.1 of the Contract Price Adjustment Schedule of the General Conditions of Contract is stated in the list below. The provisions of Clause 6.8.3 of the General Conditions of Contract shall apply to such special materials. The base prices for the special materials (current at the time of tender) shall be as stated in the schedule below, or where required, shall be furnished by the tenderer/contractor. Only those materials listed by the Employer below shall be considered as special materials.

Special Material	Unit	Base Price
Bitumen (50/70 penetration grade)	t	R16 000.00 (January 2025, Rubis)
Bitumen (70/100 penetration grade)	t	R16 000.00 (January 2025, Rubis)

Conditions:

1) When called upon to do so, the contractor shall substantiate the prices to be used to determine the adjustment in respect of the special materials listed above with acceptable documentary evidence.
2) In the case of bituminous products, the Employer has provided, in the schedule above, a base rate for bitumen upon which the tendered rates will be deemed to be based, and which will be used for determining the adjustment in the price of such bituminous products.
3) Where an adjustment for the variation in the price of bituminous products is claimed, the claim must be substantiated by a declaration from the manufacturer, confirming the source of bitumen used in such bituminous products at the time in question.
4) Where the source of bitumen (the refinery) is located in the Western Cape Province, or where bitumen sourced from abroad is landed at a port in the Western Cape, the cost of transporting such bitumen within the boundaries of the Western Cape shall be included in the rate for bituminous products. Extra-over rates to cover the cost of transporting bitumen from beyond the borders of the Western Cape have been measured separately in the Bill of Quantities.
5) Where imported bitumen used in bituminous products is landed at a port beyond the borders of the Western Cape, the importers must clearly state whether or not their price is inclusive of transport to the Western Cape, which will determine whether extra-over transport costs are applicable, or not. The price of the imported bitumen itself must be expressed as a landed price in ZAR.

ADVANCE PAYMENT SCHEDULE (Not applicable)

This Advance Payment Schedule is to be read in conjunction with Clauses 6.10.1.5.2, 6.10.1.5.3 and 6.10.10 in the Contract Specific Data. The purpose of this schedule is to itemise specific Plant and materials not yet brought on to the Site for building into the Permanent Works and for which the Employer is prepared to make advance payments to the Contractor, subject to the conditions below.

The items of Plant and materials which have been identified by the Employer as being suitable for advance payment in terms of the Contract are listed in the table below. Should an item or items be added to the list at tender stage by a tenderer, such item(s) will not be binding on the Employer.

Plant and materials which have been manufactured and are stored at places other than the Site:	**Plant and materials yet to be manufactured and for which a deposit with order is required from the Contractor by a manufacturer/supplier, and which may be stored at places other than the Site after manufacture:**

Conditions:

1) The Contractor can only rely on advance payment being permitted by the Employer in respect of the Plant and materials listed in the table above. The Employer may, however, permit advance payment for other Plant and materials in exceptional circumstances and at its sole discretion, during the course of the Contract, and upon reasonable request from the Contractor.
2) Advance payment for the purposes of deposits will only be provided up to a limit of 20% of the value of any one item being claimed.
3) The Contractor shall provide the Employer with documentary evidence of the terms and conditions for which a deposit with order is required by a manufacturer/supplier, together with the advance payment guarantee.
4) The Contractor will also be permitted to obtain advance payment for the balance of the value of the Plant and materials in respect of which he has paid a deposit, for an item which after manufacture is stored at a place other than the Site. The Contractor shall, in respect of such payment, provide an advance payment guarantee, either for such balance or, if the advance payment guarantee in respect of the deposit is to be returned by the Employer upon request, for the whole value of the item.

C1.2 Contract Data

Data provided by the Contractor

The name of the Contractor is [redacted]

The address of the Contractor is

Physical : Address [redacted]

Postal : Address [redacted]

Telephone : [redacted] Fax: [redacted]

email : [redacted]

CONTRACTOR'S ANNUAL HOLIDAY PERIODS DURING CONSTRUCTION PERIOD

Year 1 contractor's annual holiday period	Start date 15. 12. 2025		End date 12. 01. 2026
Year 2 contractor's annual holiday period	Start date 15. 12. 2026		End date 11. 01. 2027
Year 3 contractor's annual holiday period	Start date 15. 12. 2027		End date 10. 01. 2028
Year 4 contractor's annual holiday period	Start date 15. 12. 2028		End date 08. 01. 2029
Year 5 contractor's annual holiday period	Start date 14. 12. 2029		End date 07. 01. 2030

ESTIMATED DATES ONLY.

[redacted]

[redacted]

CITY OF CAPE TOWN

WATER AND SANITATION: DISTRIBUTION SERVICES

CONTRACT NO. 150Q/2024/25

TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

C1.3 Form of Performance Guarantee (Panel 1)

PERFORMANCE GUARANTEE

For use with the Conditions of Contract as described in C1.2 Contract Data Part 1: Contract Data provided by the Employer.

GUARANTOR DETAILS AND DEFINITIONS

"Guarantor" means: .....

"Physical address: .....

"Employer" means: The City of Cape Town, DIRECTORATE: WATER AND SANITATION: DISTRIBUTION SERVICES.

"Contractor" means: The Contractor named in an individual Works Project Contract. .....

"Employer's Agent" means: The Employer's Agent named in an individual Works Project Contract.

"Works" means: Works Projects which may be allocated, individually or as a whole as the context provides, under Framework Contract No. 150Q/2024/25: Term Tender for Laying of New Water Mains, Fire Hydrants and Valves. .

"Site" means: The site as defined in the Contract Data.

"Contract" means: The Agreement made in terms of the Form of Offer and Acceptance and such amendments or additions to the Contract as may be agreed in writing between the parties, and includes the Works Project Agreement.

"Guaranteed Sum" means: The maximum aggregate amount of R450 000.00.

Amount in words: Four hundred and fifty thousand Rand.

"Expiry Date" means: The date of issue by the Employer's Agent of the last Certificate of Completion of the Works for the Works Projects.

CONTRACT DETAILS

Employer's Agent issues: Interim Payment Certificates, Final Payment Certificates and the Certificates of Completion of the Works, in respect of individual Works Projects, as defined in the Contract.

PERFORMANCE GUARANTEE

1. The Guarantor's liability shall be limited to the amount of the Guaranteed Sum.

2. The Guarantor's period of liability shall be from and including the date of issue of this Performance Guarantee and up to and including the Expiry Date or the date of payment in full of the Guaranteed Sum, whichever occurs first. The Employer's Agent and/or the Employer shall advise the Guarantor in writing of the date on which the last Certificate of Completion of the Works for the Works Projects has been issued.

3. The Guarantor hereby acknowledges that:

3.1 any reference in this Performance Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship;

3.2 its obligation under this Performance Guarantee is restricted to the payment of money.

4. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 4.1 to 4.3:

4.1 A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum certified by the Employer's Agent in an Interim or Final Payment Certificate has not been made in terms of the Contract and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 4.2;

4.2 A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) days has elapsed since the first written demand in terms of 4.1 and the sum certified has still not been paid;

4.3 A copy of the aforesaid payment certificate which entitles the Employer to receive payment in terms of the Contract of the sum certified in 4.

5. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor undertakes to pay to the Employer the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the Employer to the Guarantor at the Guarantor's physical address calling up this Performance Guarantee, such demand stating that:

5.1 the Contract has been terminated due to the Contractor's default and that this Performance Guarantee is called up in terms of 5; or

5.2 a provisional or final sequestration or liquidation court order has been granted against the Contractor and that the Performance Guarantee is called up in terms of 5; and

5.3 the aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional/final sequestration and/or the provisional liquidation court order.

6. It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4 and 5 shall not exceed the Guarantor's maximum liability in terms of 1.

7. Where the Guarantor has made payment in terms of 5, the Employer shall upon the date of issue of the Final Payment Certificate submit an expense account to the Guarantor showing how all monies received in terms of this Performance Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Performance Guarantee shall bear interest at the prime overdraft rate of the Employer's bank compounded monthly and calculated from the date payment was made by the Guarantor to the Employer until the date of refund.

8. Payment by the Guarantor in terms of 4 or 5 shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor.

9. The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer may deem fit and the Guarantor shall not have the right to claim his release from this Performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.

10. The Guarantor chooses the physical address as stated above for the service of all notices for all purposes in connection herewith.

11. This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 2, where after no claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired.

12. This Performance Guarantee, with the required demand notices in terms of 4 or 5, shall be regarded as a liquid document for the purposes of obtaining a court order.

13. Where this Performance Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Courts Act No 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

Signed at .....

Date .....

Guarantor's signatory (1) .....

Capacity .....

Guarantor's signatory (2) .....

Capacity .....

Witness signatory (1) .....

Witness signatory (2) .....

CITY OF CAPE TOWN

WATER AND SANITATION: DISTRIBUTION SERVICES

CONTRACT NO. 150Q/2024/25

TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

C1.3 Form of Performance Guarantee (Panel 2)

PERFORMANCE GUARANTEE

For use with the Conditions of Contract as described in C1.2 Contract Data Part 1: Contract Data provided by the Employer.

GUARANTOR DETAILS AND DEFINITIONS

"Guarantor" means: .....

"Physical address: .....

"Employer" means: The City of Cape Town, DIRECTORATE: WATER AND SANITATION: DISTRIBUTION SERVICES.

"Contractor" means: The Contractor named in an individual Works Project Contract. .....

"Employer's Agent" means: The Employer's Agent named in an individual Works Project Contract.

"Works" means: Works Projects which may be allocated, individually or as a whole as the context provides, under Framework Contract No. 150Q/2024/25: Term Tender for Laying of New Water Mains, Fire Hydrants and Valves. .

"Site" means: The site as defined in the Contract Data.

"Contract" means: The Agreement made in terms of the Form of Offer and Acceptance and such amendments or additions to the Contract as may be agreed in writing between the parties, and includes the Works Project Agreement.

"Guaranteed Sum" means: The maximum aggregate amount of R1 260 000.00.

Amount in words: One Million two hundred and sixty thousand Rand.

"Expiry Date" means: The date of issue by the Employer's Agent of the last Certificate of Completion of the Works for the Works Projects.

CONTRACT DETAILS

Employer's Agent issues: Interim Payment Certificates, Final Payment Certificates and the Certificates of Completion of the Works, in respect of individual Works Projects, as defined in the Contract.

PERFORMANCE GUARANTEE

1. The Guarantor's liability shall be limited to the amount of the Guaranteed Sum.

2. The Guarantor's period of liability shall be from and including the date of issue of this Performance Guarantee and up to and including the Expiry Date or the date of payment in full of the Guaranteed Sum, whichever occurs first. The Employer's Agent and/or the Employer shall advise the Guarantor in writing of the date on which the last Certificate of Completion of the Works for the Works Projects has been issued.

3. The Guarantor hereby acknowledges that:

3.1 any reference in this Performance Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship;

3.2 its obligation under this Performance Guarantee is restricted to the payment of money.

4. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 4.1 to 4.3:

4.1 A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum certified by the Employer's Agent in an Interim or Final Payment Certificate has not been made in terms of the Contract and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 4.2;

4.2 A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) days has elapsed since the first written demand in terms of 4.1 and the sum certified has still not been paid;

4.3 A copy of the aforesaid payment certificate which entitles the Employer to receive payment in terms of the Contract of the sum certified in 4.

5. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor undertakes to pay to the Employer the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the Employer to the Guarantor at the Guarantor's physical address calling up this Performance Guarantee, such demand stating that:

5.1 the Contract has been terminated due to the Contractor's default and that this Performance Guarantee is called up in terms of 5; or

5.2 a provisional or final sequestration or liquidation court order has been granted against the Contractor and that the Performance Guarantee is called up in terms of 5; and

5.3 the aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional/final sequestration and/or the provisional liquidation court order.

6. It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4 and 5 shall not exceed the Guarantor's maximum liability in terms of 1.

7. Where the Guarantor has made payment in terms of 5, the Employer shall upon the date of issue of the Final Payment Certificate submit an expense account to the Guarantor showing how all monies received in terms of this Performance Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Performance Guarantee shall bear interest at the prime overdraft rate of the Employer's bank compounded monthly and calculated from the date payment was made by the Guarantor to the Employer until the date of refund.

8. Payment by the Guarantor in terms of 4 or 5 shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor.

9. The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer may deem fit and the Guarantor shall not have the right to claim his release from this Performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.

10. The Guarantor chooses the physical address as stated above for the service of all notices for all purposes in connection herewith.

11. This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 2, where after no claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired.

12. This Performance Guarantee, with the required demand notices in terms of 4 or 5, shall be regarded as a liquid document for the purposes of obtaining a court order.

13. Where this Performance Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Courts Act No 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

Signed at .....

Date .....

Guarantor's signatory (1) .....

Capacity .....

Guarantor's signatory (2) .....

Capacity .....

Witness signatory (1) .....

Witness signatory (2) .....

CITY OF CAPE TOWN

WATER AND SANITATION: DISTRIBUTION SERVICES

CONTRACT NO. 150Q/2024/25

TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

C1.3 Form of Performance Guarantee (Panel 3)

PERFORMANCE GUARANTEE

For use with the Conditions of Contract as described in C1.2 Contract Data Part 1: Contract Data provided by the Employer.

GUARANTOR DETAILS AND DEFINITIONS

"Guarantor" means: .....

"Physical address: .....

"Employer" means: The City of Cape Town, DIRECTORATE: WATER AND SANITATION: DISTRIBUTION SERVICES.

"Contractor" means: The Contractor named in an individual Works Project Contract. .....

"Employer's Agent" means: The Employer's Agent named in an individual Works Project Contract.

"Works" means: Works Projects which may be allocated, individually or as a whole as the context provides, under Framework Contract No. 150Q/2024/25: Term Tender for Laying of New Water Mains, Fire Hydrants and Valves. .

"Site" means: The site as defined in the Contract Data.

"Contract" means: The Agreement made in terms of the Form of Offer and Acceptance and such amendments or additions to the Contract as may be agreed in writing between the parties, and includes the Works Project Agreement.

"Guaranteed Sum" means: The maximum aggregate amount of R2 100 000.00.

Amount in words: Two Million and one hundred thousand Rand.

"Expiry Date" means: The date of issue by the Employer's Agent of the last Certificate of Completion of the Works for the Works Projects.

CONTRACT DETAILS

Employer's Agent issues: Interim Payment Certificates, Final Payment Certificates and the Certificates of Completion of the Works, in respect of individual Works Projects, as defined in the Contract.

PERFORMANCE GUARANTEE

1. The Guarantor's liability shall be limited to the amount of the Guaranteed Sum.

2. The Guarantor's period of liability shall be from and including the date of issue of this Performance Guarantee and up to and including the Expiry Date or the date of payment in full of the Guaranteed Sum, whichever occurs first. The Employer's Agent and/or the Employer shall advise the Guarantor in writing of the date on which the last Certificate of Completion of the Works for the Works Projects has been issued.

3. The Guarantor hereby acknowledges that:

3.1 any reference in this Performance Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship;

3.2 its obligation under this Performance Guarantee is restricted to the payment of money.

4. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 4.1 to 4.3:

4.1 A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum certified by the Employer's Agent in an Interim or Final Payment Certificate has not been made in terms of the Contract and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 4.2;

4.2 A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) days has elapsed since the first written demand in terms of 4.1 and the sum certified has still not been paid;

4.3 A copy of the aforesaid payment certificate which entitles the Employer to receive payment in terms of the Contract of the sum certified in 4.

5. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor undertakes to pay to the Employer the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the Employer to the Guarantor at the Guarantor's physical address calling up this Performance Guarantee, such demand stating that:

5.1 the Contract has been terminated due to the Contractor's default and that this Performance Guarantee is called up in terms of 5; or

5.2 a provisional or final sequestration or liquidation court order has been granted against the Contractor and that the Performance Guarantee is called up in terms of 5; and

5.3 the aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional/final sequestration and/or the provisional liquidation court order.

6. It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4 and 5 shall not exceed the Guarantor's maximum liability in terms of 1.

7. Where the Guarantor has made payment in terms of 5, the Employer shall upon the date of issue of the Final Payment Certificate submit an expense account to the Guarantor showing how all monies received in terms of this Performance Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Performance Guarantee shall bear interest at the prime overdraft rate of the Employer's bank compounded monthly and calculated from the date payment was made by the Guarantor to the Employer until the date of refund.

8. Payment by the Guarantor in terms of 4 or 5 shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor.

9. The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer may deem fit and the Guarantor shall not have the right to claim his release from this Performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.

10. The Guarantor chooses the physical address as stated above for the service of all notices for all purposes in connection herewith.

11. This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 2, where after no claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired.

12. This Performance Guarantee, with the required demand notices in terms of 4 or 5, shall be regarded as a liquid document for the purposes of obtaining a court order.

13. Where this Performance Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Courts Act No 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

Signed at .....

Date .....

Guarantor's signatory (1) .....

Capacity .....

Guarantor's signatory (2) .....

Capacity .....

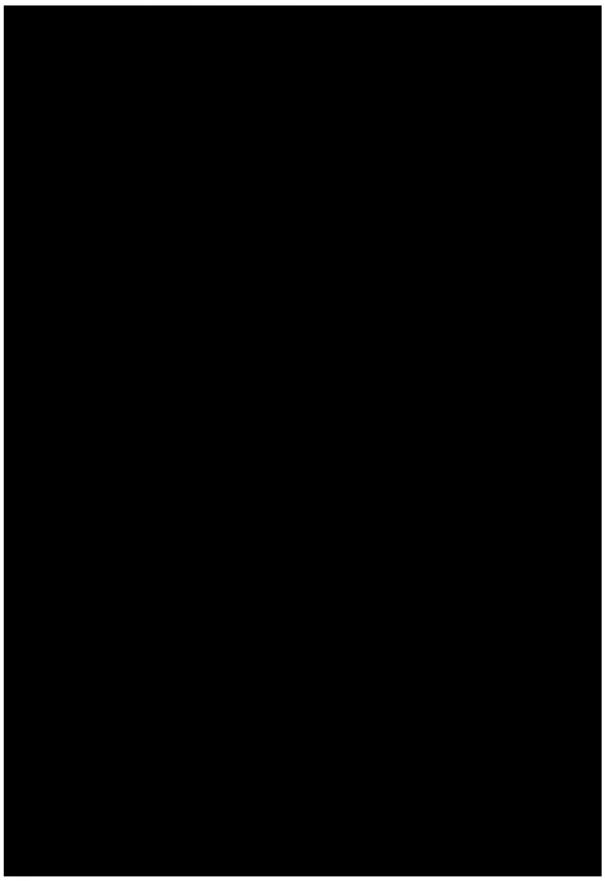
Witness signatory (1) .....

Witness signatory (2) .....

ANNEXURE

LIST OF APPROVED FINANCIAL INSTITUTIONS

The following financial institutions are currently (as at 28 February 2023) approved for issue of contract guarantees to the City:



C1.4 Form of Advance Payment Guarantee (Not Applicable)

C1.5 Occupational Health and Safety Agreement

AGREEMENT MADE AND ENTERED INTO BETWEEN THE CITY OF CAPE TOWN (HEREINAFTER CALLED THE "EMPLOYER") AND

……,
(Contractor/Mandatary/Company/CC Name)

IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, 85 OF 1993 AS AMENDED.

I, ……, representing

……, as an employer
in its own right, do hereby undertake to ensure, as far as is reasonably practicable, that all work will be performed, and all equipment, machinery or plant used in such a manner as to comply with the provisions of the Occupational Health and Safety Act (OHSA) and the Regulations promulgated thereunder.

I furthermore confirm that I am/we are registered with the Compensation Commissioner and that all registration and assessment monies due to the Compensation Commissioner have been fully paid or that I/We are insured with an approved licensed compensation insurer.

COID ACT Registration Number: ……

OR Compensation Insurer: ……. Policy No.: ……

I undertake to appoint, where required, suitable competent persons, in writing, in terms of the requirements of OHSA and the Regulations and to charge him/them with the duty of ensuring that the provisions of OHSA and Regulations as well as the Council's Special Conditions of Contract, Way Leave, Lock-Out and Work Permit Procedures are adhered to as far as reasonably practicable.

I further undertake to ensure that any subcontractors employed by me will enter into an occupational health and safety agreement separately, and that such subcontractors comply with the conditions set.

I hereby declare that I have read and understand the Occupational Health and Safety Specifications contained in this tender and undertake to comply therewith at all times.

I hereby also undertake to comply with the Occupational Health and Safety Specification and Plan submitted and approved in terms thereof.

Signed at ……on the……day of……20….

_____ _____
Witness **Mandatary**

Signed at …… on the……day of……20 ….

_____ _____
Witness for and on behalf of
City of Cape Town

C1.6 Protection of the Environment Declaration

PROTECTION OF THE ENVIRONMENT DECLARATION

The Contractor will not be given right of access to the Site until this form has been signed

CONTRACT NO.: 150Q/2024/25

CONTRACT TITLE: TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

I/ we,.....{Contractor} record as follows:

1. I/ we, the undersigned, do hereby declare that I/ we am/ are aware of the increasing requirement by society that construction activities shall be carried out with due regard to their impact on the environment.

2. In view of this requirement of society and a corresponding requirement by the Employer with regard to this Contract, I/ we will, in addition to complying with the letter of the terms of the Contract dealing with protection of the environment, also take into consideration the spirit of such requirements and will, in selecting appropriate employees, plant, materials and methods of construction, in-so-far as I/ we have the choice, include in the analysis not only the technical and economic (both financial and with regard to time) aspects but also the impact on the environment of the options. In this regard, I/ we recognise and accept the need to abide by the "precautionary principle" which aims to ensure the protection of the environment by the adoption of the most environmentally sensitive construction approach in the face of uncertainty with regard to the environmental implications of construction.

3. I/ we declare that I/ we have read and understood the contents of the Environmental Management Programme (which is comprised of the Environmental Management Specification and its Annexures) for this Contract, and that I/ we understand my/our responsibilities in terms of enforcing and implementing the Environmental Management Programme. I/ we also declare that I/ we have made appropriate provision in my/ our pricing of the Schedules of Rates items for the Environmental Management Programme.

4. I/ we acknowledge and accept the right of the Employer to deduct, should he so wish, from any amounts due to me/ us, such amounts (hereinafter referred to as fines) as the Employer's Agent shall certify as being warranted in view of my/ our failure to comply with the terms of the Contract dealing with protection of the environment, subject to the following:

4.1 The Employer's Agent, in determining the amount of such fine, shall take into account, *inter alia*, the nature of the offence, the seriousness of its impact on the environment, the degree of prior compliance/non-compliance, the extent of the Contractor's overall compliance with environmental protection requirements and, in particular, the extent to which he considers it necessary to impose a sanction in order to eliminate/reduce future occurrences

4.2 The Employer's Agent shall, with respect to any fine imposed, provide me/ us with a written statement giving details of the offence, the facts on which the Employer's Agent has based his assessment and the terms of the Contract (by reference to the specific clause) which has been contravened.

Signed ..... Date.....
CONTRACTOR

C1.7 Insurance Broker's Warranty

Pro Forma

Letterhead of Contractor's Insurance Broker

Date _____

CITY OF CAPE TOWN
City Manager
Civic Centre
12 Hertzog Boulevard
Cape Town
8001

Dear Sir

CONTRACT NO.: 150Q/2024/25

CONTRACT TITLE: TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

NAME OF CONTRACTOR: _____

I, the undersigned, do hereby confirm and warrant that all the insurances required in terms of the abovementioned term tender contract have been issued and, in the case of blanket/umbrella policies, will be endorsed to reflect the interests of the CITY OF CAPE TOWN with regard to each Works Project contract, and that all the insurances and endorsements, etc., are all in accordance with the requirements of the contract.

I furthermore confirm that all premiums in the above regard have been paid.

Yours faithfully

Signed: _____

For: _____

C1.8 Contract of Temporary Employment as Community Liaison Officer

Construction Contract No.: .....

PROJECT.....

AGREEMENT made between the CONTRACTOR .....
and the Community Liaison Officer....., hereafter referred to as the CLO, for the appointment and employment of a CLO for the duration of the work in respect of the above named construction contract.

1. **THE PARTIES HAVE AGREED THAT**

The CLO will be employed by the CONTRACTOR on a temporary basis for the duration of the work from the date of signing this agreement to the date of practical completion as defined in the Contract, subject to all the conditions set out below.

2. **THE DUTIES OF THE COMMUNITY LIAISON OFFICER SHALL BE:**

1. to keep the community informed on the progress of the project;
2. to keep the Contractor informed on relevant Community affairs and possible grievances;
3. to manage the recruitment of workers from the Sub-Council Job-Seekers Database;
4. to assist the Contractor's supervisory staff in the management of the workers.

3. **THE FOLLOWING CONDITIONS OF EMPLOYMENT SHALL APPLY:**

The Conditions of Temporary Employment as applicable on this Contract for the workers recruited from the Community shall apply equally to the CLO, except that the rate of remuneration shall be **R.....** per working day. These conditions that apply are listed below as they appear in the Contract of Temporary Employment:

3.1 If required to work on a statutory public holiday or Sunday the payment will be double the amount stated in the previous paragraph.

3.2 Maximum hours of work:

(i) 9¼ hours per day
(ii) 45 hours per week;
(iii) 5 days per week;
(iv) 5 hours without an interval, whereupon there shall be an interval of at least 30 minutes;
(v) A spread-over period of 12 hours.

3.3 The CLO shall be entitled to payment where he is prevented from working by reasons which are within the control of the Contractor.

3.4 On days when it is raining the Contractor may, before 9 a.m., decide not to open the site and there will be no pay.

If the Contractor closes the site between 9 a.m. and 1 p.m., the CLO will be paid half the daily wage.

If the site works later than 1 p.m., the CLO will be paid the full daily wage.

3.5 Workers and the CLO will not be permitted to work under conditions of:

(i) undisciplined or unruly behaviour;
(ii) insubordination to Team Leader, Supervisors or Management;
(iii) abuse of intoxicating substances;
(iv) criminal actions by the employee;
(v) strike action or political stayaways.

3.6 Workers, including the CLO, may be dismissed after two official written warnings for the following behaviour:

(i) undisciplined or unruly behaviour;
(ii) insubordination to Team Leader, Supervisors or Management;
(iii) abuse of intoxicating substances;
(iv) wilful or negligent damage to or loss of machines or equipment.

The Contractor shall ensure that he has statements from at least two witnesses concerning any of the above situations.

The Contractor shall inform the CLO within 24 hours of any warning issued to workers employed from the Job-Seekers Database.

3.7 The CLO will be paid on a Friday afternoon every two weeks, one week in arrears.

3.8 The CLO shall be given a statement with each payment on which is recorded:

(i) the name of the Contractor;
(ii) the CLO's name;
(iii) the number of days worked by the CLO;
(iv) the rate per day;
(v) the details of any deductions made;
(vi) the actual amount paid to the CLO.

3.9 No deduction shall be made from the remuneration except where the CLO consents in writing or unless the Contractor is permitted or required to do so by law or the order of any competent court.

3.10 The CLO shall be supplied free of charge with all health and safety equipment required by the Occupation Health and Safety Act. The equipment shall remain the property of the Contractor.

3.11 The Contractor must give the CLO at least one week's notice of the termination of the Contract of Temporary Employment. If this is not done, the CLO must be paid earnings for five days. This condition does not apply if the CLO is dismissed.

3.12 At the end of the period of temporary employment, the Contractor shall provide a Certificate of Service recording the Contractor's name, the CLO's name and address, the period of service, the type of work on which the CLO was engaged and the rate of remuneration on termination.

4. TERMINATION OF AGREEMENT

4.1 If the CLO can no longer perform and execute his/her duties as detailed in this agreement, this agreement will be terminated without prejudice to any rights under this agreement.

5. THE CONDITIONS OF THIS AGREEMENT

5.1 The parties expressly declare that this agreement contains all the conditions negotiated between them, and no condition or stipulation not contained herein shall be binding upon the parties.

6. **THUS AGREED AND SIGNED BY THE PARTIES:**

Contractor: .....

Community Liaison officer: .....

Date: .....

CITY OF CAPE TOWN

WATER AND SANITATION: DISTRIBUTION SERVICES

CONTRACT NO. 150Q/2024/25

TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

C1.9 Works Project Acceptance/Refusal Notice

This form must be returned to the offices of the Employer's agent by no later than the closing date and time for receipt of Works Project Acceptance/Refusal Notices stated in the Works Project contract document.

I/We herewith

Accept ☐ } ▭

Refuse ☐

the opportunity afforded to me/us by the City of Cape Town to participate in the work allocation process as set out in the Work Allocation Procedures for the work specified in the Works Project contract document.

I/We accept that no contractor will be allocated work unless the contractor has demonstrated to the satisfaction of the Employer that he has the resources, including a site specific construction manager, required for this Works Project.

I/We agree to the construction time period specified in the Scope of Work.

Declaration (to be completed by a contractor who accepts):

With reference to condition 8 in Section 2 in Schedule 19 Preferencing Schedule in Part 2.2 Returnable Schedules in the framework contract document, I/we declare that I/we **DO** ☐ / **DO NOT** ☐ (tick one box as applicable) intend sub-contracting more than 25% of the value of the Works Project contract to sub-contractors that do not qualify for at least the points that I/we as prime contractor qualified for in my/our framework contract.

CONTRACTOR'S NAME: .....

AUTHORISED CONTACT PERSON (NAME): .....

SIGNATURE: .....

DATE:.....

SPECIMEN

Part C2: Pricing Data

		Pages
C2.1	Pricing Assumptions	81 – 82
C2.2	Schedules of Rates	83 – 200

C2.1 Pricing Assumptions

Pricing Assumptions mean the criteria as set out below, read together with all Parts of this framework contract document, which it will be assumed in the contract, that the tenderer has taken into account when developing his prices (rates).

These Pricing Assumptions are applicable to the Schedules of Rates in this document. Pricing Assumptions applicable to the Bills of Quantities in Works Project contract documents are provided in such documents.

1. The method of measurement published by the South African Bureau of Standards in clause 8 of the Standardised Specifications for Civil Engineering Construction is applicable, subject to the variations and amendments in the respective "Measurement and Payment" clauses in the particular specifications contained in Part C3.4 Construction in the Scope of Work.

2. The measurement and payment clauses in a specification in which further information regarding the scheduled items is given, are referenced under "payment reference" in the Schedules of Rates. The referenced clauses are not necessarily the only sources of information in respect of scheduled items. Further information and specifications may be found elsewhere in the Contract Documents. Standardised Specifications are identified by the letter or letters which follow SANS in the SANS 1200 series of specifications, eg. G for SANS 1200 G.

4. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance is made for waste.

5. No quantities are set out in the Schedules of Rates and the Contractor will be required to undertake whatever quantities may be directed by the Employer's Agent from time to time in the relevant Works Project. The final Contract Price for each completed Works Project shall be computed from the actual quantities of work done, valued at the relevant rates (refer to Clause 10 in these Pricing Assumptions in this regard).

6. Rates inserted in the Schedules of Rates are deemed to be based on Acts, Ordinances, Regulations, By-laws, International Standards and National Standards that were published 28 days before the closing date for tenders. (Refer to www.stanza.org.za or www.iso.org for information on standards).

7. The rates (excluding VAT) inserted in the Schedules of Rates shall be the full inclusive rates for the work described under the several items. Such rates shall cover all costs and expenses that may be required in and for the execution of the work described, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the documents on which the tender is based, as well as overhead charges and profit. Reasonable rates shall be inserted as these will be used as a basis for assessment of payment for additional work that may have to be carried out.

   Where the Scope of Work requires detailed drawings and designs or other information to be provided, all costs associated therewith shall be provided for and included in the rates tendered for such items.

8. A rate is to be entered against each item in the Schedules of Rates. **An item against which no rate (or rates, in the case of rate categories if provided) is/are entered, or if anything other than a rate or a nil rate (for example, a zero, a dash or the word "included" or abbreviations thereof) is entered against an item, it will also be regarded as a nil rate having been entered against that item, i.e. that there is no charge for that item.** The Tenderer may be requested to clarify nil rates, or items regarded as having nil rates; and the Employer may also perform a risk analysis with regard to the reasonableness of such rates.

9. The units of measurement described in the Schedules of Rates are metric units. Abbreviations which may be used in these Schedules of Rates are as follows:

m	=	Metre	h	=	hour
km	=	Kilometre	kg	=	kilogram
m2	=	square metre	t	=	ton (1000 kg)

ha	=	Hectare	No.	=	number
m3	=	cubic metre	sum	=	lump sum
m3.km	=	cubic metre-kilometre	Prov sum	=	Provisional sum
l	=	Litre	%	=	per cent
kl	=	Kilolitre	day	=	Calender day

10. Tenderers shall provide rates for the execution of items as specified in the Schedules of Rates. Unless otherwise described in the items in the Schedules of Rates, all rates (sums in particular) apply to individual Works Project contracts. Framework Contract pay items shall be initial one-off payments in the Framework Contract.

    The rates provided in the Schedules of Rates shall be used in representative Works Projects for tender evaluation purposes in accordance with clause C.3.11.1 in Part T1.2 Tender Data, as well as in the allocation of individual Works Projects in accordance with Clause 2.6 in Part C1.2 Contract Data and the Procedures for the allocation of Works Projects referred to therein.

11. Tenderers shall provide rates (excluding VAT) for each required rate category (if provided) for each item specified in every schedule in the Schedules of Rates (refer to clause C.2.10.5 in Part T1.2 Tender Data). Provisional Sums will be multiplied by a factor (quantity) to be provided by the Employer at Works Project stage only.

12. Tenderers are referred to clause C.1.6.1 in Part T1.2 Tender Data with regard to working within the boundaries of the City of Cape Town municipal area, as shown on the drawings and as tabled therein.

    Rates submitted in the respective Schedules of Rates shall apply to Works Projects executed anywhere within the City of Cape Town Metropolitan area.

13. The procedures for allocation of Works Projects are specified in Part C1.2 Contract Data (refer to Clause 2.6).

14. Tenderers are referred to Clause 6.8.2 in Part C1.2 Contract Data regarding contract price adjustment.

C2.2 Schedules of Rates

Bid specifications may not make any reference to any particular trade mark, name, patent, design, type, specific origin or producer, unless there is no other sufficiently precise or intelligible way of describing the characteristics of the work, in which case such reference must be accompanied by the words "or equivalent".

CONTRACTORS MUST NOTE THAT WHEREVER THIS DOCUMENT REFERS TO ANY PARTICULAR TRADE MARK, NAME, PATENT, DESIGN, TYPE, SPECIFIC ORIGIN OR PRODUCER, SUCH REFERENCE SHALL BE DEEMED TO BE ACCOMPANIED BY THE WORDS 'OR EQUIVALENT"

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TENDER NO. 150Q/2024/25

TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

SCHEDULE A: PRELIMINARY AND GENERAL (SMALL WORKS)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
	SANS 1200 A	PRELIMINARY AND GENERAL (SMALL WORKS)		
	8.3	SCHEDULED FIXED-CHARGE AND VALUE-RELATED ITEMS		
		PANEL 1 (3CE or higher for Projects over R1m up to R3m)		
		Contractor's general obligations		
A10-1		Security (performance guarantee) (Framework contract once off pay item)	Sum	20 849.40
A20-1		Insurance (blanket/umbrella policy) (Framework contract annual pay item)	Sum	35 879.50
	8.3.2	Establishment of facilities on the Site		
	8.3.2.2	Facilities for the Contractor		
A30-1		a) Offices and storage sheds	Sum	13 049.51
A40-1		e) Ablution and latrine facilities	Sum	6 276.96
A50-1		g) Water supplies, electric power (including provision of generator) and communications	Sum	10 063.47
A60-1	8.3.3	General responsibilities and other fixed-charge obligations	Sum	10 291.75
A70-1	8.3.4	Removal of Site Establishment	Sum	13 049.51
A80-1		Testing carried out by commercial or council laboratory as ordered by Employer's Agent	Prov Sum	10 000.00
A90-1		% Profit and Attendance for item A80	%	15.5%
	8.4	SCHEDULED TIME-RELATED ITEMS		
A100-1		Contractual requirements	day	11 696.62
	8.4.2	Operation and Maintenance of Facilities on Site, for the duration of the Duration of Construction, except where otherwise stated		
	PSA 8.4.2.2	Facilities for the Contractor		
A110-1		a) Offices and storage sheds	day	755.97
A120-1		e) Ablution and latrine facilities	day	316.21
A130-1		g) Water supplies, electric power (including provision of generator) and communications	day	377.99
A140-1	8.4.5	General responsibilities and other fixed-charge obligations	day	755.97
		PANEL 2 (4CE or higher for Projects over R3m up to R6m)		
		Contractor's general obligations		
A10-2		Security (performance guarantee) (Framework contract once off pay item)	Sum	58 378.32
A20-2		Insurance (blanket/umbrella policy) (Framework contract annual pay item)	Sum	59 799.17
	8.3.2	Establishment of facilities on the Site		
	8.3.2.2	Facilities for the Contractor		
A30-2		a) Offices and storage sheds	Sum	15 749.30

A40-2		e) Ablution and latrine facilities	Sum	7 725.68
A50-2		g) Water supplies, electric power (including provision of generator) and communications	Sum	14 990.42
A60-2	8.3.3	General responsibilities and other fixed-charge obligations	Sum	11 318.88
A70-2	8.3.4	Removal of Site Establishment	Sum	15 749.30
A80-2		Testing carried out by commercial or council laboratory as ordered by Employer's Agent	Prov Sum	10 000.00
A90-2		% Profit and Attendance for item A80	%	16.0%
	8.4	SCHEDULED TIME-RELATED ITEMS		
A100-2		Contractual requirements	day	11 696.62
	8.4.2	Operation and Maintenance of Facilities on Site, for the duration of the Duration of Construction, except where otherwise stated		
	PSA 8.4.2.2	Facilities for the Contractor		
A110-2		a) Offices and storage sheds	day	755.97
A120-2		e) Ablution and latrine facilities	day	377.99
A130-2		g) Water supplies, electric power (including provision of generator) and communications	day	377.99
A140-2	8.4.5	General responsibilities and other fixed-charge obligations	day	755.97
		PANEL 3 (5CE or higher for Projects over R6m up to R10m)		
		Contractor's general obligations		
A10-3		Security (performance guarantee) (Framework contract once off pay item)	Sum	97 297.20
A20-3		Insurance (blanket/umbrella policy) (Framework contract annual pay item)	Sum	71 759.00
	8.3.2	Establishment of facilities on the Site		
	8.3.2.2	Facilities for the Contractor		
A30-3		a) Offices and storage sheds	Sum	15 749.30
A40-3		e) Ablution and latrine facilities	Sum	10 427.94
A50-3		g) Water supplies, electric power (including provision of generator) and communications	Sum	12 390.42
A60-3	8.3.3	General responsibilities and other fixed-charge obligations	Sum	12 358.88
A70-3	8.3.4	Removal of Site Establishment	Sum	15 749.30
A80-3		Testing carried out by commercial or council laboratory as ordered by Employer's Agent	Prov Sum	10 000.00
A90-3		% Profit and Attendance for item A80	%	16.0%
	8.4	SCHEDULED TIME-RELATED ITEMS		
A100-3		Contractual requirements	day	11 696.62
	8.4.2	Operation and Maintenance of Facilities on Site, for the duration of the Duration of Construction, except where otherwise stated		
	PSA 8.4.2.2	Facilities for the Contractor		
A110-3		a) Offices and storage sheds	day	755.97
A120-3		e) Ablution and latrine facilities	day	377.99
A130-3		g) Water supplies, electric power (including provision of generator) and communications	day	377.99

A140-3	8.4.5	General responsibilities and other fixed-charge obligations	day	755.97
	PSA 8.7	DAYWORKS (As ordered by the Employer's Agent)		
		LABOUR CHARGES		
A150		(a) Skilled Labourer	h	98.29
A160		(b) Unskilled Labourer	h	88.20
A170		(c) Team leader	h	109.88
A180		(d) Foreman	h	246.54
A190		(e) Artisan / Pipelayer/ Bricklayer	h	120.52
A200		(f) Plant Operator	h	110.44
A210		(g) Flagperson	h	85.98
A220		(h) Driver	h	96.70
A230		(i) Security Guard	h	67.71
A240		(j) Steel Welder	h	200.19
		MATERIALS CHARGES		
A250		(a) Actual cost of material (excl. VAT)	Prov Sum	100 000.00
A260		(b) Handling costs in respect of item A250	%	15.5%
		PLANT CHARGES (As ordered by the Employer's Agent)		
A270		(a) Backhoe / Digger loader	h	679.37
A280		(b) Tractor	h	362.12
A290		(c) Trailor	h	24.12
		(d) Tip truck		
A300		(i) Capacity of 6 m3	h	453.17
A310		(ii) Capacity of 10 m3	h	731.37
A320		(e) Walk-behind vibrating roller (1t)	h	159.85
A330		(f) Plate compactor	h	40.86
A340		(g) Water cart (5000 l)	h	454.11
A350		(h) Water cart (9000 l)	h	814.95
A360		(i) Concrete mixer	h	51.77
		(k) Flat bed truck		
A370		(i) Capacity of 3 ton	h	463.07
A380		(ii) Capacity of 6 ton	h	523.25
A390		(l) Compressor (16 m3 / min) including hoses and breakers	h	116.42
A400		(m) Excavator (minimum 20 ton)	h	969.67
A410		(n) Excavator (minimum 30 ton)	h	1 364.41
		(o) Light delivery vehicle		
A420		(i) Capacity of 0,5 ton	h	144.18
A430		(ii) Capacity of 1 ton	h	180.03
		(p) Pumps		
		Super Silent Selwood Seltorque pumps (or equivalent approved)		
A440		(i) 75mm diam	h	204.41
A450		(ii) 100mm diam	h	295.59
A460		(iii) 150mm diam	h	372.06
A470		(q) Sludge pump	h	42.04
A480		(r) Other plant not specified above	Prov Sum	10 000.00
A490		(s) Handling costs in respect of item A480	%	15.5%
	PSA 8.8	TEMPORARY WORKS		
	PSA 8.8.1	Main access roads to works		

		Construction and reinstatement of temporary access roads		
A500		(a) Up to 3 meter width	m	725.93
A510		(b) Up to 7 meter width	m	1 259.50
		Removal of temporary access roads and reinstate site to original condition		
A520		(a) Up to 3 meter width	m	197.54
A530		(b) Up to 7 meter width	m	275.64
	PSA 8.8.2	Accommodating traffic and maintaining temporary deviations one and two-way traffic as per the traffic manual in : (incl. traffic safety officer,flagmen, delineators and all signage)		
A540		(a) Point repair (Up to 15 meter)	No.	6 483.45
A550		(b) Point repair (Over 15m and up to 30 meter)	No.	9 352.09
A560		(c) Short Term Works	km	12 010.59
A570		(d) Urban streets - Two-Way lane closure	km	14 372.48
A580		(e) Urban streets - One-Way traffic accommodated	km	16 090.75
A590		(f) Urban streets - Lane Closure in and beyond junction	km	19 009.37
A600		g) Minor Arterial: Traffic Accomodation for Launch Pits and Point Repairs	km	14 593.85
	PSA 8.8.4.1	Location and protection of existing services		
A610		(a) Supply or hire of specialist equipment for detection of existing services	Sum	2 455.33
A620		(b) The use of specialist equipment for detection	h	922.32
	PSA 8.8.4.2	Hand excavation necessary for locating and exposing existing services in all materials:		
A630		(a) In roadways	m^3	528.53
A640		(b) In all other areas	m^3	403.93
	PSA 8.8.7	Dealing with water:		
A650		(a) Establishment	Sum	1 420.15
A660		(b) Dealing with subsurface water	day	2 484.81
A670		(c) Dealing with surface water	day	1 242.40
	PSA 8.8.7	Dealing with subsurface water by means of a well point system		
A680		(a) Establishment	Sum	18 449.48
A690		(b) Installation of well points and manifold	No.	504.50
A700		(c) Operate and maintain (150 points max)	day	7 482.02
A710		(d) Operate and maintain (300 points max)	day	13 736.01
A720		(e) Provisional Sum for other Specialist dewatering not covered above	Prov Sum	10 000.00
A730		(f) % Profit and Attendance for item A720	%	15.5%
	PSA 8.8.8	Watching, lighting and temporary fencing		
	PSA 8.8.8.1	Provision of PSiRA Security Guards as approved by the Employers Agent		
A740		a) PSiRA Grade A Guard	Man-day	1 192.28
A750		b) PSiRA Grade B Armed Guard	Man-day	1 359.07
A760		c) PSiRA Grade B Unarmed Guard	Man-day	1 081.08
A770		d) PSiRA Grade C Armed Guard	Man-day	1 235.52
A780		e) PSiRA Grade C Unarmed Guard	Man-day	974.16
A790		f) PSiRA Grade D Unarmed Guard	Man-day	957.53

A800		g) Extra-over item (a-f) above for security guards working overtime, night work, or on a weekend or public holiday when instructed	Man-day	80.00
A810		h) Temporary fencing	m	33.62
A820		i) Lighting	day	61.78
	PSA 8.8.9	Liaison with Service Authorities		
		Wayleave applications		
A830		a) Roads & Stormwater	Sum	150.00
A840		b) Water and Sanitation - Services	Sum	150.00
A850		c) Water and Sanitation - Bulk	Sum	150.00
A860		d) Eskom Electricity	Sum	150.00
A870		e) City of Cape Town - Electricity Department	Sum	150.00
A880		f) Telkom	Sum	150.00
A890		g) Open Serve - Fibre	Sum	150.00
A900		h) Dark Fibre Africa	Sum	150.00
A910		i) Vuma Fibre	Sum	150.00
A920		j) Frogfoot Fibre	Sum	150.00
A930		k) Liquid Telecom Fibre	Sum	150.00
A940		l) Octotel Fibre	Sum	150.00
A950		m) Other	Prov Sum	2 000.00
A960		n) Handling costs and profit for item A950	%	15.5%
A970		j) Application for use of portion of public open space per Works Project	Prov Sum	20 000.00
A980		k) Monthly rental of portion of public open space per Works Project	Prov Sum	10 000.00
	PSA 8.9	HEALTH AND SAFETY		
A990	PSA 8.9.1	Complying with Health and Safety requirements	day	604.77
	PSA 8.9.2	Asbestos Specialist Services:		
A1000		(a) Handling and disposal of asbestos-containing waste from site to the permitted Vissershok landfill site, in accordance with legislation	Sum	13 832.73
A1010		(b) Transport of asbestos-containing waste at the permitted low-hazard (H:h) landfill site at Vissershok, in accordance with legislation	ton.km	67.32
A1020		(c) Cost of dumping at permitted Vissershok landfill site (Original tipping slips are required for audit purposes)	ton	1 173.74
A1030		Medical surveilance for EPWP workers if required, as stipulated in Asbestos Regulations	No.	1 602.80
		ENVIRONMENTAL MANAGEMENT		
A1040	PSA 8.10	Complying with Environmental Management requirements	day	151.19
A1050	PSA 8.11	Noise Exemption Permit per Works Project	Sum	1 000.00
		COMMUNITY LIAISON OFFICER		
A1060		a) Employment of CLO	Work day	460.00
A1070		a) Handling costs and profit for item A1080	%	15.5%

TENDER NO. 150Q/2024/25

TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

SCHEDULE B: SITE CLEARANCE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
	SANS 1200 C	SITE CLEARANCE		
		Clear and Grub:		
B10	PSC 8.2.1	Clear and grub site (provisional: area to be designated by Employers Agent)	m²	15.01
	8.2.2	Remove and grub trees and tree stumps of girth		
B20		a) Up to and including 0,5m	No.	2 668.00
B30		b) over 0,5m up to and including 1,0m	No.	4 004.00
B40		c) over 1,0 m up to and including 2,0m	No.	5 868.72
	PSC 8.2.7	Dismantle and remove		
		a) Dismantle and Remove: Pipelines		
		Dismantle and Remove: Pipelines (all materials)		
B50		i) Up to 250mm nominal diameter	m	34.01
B60		ii) Over 250mm diameter up to 500mm nominal diameter	m	84.57
B70		iii) Over 500mm nominal diameter	m	176.31
		Dismantle and Remove: Pipelines encased in concrete (all materials)		
B80		iv) Up to 250mm nominal diameter	m	49.14
B90		v) Over 250mm diameter up to 500mm nominal diameter	m	125.31
B100		vi) Over 500mm nominal diameter	m	303.97
B110		b) Dismantle and Remove: Valve or Hydrant Chambers (Concrete)	No.	505.52
B120		c) Dismantle and Remove: Valve or Hydrant Chambers (Brick)	No.	442.33
B130		d) Dismantle and Remove: Kerb, Edging and channels	m	57.35
		e) Dismantle and Remove: Asphalt		
B140		i) Asphalt (0mm to 50mm thick)	m²	108.89
B150		ii) Asphalt (Over 50mm thick)	m²	142.80
B160		f) Dismantle and Remove: Road Signs	No.	192.31
B170		g) Dismantle and Remove: Vertical poles / bollards	No.	240.38
		h) Dismantle and Remove: Fence		
B180		i) All wire type fencing	m	144.81
B190		ii) All palisade type fencing	m	270.61
B200		iii) Vibracrete walls	m	254.69
B210		i) Dismantle and Remove: Trees and Plants / Shrubs	No.	116.76
B220		j) Dismantle and Remove: Grass and lawns	m²	49.44
		k) Dismantle and Remove: Concrete in roads, driveways or walkways		
B230		i) Up to 100mm thick concrete	m²	140.35
B240		ii) over 100mm and up to 200mm thick concrete	m²	187.14
B250		iii) over 200mm thick concrete	m²	280.71
B260		l) Dismantle and Remove: Brick Paving in roads, driveways or walkways	m²	69.51

B270		m) Dismantle and Remove: Concrete Thrust Blocks	m^3	1 294.57
B280	PSC 8.2.10	Remove topsoil to a nominal depth of 150mm, stockpile and reinstate	m^3	112.02
B290	PSC 8.2.11	Remove and dispose of rubble	m^3	472.09
	PSC 8.2.12	Remove and stockpile material for later reinstatement (including reinstatement upon completion)		
B300		a) Kerbs, edging and channels	m	295.53
B310		b) Road signs	No.	504.69
B320		c) Trees and Plants / Shrubs	No.	77.84
B330		d) Vertical poles / bollards	No.	504.69
B340		e) Grass and lawns	m^2	93.16
B350		f) Brick Paving in roads, driveways or walkways	m^2	276.29
		g) Fence		
B360		i) All wire type fencing	m	309.90
B370		ii) All palisade type fencing	m	809.13
B380		iii) Vibracrete walls	m	828.09
	PSC 8.2.13	Remove existing and install new (including reinstatement upon completion)		
B390		a) Road Signs	No.	1 736.16
B400		b) Trees and Plants / Shrubs	No.	386.72
B410		c) Vertical poles / bollards	No.	1 596.86
		d) Fence		
B420		i) All wire type fencing	m	853.02
B430		ii) All palisade type fencing	m	2 272.13
B440		iii) Vibracrete walls	m	1 355.13
	PSC 8.2.14	Saw cutting of existing surfaces		
		a) Asphalt		
B450		i) Asphalt (0mm to 50mm thick)	m	31.15
B460		ii) Asphalt (Over 50mm thick)	m	54.88
		b) Concrete		
B470		i) Up to 100mm thick concrete	m	54.88
B480		ii) over 100mm and up to 200mm thick concrete	m	78.62
B490		iii) over 200mm thick concrete	m	102.35
B500		c) Paving	m	31.15
		MISCELLANEOUS		
B510	PSC 8.2.16	Removal of Bees	Prov Sum	2 000.00
B520		Handling costs in respect of item B510	%	15.5%

TENDER NO. 150Q/2024/25

TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

SCHEDULE C: EARTHWORKS (PIPE TRENCHES)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
	SANS 1200 DB	EARTHWORKS (PIPE TRENCHES)		
		EXCAVATION		
	PSDB 8.3.2 a)	Excavate in all materials **by machine** for trenches, backfill, compact, and dispose of surplus material		
		Over 100mm up to 500 mm diam. for total trench depth:		
C10		a) Exceeding 0,0 m but not exceeding 1,0 m	m	104.71
C20		b) Exceeding 1,0 m but not exceeding 2,0 m	m	209.42
C30		c) Exceeding 2,0 m but not exceeding 3,0 m	m	471.20
C40		d) Exceeding 3,0 m but not exceeding 4,0m	m	1 009.71
C50		e) Exceeding 4,0 m but not exceeding 5,0 m	m	1 615.53
	PSDB 8.3.2 b)	Extra-over items C10 to C50 incl. for (provisional):		
C60		i) Intermediate material	m³	125.00
C70		ii) Hard rock	m³	1 000.00
C80	PSDB 8.3.2 c)	Excavate and dispose of unsuitable material from trench bottom (Provisional)	m³	250.00
	PSDB 8.3.2 d)	Excavate in all materials **by hand** for trenches, backfill, compact, and dispose of surplus material		
		Over 100mm up to 500 mm diam. for total trench depth:		
C90		a) Exceeding 0,0 m but not exceeding 1,0 m	m	403.93
C100		b) Exceeding 1,0 m but not exceeding 2,0 m	m	757.36
C110		c) Exceeding 2,0 m but not exceeding 3,0 m	m	1 450.47
	PSDB 8.3.2 b)	Extra-over items C90 to C110 incl. for (provisional):		
C120		i) Intermediate material	m³	250.00
C130		ii) Hard rock	m³	1 000.00
	PSDB 8.3.2 e)	Excavations for point repairs and valve chambers / structure installation		
		Excavate in all materials for short trenches, backfill, compact and dispose of surplus material for all pipe diameters for the following depths:		
C140		a) Exceeding 0,0 m but not exceeding 1,0 m	m³	403.93
C150		b) Exceeding 1,0 m but not exceeding 2,0 m	m³	504.91
C160		c) Exceeding 2,0 m but not exceeding 3,0 m	m³	623.33
C170		d) Exceeding 3,0 m but not exceeding 4,0m	m³	867.56
C180		e) Exceeding 4,0 m but not exceeding 5,0 m	m³	1 327.05
	PSDB 8.3.2 b)	Extra-over items C140 to C180 incl. for (provisional):		
C190		i) Intermediate material	m³	250.00
C200		ii) Hard rock	m³	1 000.00
	PSDB 8.3.2 b)	Extra-over C70, C130 and C200 for excavation in hard rock		

C210		iii) using pneumatic tools or other techniques where blasting is not permitted	m³	500.00
		EXCAVATION ANCILLARIES		
	PSDB 8.3.3.1	Make up deficiency in backfill material (provisional)		
C220	8.3.3.1 a)	From other necessary excavations on site	m³	35.00
	8.3.3.1 c)	By importation from commercial source (As approved by the Employer's Agent)		
C230		a) Sand	m³	613.14
C240		b) Up to 37mm stone any thickness	m³	789.97
C250		c) Extra over for 5% cement stabilized backfill on items C220 & C230 where ordered by the Employers Agent	m³	378.16
C260	8.3.3.3	Compaction in road reserve	m³	27.97
	8.3.4	PARTICULAR ITEMS		
	PSDB 8.3.4	a) Shoring trench for pipeline excavations (for depths):		
C270		i) 1,0m - 2,0m	m	926.69
C280		ii) 2,0m - 3,0m	m	1 949.42
C290		iii) 3,0m - 4,0m	m	2 590.81
C300		iv) 4,0m - 5,0m	m	6 352.25
		b) Shoring for point repairs		
C310		i) 1,0m - 2,0m	m²	308.90
C320		ii) 2,0m - 3,0m	m²	389.88
C330		iii) 3,0m - 4,0m	m²	577.01
C340		iv) 4,0m - 5,0m	m²	972.65
C350		c) Shoring design and approval costs as approved by the Employers Agent	h	2 035.00
	8.3.5	EXISTING SERVICES		
	8.3.5 a)	Services that intersect a trench (temporary protection)		
C360		a) LV electrical cables	No.	150.00
C370		b) HV electrical cables	No.	500.00
C380		c) House water connections	No.	75.00
C390		d) Water mains	No.	250.00
C400		e) Water erf connections (Up to 50mm dia)	No.	75.00
C410		f) Bulk water mains	No.	680.00
C420		g) Stormwater pipes up to 600mm dia.	No.	500.00
C430		h) Stormwater pipes over 600mm dia.	No.	550.00
C440		i) Sewer erf connections (Up to 110mm dia)	No.	250.00
C450		j) Sewer pipes up to 300 mm dia.	No.	330.00
C460		k) Sewer pipes over 300 mm dia.	No.	390.00
C470		l) Telecommunication cables in ducts	No.	75.00
C480		m) Telecommunication optic fibre cables	No.	75.00
C490		n) Stormwater channels and kerbs	No.	75.00
	8.3.5 b)	Services that adjoin a trench (temporary protection)		
C500		a) LV electrical cables	m	15.00
C510		b) HV electrical cables	m	25.00
C520		c) Water mains	m	20.00
C530		d) Water erf connections (Up to 50mm dia)	m	15.00
C540		e) Bulk water mains	m	50.00

C550		f) Stormwater pipes up to 600mm dia.	m	25.00
C560		g) Stormwater pipes over 600mm dia.	m	35.00
C570		h) Sewer erf connections (Up to 110mm dia)	m	20.00
C580		i) Sewer pipes up to 300 mm dia.	m	25.00
C590		j) Sewer pipes over 300 mm dia.	m	35.00
C600		k) Telecommunication cables in ducts	m	15.00
C610		l) Telecommunication optic fibre cables	m	15.00
C620		m) Stormwater channels and kerbs	m	15.00
	PSDB 8.3.6	FINISHING (REINSTATEMENT)		
	PSDB 8.3.6.1	Reinstate road surfaces complete with all courses from commercial sources:		
		LAYER WORKS		
	1200 DM	Selected layer		
C630	8.3.5	G7 Selected layer from commercial sources, constructed in 150mm layers compacted to 93% MOD AASHTO (100% for sand)	m3	942.09
	1200 ME	Subbase		
C640	8.3.3	Construct subbase with G5 material from commercial sources compacted to 95% of MAASHTO density	m3	1 077.77
C650	ME 8.3.5(d)	Process subbase material by means of cement stabilisation, to produce C4 / C3 subbase layer, compacted to 97 % Mod. AASHTO	m3	827.37
C660	8.3.8	Stabilising agent: Portland cement	t	2 602.12
	1200 MF	Base Course		
C670	8.3.3	Construct base with G4 material from commercial sources compacted to 98% of MAASHTO density	m3	1 433.17
	1200 MH	ASPHALT BASE AND SURFACING		
		Asphalt base (BTB) (50/70 bitumen; 28mm max. aggregate)		
C680		Continuously graded - CCC Type	m3	5 899.38
		PRIME COAT		
	8.5.1	Prime coat using:		
		MC-30 Cutback bitumen		
C690		On Roads	m²	36.24
C700		On Sidewalks	m²	36.24
	8.5.4	ASPHALT SURFACING		
		Roads		
		Continuously graded - CCC Type		
C710		30mm Thick	m²	236.11
C720		40mm Thick	m²	314.81
C730		50mm Thick	m²	393.52
		Continuously graded - COLTO Type Medium		
C740		30mm Thick	m²	227.23
C750		40mm Thick	m²	302.97
C760		50mm Thick	m²	378.72
		Sidewalks		
		Continuously graded - COLTO Type Fine		
C770		20mm Thick	m²	152.50
C780		30mm Thick	m²	228.76
		Joint sealants		

C790		Application of waterproofing sealant to asphalt patches ('Colseal' or equivalent)	l	68.86
	PSDB 8.3.6.1	Reinstate other surfaces including the following new layerworks from commercial sources:		
C800		a) Concrete (30 MPa strength, thickness according to specification, on selected layers as required for sidewalks and driveways)	m3	4 070.00
	1200 MJ	SEGMENTED PAVING		
	8.2.2	Concrete interlocking block paving (Class 30, 200x100x60mm thickness) complete with 20mm sand bedding and joint filling sand		
C810		Grey interlocking pavers	m²	390.36
C820		Tan interlocking pavers	m²	405.18
C830		Charcoal interlocking pavers	m²	403.49
C840		Terracotta interlocking pavers	m²	404.63
		Concrete interlocking block paving (Class 30, 200x100x80mm thickness) complete with 20mm sand bedding and joint filling sand		
C850		Grey interlocking pavers	m²	439.38
C860		Tan interlocking pavers	m²	469.64
C870		Charcoal interlocking pavers	m²	468.45
C880		Terracotta interlocking pavers	m²	469.64
		Concrete straight edge bond paving blocks (Class 30, 200x100x50mm thickness) complete with 20mm sand bedding and joint filling sand		
C890		Grey interlocking pavers	m²	395.81
C900		Tan interlocking pavers	m²	414.97
C910		Charcoal interlocking pavers	m²	414.97
C920		Terracotta interlocking pavers	m²	414.97
		Concrete straight edge bond paving blocks (Class 30, 200x100x70mm thickness) complete with 20mm sand bedding and joint filling sand		
C930		Grey interlocking pavers	m²	411.68
C940		Tan interlocking pavers	m²	461.91
C950		Charcoal interlocking pavers	m²	446.59
C960		Terracotta interlocking pavers	m²	461.91
		Concrete cobble paving blocks (Class 30, 50mm thickness) complete with 20mm sand bedding and joint filling sand		
C970		Single charcoal cobble	m²	524.36
C980		Double charcoal cobble	m²	551.00
		Concrete cobble paving blocks (Class 30, 70mm thickness) complete with 20mm sand bedding and joint filling sand		
C990		Single charcoal cobble	m²	661.66
C1000		Double charcoal cobble	m²	676.98
		(a) Clay block paving (Class PA, 200x100x50mm thickness) complete with 20mm sand bedding and joint filling sand		
C1010		(i) De Hoop Red or equivalent	m²	630.56
C1020		(ii) Wheatstone or equivalent	m²	630.56

		(b) Clay block paving (Class PA, 222x100x73mm thickness) complete with 20mm sand bedding and joint filling sand		
C1030		(i) De Hoop Red or equivalent	m²	754.12
C1040		(ii) Wheatstone or equivalent	m²	678.76
C1050		Installation of pavers (Paver costs measured separately) on 20mm sand bed.	m²	173.71
		Extra-over items C1050 for (provisional):		
C1060		i) Material cost of new pavers not included in the Schedule of Rates (This Provisional Sum not to exceed R15 000 per Works Order)	Prov Sum	15 000.00
C1070		ii) Handling costs and profit for item C1060	%	15.5%
C1080	8.2.3	Cutting of blocks against edge restraints	m	33.21
		LANDSCAPING		
C1090		Grass and lawns	m²	129.75

TENDER NO. 150Q/2024/25

TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

SCHEDULE D: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
	SANS 1200 L	MEDIUM-PRESSURE PIPELINES		
		PIPEWORK (NEW PIPES)		
	8.2.1	Supply of Pipes only		
		Supply of uPVC Pressure Pipes to SANS 966 (Class 12) (SAPPMA certified)		
D10		75 mm diam.	m	56.83
D20		90 mm diam.	m	80.31
D30		110 mm diam.	m	98.84
D40		160 mm diam.	m	212.51
D50		200 mm diam.	m	327.41
D60		250 mm diam.	m	518.92
D70		315 mm diam.	m	833.98
D80		355 mm diam.	m	1 062.55
D90		400 mm diam.	m	1 359.07
D100		450 mm diam.	m	1 606.18
D110		500 mm diam.	m	2 155.98
		Supply of uPVC Pressure Pipes to SANS 966 (Class 16) (SAPPMA certified)		
D120		75 mm diam.	m	69.19
D130		90 mm diam.	m	103.78
D140		110 mm diam.	m	129.73
D150		160 mm diam.	m	271.81
D160		200 mm diam.	m	429.96
D170		250 mm diam.	m	673.36
D180		315 mm diam.	m	1 072.43
D190		355 mm diam.	m	1 359.07
D200		400 mm diam.	m	1 760.62
		Supply of PVC-O PN 12,5 Pressure Pipes to SANS 16422 (SAPPMA certified)		
D210		110 mm diam.	m	101.31
D220		160 mm diam.	m	191.51
D230		200 mm diam.	m	287.26
D240		250 mm diam.	m	457.14
D250		315 mm diam.	m	719.07
D260		355 mm diam.	m	920.46
D270		400 mm diam.	m	1 173.74
D280		450 mm diam.	m	1 457.91
D290		500 mm diam.	m	1 853.28
		Supply of PVC-O PN 16 Pressure Pipes to SANS 16422 (SAPPMA certified)		
D300		110 mm diam.	m	117.37
D310		160 mm diam.	m	228.57
D320		200 mm diam.	m	364.48
D330		250 mm diam.	m	583.17

D340		315 mm diam.	m	932.82
D350		355 mm diam.	m	1 192.28
D360		400 mm diam.	m	1 562.93
D370		450 mm diam.	m	1 976.83
D380		500 mm diam.	m	2 409.26
		Supply of PVC-O PN 20 Pressure Pipes to SANS 16422 (SAPPMA certified)		
D390		110 mm diam.	m	129.73
D400		160 mm diam.	m	277.99
D410		200 mm diam.	m	444.79
D420		250 mm diam.	m	704.25
D430		315 mm diam.	m	1 105.79
D440		355 mm diam.	m	1 389.96
D450		400 mm diam.	m	1 772.97
D460		450 mm diam.	m	2 223.94
D470		500 mm diam.	m	2 878.76
		Supply of PVC-O PN 25 Pressure Pipes to SANS 16422 (SAPPMA certified)		
D480		110 mm diam.	m	195.21
D490		160 mm diam.	m	415.13
D500		200 mm diam.	m	648.65
D510		250 mm diam.	m	1 025.48
D520		315 mm diam.	m	1 630.89
D530		355 mm diam.	m	2 094.21
D540		400 mm diam.	m	2 656.37
D550		450 mm diam.	m	3 366.79
D560		500 mm diam.	m	4 176.06
		Supply of HDPE Pressure Pipes to SANS 4427 earmarked for erf connections and Horizontal Directional Drilling (SAPPMA certified)		
D570		16 mm HDPE PE 100 PN 16	m	5.25
D580		20 mm HDPE PE 100 PN 16	m	6.18
D590		25 mm HDPE PE 100 PN 16	m	8.03
D610		32 mm HDPE PE 100 PN 16	m	13.22
D620		40 mm HDPE PE 100 PN 16	m	20.39
D630		50 mm HDPE PE 100 PN 16	m	31.51
D640		63 mm HDPE PE 100 PN 16	m	50.04
D650		75 mm HDPE PE 100 PN 16	m	69.07
D660		110mm HDPE PE 100 PN 16	m	148.88
D670		160mm HDPE PE 100 PN 16	m	316.29
D680		200mm HDPE PE 100 PN 16	m	491.74
D690		250mm HDPE PE 100 PN 16	m	766.02
D700		315mm HDPE PE 100 PN 16	m	1 215.75
D710		355mm HDPE PE 100 PN 16	m	1 543.16
D720		400mm HDPE PE 100 PN 16	m	1 958.30
D730		450mm HDPE PE 100 PN 16	m	2 479.69
D740		500mm HDPE PE 100 PN 16	m	3 060.38
		Supply of Pex-Aluminium-Pex multi-layer pipe PN 16 only for erf connection OD dimensions		
D750		16 mm diam.	m	40.32
D760		20 mm diam.	m	63.00

D770		25 mm diam.	m	102.51
D780		32 mm diam.	m	156.47
D790		40 mm diam.	m	219.45
	8.2.1	Handle, lay and bed (class B), with spigot and socket joints, test and disinfect. (Pipes measured separately)		
		PVC Pressure Pipes to SANS 966 (SAPPMA certified)		
D800		75 mm diam.	m	41.76
D810		90 mm diam.	m	41.76
D820		110 mm diam.	m	47.94
D830		160 mm diam.	m	52.88
D840		200 mm diam.	m	59.06
D850		250 mm diam.	m	67.09
D860		315 mm diam.	m	79.07
D870		355 mm diam.	m	84.63
D880		400 mm diam.	m	102.55
D890		450 mm diam.	m	108.73
D900		500 mm diam.	m	114.90
		JOINTING (POINT REPAIRS)		
		Cut into existing pipeline for the nominal diameters and connect new pipeline and specials and make good and supply two long collar detachable joints		
D910		50 mm diam.	No.	2 588.09
D920		75 mm diam.	No.	2 870.26
D930		90 mm diam.	No.	3 344.25
D940		110 mm diam.	No.	3 723.86
D950		160 mm diam.	No.	4 953.18
D960		200 mm diam.	No.	5 796.22
D970		250 mm diam.	No.	8 643.97
D980		315 mm diam.	No.	11 090.23
D990		355 mm diam.	No.	12 334.98
D1000		400 mm diam.	No.	21 180.06
D1010		450 mm diam.	No.	23 696.91
D1020		500 mm diam.	No.	26 897.45
	8.2.2	Supply, lay, bed, joint, incl. cut pipes to length where required, test and disinfect.		
		BENDS: All socket ends (PVC Class 16)		
		11.25 deg		
D1030		75 mm diam.	No.	184.09
D1040		90 mm diam.	No.	270.58
D1050		110 mm diam.	No.	318.76
D1060		160 mm diam.	No.	791.97
D1070		200 mm diam.	No.	1 483.86
D1080		250 mm diam.	No.	2 652.67
D1090		300 mm diam.	No.	5 806.94
		22.5 deg		
D1140		75 mm diam.	No.	184.09
D1150		90 mm diam.	No.	270.58
D1160		110 mm diam.	No.	318.76
D1170		160 mm diam.	No.	791.97

D1180		200 mm diam.	No.	1 483.86
D1190		250 mm diam.	No.	2 652.67
D1200		300 mm diam.	No.	5 806.94
		45 deg		
D1250		75 mm diam.	No.	201.39
D1260		90 mm diam.	No.	296.53
D1270		110 mm diam.	No.	397.84
D1280		160 mm diam.	No.	963.71
D1290		200 mm diam.	No.	1 828.57
D1300		250 mm diam.	No.	3 224.71
D1310		300 mm diam.	No.	7 442.77
		90 deg		
D1360		75 mm diam.	No.	201.39
D1370		90 mm diam.	No.	296.53
D1380		110 mm diam.	No.	397.84
D1390		160 mm diam.	No.	963.71
D1400		200 mm diam.	No.	1 828.57
D1410		250 mm diam.	No.	3 224.71
D1420		300 mm diam.	No.	7 442.77
		BENDS: All socket ends (Ductile Iron PN 16)		
		11.25 deg		
D1470		75 mm diam.	No.	413.90
D1480		90 mm diam.	No.	528.80
D1490		110 mm diam.	No.	706.72
D1500		160 mm diam.	No.	1 284.64
D1510		200 mm diam.	No.	1 865.63
D1520		250 mm diam.	No.	3 004.79
D1530		300 mm diam.	No.	4 570.19
		22.5 deg		
D1580		75 mm diam.	No.	413.90
D1590		90 mm diam.	No.	562.16
D1600		110 mm diam.	No.	667.18
D1610		160 mm diam.	No.	1 266.41
D1620		200 mm diam.	No.	1 964.48
D1630		250 mm diam.	No.	3 081.39
D1640		300 mm diam.	No.	5 075.51
		45 deg		
D1690		75 mm diam.	No.	443.55
D1700		90 mm diam.	No.	615.29
D1710		110 mm diam.	No.	803.09
D1720		160 mm diam.	No.	1 737.14
D1730		200 mm diam.	No.	2 175.75
D1740		250 mm diam.	No.	3 768.34
D1750		300 mm diam.	No.	5 758.76
		90 deg		
D1800		75 mm diam.	No.	562.16
D1810		90 mm diam.	No.	684.48
D1820		110 mm diam.	No.	851.27
D1830		160 mm diam.	No.	1 697.61
D1840		200 mm diam.	No.	2 961.54

D1850		250 mm diam.	No.	4 502.24
D1860		300 mm diam.	No.	6 423.47
		BENDS: All plain ended (Type 1: Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent) inclusive of ranger couplings		
		11.25 deg		
D1910		75 mm diam.	No.	2 930.80
D1920		90 mm diam.	No.	3 288.15
D1930		110 mm diam.	No.	3 857.99
D1940		160 mm diam.	No.	5 793.98
D1950		200 mm diam.	No.	8 102.42
D1960		250 mm diam.	No.	12 305.67
D1970		300 mm diam.	No.	15 688.75
D1980		350 mm diam.	No.	18 929.59
D1990		400 mm diam.	No.	26 057.14
D2000		450 mm diam.	No.	30 274.90
D2010		500 mm diam.	No.	44 289.18
		22.5 deg		
D2020		75 mm diam.	No.	2 930.80
D2030		90 mm diam.	No.	3 288.15
D2040		110 mm diam.	No.	3 861.81
D2050		160 mm diam.	No.	5 793.98
D2060		200 mm diam.	No.	7 993.22
D2070		250 mm diam.	No.	12 305.67
D2080		300 mm diam.	No.	15 688.75
D2090		350 mm diam.	No.	18 929.59
D2100		400 mm diam.	No.	26 057.14
D2110		450 mm diam.	No.	30 130.35
D2120		500 mm diam.	No.	45 069.04
		45 deg		
D2130		75 mm diam.	No.	2 930.80
D2140		90 mm diam.	No.	3 288.15
D2150		110 mm diam.	No.	3 861.81
D2160		160 mm diam.	No.	5 854.58
D2170		200 mm diam.	No.	8 138.82
D2180		250 mm diam.	No.	12 524.93
D2190		300 mm diam.	No.	15 840.05
D2200		350 mm diam.	No.	20 864.74
D2210		400 mm diam.	No.	26 842.32
D2220		450 mm diam.	No.	31 286.75
D2230		500 mm diam.	No.	45 069.04
		90 deg		
D2240		75 mm diam.	No.	3 178.05
D2250		90 mm diam.	No.	3 553.40
D2260		110 mm diam.	No.	4 138.31
D2270		160 mm diam.	No.	6 390.17
D2280		200 mm diam.	No.	8 554.90
D2290		250 mm diam.	No.	13 492.26
D2300		300 mm diam.	No.	17 399.75
D2310		350 mm diam.	No.	22 672.24

D2320		400 mm diam.	No.	29 400.05
D2330		450 mm diam.	No.	33 612.85
D2340		500 mm diam.	No.	50 779.74
		BENDS: All plain ended (Type 2: Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent) inclusive of ranger couplings		
		11.25 deg		
D2350		75 mm diam.	No.	3 305.41
D2360		90 mm diam.	No.	3 547.67
D2370		110 mm diam.	No.	4 327.79
D2380		160 mm diam.	No.	6 633.98
D2390		200 mm diam.	No.	9 114.22
D2400		250 mm diam.	No.	13 903.63
D2410		300 mm diam.	No.	18 823.47
D2420		350 mm diam.	No.	21 955.59
D2430		400 mm diam.	No.	30 517.58
D2440		450 mm diam.	No.	35 587.75
D2450		500 mm diam.	No.	48 926.90
		22.5 deg		
D2460		75 mm diam.	No.	3 321.34
D2470		90 mm diam.	No.	3 583.13
D2480		110 mm diam.	No.	4 370.89
D2490		160 mm diam.	No.	6 705.38
D2500		200 mm diam.	No.	9 377.17
D2510		250 mm diam.	No.	14 306.77
D2520		300 mm diam.	No.	18 915.25
D2530		350 mm diam.	No.	22 077.75
D2540		400 mm diam.	No.	31 140.45
D2550		450 mm diam.	No.	35 934.32
D2560		500 mm diam.	No.	49 343.83
		45 deg		
D2570		75 mm diam.	No.	3 353.20
D2580		90 mm diam.	No.	3 654.04
D2590		110 mm diam.	No.	4 457.10
D2600		160 mm diam.	No.	6 919.58
D2610		200 mm diam.	No.	9 640.12
D2620		250 mm diam.	No.	14 709.91
D2630		300 mm diam.	No.	19 649.51
D2640		350 mm diam.	No.	24 643.27
D2650		400 mm diam.	No.	32 386.19
D2660		450 mm diam.	No.	38 360.27
D2670		500 mm diam.	No.	53 081.52
		90 deg		
D2680		75 mm diam.	No.	3 606.07
D2690		90 mm diam.	No.	3 959.47
D2700		110 mm diam.	No.	4 742.15
D2710		160 mm diam.	No.	7 755.53
D2720		200 mm diam.	No.	10 337.22
D2730		250 mm diam.	No.	15 623.63
D2740		300 mm diam.	No.	21 759.25

D2750		350 mm diam.	No.	28 937.67
D2760		400 mm diam.	No.	38 717.67
D2770		450 mm diam.	No.	45 110.66
D2780		500 mm diam.	No.	60 330.36
		BENDS: Double flanged (Type 1: Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent) including stainless steel nuts and bolts		
		11.25 deg		
D2790		75 mm diam.	No.	2 359.12
D2800		90 mm diam.	No.	2 376.36
D2810		110 mm diam.	No.	2 752.31
D2820		160 mm diam.	No.	4 796.27
D2830		200 mm diam.	No.	7 274.09
D2840		250 mm diam.	No.	10 938.42
D2850		300 mm diam.	No.	15 928.27
D2860		350 mm diam.	No.	20 515.74
D2870		400 mm diam.	No.	26 188.73
D2880		450 mm diam.	No.	31 401.18
D2890		500 mm diam.	No.	53 053.10
		22.5 deg		
D2900		75 mm diam.	No.	2 359.12
D2910		90 mm diam.	No.	2 376.36
D2920		110 mm diam.	No.	2 752.31
D2930		160 mm diam.	No.	4 796.27
D2940		200 mm diam.	No.	7 274.09
D2950		250 mm diam.	No.	10 938.42
D2960		300 mm diam.	No.	15 928.27
D2970		350 mm diam.	No.	20 515.74
D2980		400 mm diam.	No.	26 304.59
D2990		450 mm diam.	No.	31 401.18
D3000		500 mm diam.	No.	53 053.10
		45 deg		
D3010		75 mm diam.	No.	2 359.12
D3020		90 mm diam.	No.	2 376.36
D3030		110 mm diam.	No.	2 752.31
D3040		160 mm diam.	No.	4 796.27
D3050		200 mm diam.	No.	7 274.09
D3060		250 mm diam.	No.	10 938.42
D3070		300 mm diam.	No.	15 928.27
D3080		350 mm diam.	No.	20 515.74
D3090		400 mm diam.	No.	26 397.28
D3100		450 mm diam.	No.	31 401.18
D3110		500 mm diam.	No.	53 053.10
		90 deg		
D3120		75 mm diam.	No.	2 501.20
D3130		90 mm diam.	No.	2 518.44
D3140		110 mm diam.	No.	2 869.68
D3150		160 mm diam.	No.	5 037.19
D3160		200 mm diam.	No.	7 428.53
D3170		250 mm diam.	No.	11 438.81

D3180		300 mm diam.	No.	16 175.37
D3190		350 mm diam.	No.	21 009.95
D3200		400 mm diam.	No.	26 649.25
D3210		450 mm diam.	No.	31 761.18
D3220		500 mm diam.	No.	54 202.13
		BENDS: Double Flanged (Type 2: Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent) including stainless steel nuts and bolts		
		11.25 deg		
D3230		75 mm diam.	No.	2 785.37
D3240		90 mm diam.	No.	2 802.61
D3250		110 mm diam.	No.	3 425.67
D3260		160 mm diam.	No.	6 278.89
D3270		200 mm diam.	No.	9 312.69
D3280		250 mm diam.	No.	14 336.10
D3290		300 mm diam.	No.	20 357.61
D3300		350 mm diam.	No.	26 094.12
D3310		400 mm diam.	No.	32 610.48
D3320		450 mm diam.	No.	38 746.37
D3330		500 mm diam.	No.	56 759.66
		22.5 deg		
D3340		75 mm diam.	No.	2 785.37
D3350		90 mm diam.	No.	2 802.61
D3360		110 mm diam.	No.	3 425.67
D3370		160 mm diam.	No.	6 278.89
D3380		200 mm diam.	No.	9 312.69
D3390		250 mm diam.	No.	14 336.10
D3400		300 mm diam.	No.	20 357.61
D3410		350 mm diam.	No.	26 094.12
D3420		400 mm diam.	No.	33 184.38
D3430		450 mm diam.	No.	39 063.18
D3440		500 mm diam.	No.	56 759.66
		45 deg		
D3450		75 mm diam.	No.	2 785.37
D3460		90 mm diam.	No.	2 802.61
D3470		110 mm diam.	No.	3 425.67
D3480		160 mm diam.	No.	6 278.89
D3490		200 mm diam.	No.	9 312.69
D3500		250 mm diam.	No.	14 336.10
D3510		300 mm diam.	No.	20 357.61
D3520		350 mm diam.	No.	26 094.12
D3530		400 mm diam.	No.	34 045.23
D3540		450 mm diam.	No.	40 188.49
D3550		500 mm diam.	No.	56 759.66
		90 deg		
D3560		75 mm diam.	No.	2 908.92
D3570		90 mm diam.	No.	2 926.16
D3580		110 mm diam.	No.	3 518.33
D3590		160 mm diam.	No.	6 896.65
D3600		200 mm diam.	No.	9 745.13

D3610		250 mm diam.	No.	14 805.60
D3620		300 mm diam.	No.	21 858.77
D3630		350 mm diam.	No.	32 422.49
D3640		400 mm diam.	No.	40 961.68
D3650		450 mm diam.	No.	48 485.43
D3660		500 mm diam.	No.	69 874.70
		BENDS: Double Flanged (Type 3: Cement lining and concreate sheating or equivalent) including stainless steel nuts and bolts		
		11.25 deg		
D3670		75 mm diam.	No.	2 235.57
D3680		90 mm diam.	No.	2 252.81
D3690		110 mm diam.	No.	2 584.28
D3700		160 mm diam.	No.	4 521.98
D3710		200 mm diam.	No.	6 823.12
D3720		250 mm diam.	No.	9 987.07
D3730		300 mm diam.	No.	13 704.33
D3740		350 mm diam.	No.	17 830.49
D3750		400 mm diam.	No.	23 662.61
D3760		450 mm diam.	No.	28 066.38
D3770		500 mm diam.	No.	50 742.68
		22.5 deg		
D3780		75 mm diam.	No.	2 235.57
D3790		90 mm diam.	No.	2 252.81
D3800		110 mm diam.	No.	2 584.28
D3810		160 mm diam.	No.	4 521.98
D3820		200 mm diam.	No.	6 823.12
D3830		250 mm diam.	No.	9 987.07
D3840		300 mm diam.	No.	13 704.33
D3850		350 mm diam.	No.	17 830.49
D3860		400 mm diam.	No.	23 743.94
D3870		450 mm diam.	No.	28 066.38
D3880		500 mm diam.	No.	50 742.68
		45 deg		
D3890		75 mm diam.	No.	2 235.57
D3900		90 mm diam.	No.	2 252.81
D3910		110 mm diam.	No.	2 584.28
D3920		160 mm diam.	No.	4 521.98
D3930		200 mm diam.	No.	6 823.12
D3940		250 mm diam.	No.	9 987.07
D3950		300 mm diam.	No.	13 704.33
D3960		350 mm diam.	No.	17 830.49
D3970		400 mm diam.	No.	23 769.33
D3980		450 mm diam.	No.	28 066.38
D3990		500 mm diam.	No.	50 742.68
		90 deg		
D4000		75 mm diam.	No.	2 359.12
D4010		90 mm diam.	No.	2 376.36
D4020		110 mm diam.	No.	2 628.76
D4030		160 mm diam.	No.	4 672.71
D4040		200 mm diam.	No.	6 903.43

D4050		250 mm diam.	No.	12 081.28
D4060		300 mm diam.	No.	15 881.32
D4070		350 mm diam.	No.	22 202.23
D4080		400 mm diam.	No.	26 548.50
D4090		450 mm diam.	No.	30 193.88
D4100		500 mm diam.	No.	50 860.05
		TEES: All socket ends (PVC Class 16)		
D4110		75 x 75 mm	No.	363.86
D4120		90 x 90 mm	No.	522.63
D4130		110 x 110 mm	No.	722.78
D4140		160 x 110 mm	No.	2 122.62
D4150		160 x 160 mm	No.	1 868.10
D4160		200 x 110 mm	No.	3 700.38
D4170		200 x 160 mm	No.	3 706.56
D4180		200 x 200 mm	No.	3 429.80
D4190		250 x 110 mm	No.	5 019.46
D4200		250 x 160 mm	No.	5 209.52
D4210		250 x 200 mm	No.	5 429.24
D4220		250 x 250 mm	No.	5 448.10
D4230		300 x 110 mm	No.	9 422.10
D4240		300 x 160 mm	No.	9 077.20
D4250		300 x 200 mm	No.	10 600.00
D4260		300 x 250 mm	No.	11 423.10
D4270		300 x 300 mm	No.	8 739.00
		TEES: All socket ends (Ductile Iron PN 16)		
D4580		75 x 75 mm	No.	342.86
D4590		90 x 90 mm	No.	673.36
D4600		110 x 110 mm	No.	791.97
D4610		160 x 110 mm	No.	1 795.21
D4620		160 x 160 mm	No.	1 653.12
D4630		200 x 110 mm	No.	2 755.21
D4640		200 x 160 mm	No.	2 917.06
D4650		200 x 200 mm	No.	2 702.08
D4660		250 x 110 mm	No.	3 936.37
D4670		250 x 160 mm	No.	3 755.98
D4680		250 x 200 mm	No.	4 148.88
D4690		250 x 250 mm	No.	3 935.13
D4700		300 x 110 mm	No.	6 883.08
D4710		300 x 160 mm	No.	6 464.24
D4720		300 x 200 mm	No.	7 856.67
D4730		300 x 250 mm	No.	8 255.75
D4740		300 x 300 mm	No.	6 314.75
		TEES: All plain ended (Type 1: Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent) inclusive of ranger couplings		
D5050		75 x 75 mm	No.	3 310.30
D5060		110 x 75 mm	No.	4 125.16
D5070		110 x 110 mm	No.	4 429.06
D5080		160 x 110 mm	No.	6 415.25
D5090		160 x 160 mm	No.	7 109.84

D5100		200 x 110 mm	No.	7 569.08
D5110		200 x 160 mm	No.	8 862.78
D5120		200 x 200 mm	No.	9 789.02
D5130		250 x 110 mm	No.	12 115.67
D5140		250 x 160 mm	No.	13 696.22
D5150		250 x 200 mm	No.	14 772.61
D5160		250 x 250 mm	No.	14 736.32
D5170		300 x 110 mm	No.	14 424.63
D5180		300 x 160 mm	No.	15 756.63
D5190		300 x 200 mm	No.	16 755.83
D5200		300 x 250 mm	No.	18 034.23
D5210		300 x 300 mm	No.	18 363.21
D5220		350 x 110 mm	No.	21 542.02
D5230		350 x 160 mm	No.	22 432.35
D5240		350 x 200 mm	No.	23 700.25
D5250		350 x 250 mm	No.	24 844.25
D5260		350 x 300 mm	No.	26 031.34
D5270		350 x 350 mm	No.	28 023.59
D5280		400 x 110 mm	No.	25 543.94
D5290		400 x 160 mm	No.	28 396.44
D5300		400 x 200 mm	No.	28 988.44
D5310		400 x 250 mm	No.	30 618.44
D5320		400 x 300 mm	No.	32 194.22
D5330		400 x 350 mm	No.	34 373.22
D5340		400 x 400 mm	No.	36 193.72
D5350		450 x 110 mm	No.	32 819.75
D5360		450 x 160 mm	No.	34 090.25
D5370		450 x 200 mm	No.	34 414.18
D5380		450 x 250 mm	No.	35 591.75
D5390		450 x 300 mm	No.	36 812.79
D5400		450 x 350 mm	No.	38 954.26
D5410		450 x 400 mm	No.	40 304.71
D5420		450 x 450 mm	No.	41 973.01
D5430		500 x 110 mm	No.	44 930.81
D5440		500 x 160 mm	No.	46 002.58
D5450		500 x 200 mm	No.	46 456.68
D5460		500 x 250 mm	No.	48 748.57
D5470		500 x 300 mm	No.	48 928.88
D5480		500 x 350 mm	No.	51 365.48
D5490		500 x 400 mm	No.	53 019.08
D5500		500 x 450 mm	No.	54 334.88
D5510		500 x 500 mm	No.	59 650.78
		TEES: All plain ended (Type 2: Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent) inclusive of ranger couplings		
D5520		75 x 75 mm	No.	4 419.85
D5530		110 x 75 mm	No.	5 615.94
D5540		110 x 110 mm	No.	6 268.81
D5550		160 x 110 mm	No.	8 690.92
D5560		160 x 160 mm	No.	9 226.96

D5570		200 x 110 mm	No.	10 129.28
D5580		200 x 160 mm	No.	11 997.62
D5590		200 x 200 mm	No.	13 080.97
D5600		250 x 110 mm	No.	16 717.22
D5610		250 x 160 mm	No.	18 419.47
D5620		250 x 200 mm	No.	20 264.45
D5630		250 x 250 mm	No.	19 447.97
D5640		300 x 110 mm	No.	19 014.71
D5650		300 x 160 mm	No.	20 450.56
D5660		300 x 200 mm	No.	21 077.43
D5670		300 x 250 mm	No.	22 619.13
D5680		300 x 300 mm	No.	23 463.59
D5690		350 x 110 mm	No.	24 448.37
D5700		350 x 160 mm	No.	24 926.25
D5710		350 x 200 mm	No.	26 698.09
D5720		350 x 250 mm	No.	27 721.35
D5730		350 x 300 mm	No.	28 336.24
D5740		350 x 350 mm	No.	32 143.34
D5750		400 x 110 mm	No.	27 771.14
D5760		400 x 160 mm	No.	31 617.19
D5770		400 x 200 mm	No.	32 974.84
D5780		400 x 250 mm	No.	34 810.44
D5790		400 x 300 mm	No.	36 250.82
D5800		400 x 350 mm	No.	37 822.30
D5810		400 x 400 mm	No.	39 392.85
D5820		450 x 110 mm	No.	37 828.00
D5830		450 x 160 mm	No.	39 282.75
D5840		450 x 200 mm	No.	39 706.25
D5850		450 x 250 mm	No.	34 164.45
D5860		450 x 300 mm	No.	41 253.21
D5870		450 x 350 mm	No.	42 239.63
D5880		450 x 400 mm	No.	44 123.59
D5890		450 x 450 mm	No.	46 324.74
D5900		500 x 110 mm	No.	47 503.31
D5910		500 x 160 mm	No.	48 747.11
D5920		500 x 200 mm	No.	49 380.55
D5930		500 x 250 mm	No.	52 113.51
D5940		500 x 300 mm	No.	53 302.68
D5950		500 x 350 mm	No.	55 116.62
D5960		500 x 400 mm	No.	56 865.68
D5970		500 x 450 mm	No.	58 323.68
D5980		500 x 500 mm	No.	63 927.68
		TEES: All Flanged ends (Type 1: Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent) with stainless steel nut and bolts		
D5990		75 x 75 mm	No.	3 042.30
D6000		110 x 75 mm	No.	3 741.96
D6010		110 x 110 mm	No.	3 812.38
D6020		160 x 110 mm	No.	5 899.58
D6030		160 x 160 mm	No.	6 580.36

D6040		200 x 110 mm	No.	7 446.72
D6050		200 x 160 mm	No.	8 813.21
D6060		200 x 200 mm	No.	10 097.25
D6070		250 x 110 mm	No.	11 565.05
D6080		250 x 160 mm	No.	14 253.98
D6090		250 x 200 mm	No.	15 854.56
D6100		250 x 250 mm	No.	15 275.10
D6110		300 x 110 mm	No.	14 968.69
D6120		300 x 160 mm	No.	16 458.73
D6130		300 x 200 mm	No.	17 392.36
D6140		300 x 250 mm	No.	18 129.03
D6150		300 x 300 mm	No.	19 103.53
D6160		350 x 110 mm	No.	20 411.97
D6170		350 x 160 mm	No.	20 929.80
D6180		350 x 200 mm	No.	22 677.22
D6190		350 x 250 mm	No.	22 918.49
D6200		350 x 300 mm	No.	23 544.25
D6210		350 x 350 mm	No.	26 921.46
D6220		400 x 110 mm	No.	21 273.73
D6230		400 x 160 mm	No.	25 525.68
D6240		400 x 200 mm	No.	26 766.88
D6250		400 x 250 mm	No.	28 033.58
D6260		400 x 300 mm	No.	29 413.70
D6270		400 x 350 mm	No.	30 233.58
D6280		400 x 400 mm	No.	30 901.68
D6290		450 x 110 mm	No.	32 010.78
D6300		450 x 160 mm	No.	32 830.88
D6310		450 x 200 mm	No.	33 587.72
D6320		450 x 250 mm	No.	34 057.66
D6330		450 x 300 mm	No.	33 723.47
D6340		450 x 350 mm	No.	34 423.09
D6350		450 x 400 mm	No.	34 945.48
D6360		450 x 450 mm	No.	36 872.56
D6370		500 x 110 mm	No.	45 378.58
D6380		500 x 160 mm	No.	46 225.78
D6390		500 x 200 mm	No.	46 473.63
D6400		500 x 250 mm	No.	48 389.08
D6410		500 x 300 mm	No.	48 936.54
D6420		500 x 350 mm	No.	49 453.78
D6430		500 x 400 mm	No.	50 040.97
D6440		500 x 450 mm	No.	50 874.25
D6450		500 x 500 mm	No.	56 816.97
		TEES: All Flanged ends (Type 2: Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent) with stainless steel nut and bolts		
D6460		75 x 75 mm	No.	3 474.74
D6470		110 x 75 mm	No.	4 267.06
D6480		110 x 110 mm	No.	4 417.79
D6490		160 x 110 mm	No.	6 764.45
D6500		160 x 160 mm	No.	7 488.46

D6510		200 x 110 mm	No.	8 457.38
D6520		200 x 160 mm	No.	10 037.61
D6530		200 x 200 mm	No.	11 518.10
D6540		250 x 110 mm	No.	14 808.29
D6550		250 x 160 mm	No.	16 447.03
D6560		250 x 200 mm	No.	18 314.48
D6570		250 x 250 mm	No.	17 406.37
D6580		300 x 110 mm	No.	17 038.19
D6590		300 x 160 mm	No.	18 775.33
D6600		300 x 200 mm	No.	19 801.62
D6610		300 x 250 mm	No.	21 000.08
D6620		300 x 300 mm	No.	22 435.75
D6630		350 x 110 mm	No.	23 170.89
D6640		350 x 160 mm	No.	23 997.99
D6650		350 x 200 mm	No.	25 747.49
D6660		350 x 250 mm	No.	26 792.19
D6670		350 x 300 mm	No.	27 636.52
D6680		350 x 350 mm	No.	31 433.16
D6690		400 x 110 mm	No.	27 283.36
D6700		400 x 160 mm	No.	31 197.83
D6710		400 x 200 mm	No.	32 458.23
D6720		400 x 250 mm	No.	34 004.98
D6730		400 x 300 mm	No.	35 686.28
D6740		400 x 350 mm	No.	36 314.78
D6750		400 x 400 mm	No.	37 664.53
D6760		450 x 110 mm	No.	37 282.55
D6770		450 x 160 mm	No.	38 556.37
D6780		450 x 200 mm	No.	39 447.18
D6790		450 x 250 mm	No.	34 515.78
D6800		450 x 300 mm	No.	40 420.78
D6810		450 x 350 mm	No.	41 448.62
D6820		450 x 400 mm	No.	42 122.76
D6830		450 x 450 mm	No.	44 807.83
D6840		500 x 110 mm	No.	52 111.63
D6850		500 x 160 mm	No.	53 972.33
D6860		500 x 200 mm	No.	56 426.28
D6870		500 x 250 mm	No.	59 624.78
D6880		500 x 300 mm	No.	60 419.38
D6890		500 x 350 mm	No.	61 402.18
D6900		500 x 400 mm	No.	63 030.47
D6910		500 x 450 mm	No.	63 614.67
D6920		500 x 500 mm	No.	71 411.47
		TEES: All Flanged ends (Type 3: Mild Steel with Cement lining and concrete sheating or equivalent) with stainless steel nut and bolts		
D6930		75 x 75 mm	No.	3 042.30
D6940		110 x 75 mm	No.	3 741.96
D6950		110 x 110 mm	No.	3 812.38
D6960		160 x 110 mm	No.	5 899.59
D6970		160 x 160 mm	No.	6 655.72
D6980		200 x 110 mm	No.	7 446.72

D6990		200 x 160 mm	No.	8 813.21
D7000		200 x 200 mm	No.	10 097.25
D7010		250 x 110 mm	No.	11 565.05
D7020		250 x 160 mm	No.	14 253.98
D7030		250 x 200 mm	No.	15 854.56
D7040		250 x 250 mm	No.	15 275.10
D7050		300 x 110 mm	No.	14 968.69
D7060		300 x 160 mm	No.	16 458.73
D7070		300 x 200 mm	No.	17 392.36
D7080		300 x 250 mm	No.	18 418.31
D7090		300 x 300 mm	No.	18 948.27
D7100		350 x 110 mm	No.	20 411.97
D7110		350 x 160 mm	No.	20 598.12
D7120		350 x 200 mm	No.	22 677.22
D7130		350 x 250 mm	No.	22 918.49
D7140		350 x 300 mm	No.	23 157.11
D7150		350 x 350 mm	No.	26 700.91
D7160		400 x 110 mm	No.	21 376.65
D7170		400 x 160 mm	No.	25 525.68
D7180		400 x 200 mm	No.	26 879.71
D7190		400 x 250 mm	No.	28 288.18
D7200		400 x 300 mm	No.	29 413.70
D7210		400 x 350 mm	No.	30 233.58
D7220		400 x 400 mm	No.	30 901.68
D7230		450 x 110 mm	No.	32 010.78
D7240		450 x 160 mm	No.	32 830.88
D7250		450 x 200 mm	No.	33 587.72
D7260		450 x 250 mm	No.	33 777.90
D7270		450 x 300 mm	No.	34 298.13
D7280		450 x 350 mm	No.	35 618.33
D7290		450 x 400 mm	No.	34 945.48
D7300		450 x 450 mm	No.	36 872.56
D7310		500 x 110 mm	No.	45 378.58
D7320		500 x 160 mm	No.	46 225.78
D7330		500 x 200 mm	No.	46 473.63
D7340		500 x 250 mm	No.	48 193.18
D7350		500 x 300 mm	No.	48 936.54
D7360		500 x 350 mm	No.	49 453.78
D7370		500 x 400 mm	No.	50 040.97
D7380		500 x 450 mm	No.	50 874.25
D7390		500 x 500 mm	No.	56 816.97
		HYDRANT TEES: Double socket tees with with 100mm diameter flanged branch (Ductile Iron PN 16)		
D7400		110 mm diam.	No.	1 319.53
D7410		160 mm diam.	No.	1 979.30
D7420		200 mm diam.	No.	3 389.13
D7430		250 mm diam.	No.	3 366.79
D7440		300 mm diam.	No.	5 388.11

		HYDRANT TEES: Double plain ended tees with with 100mm diameter flanged branch (Type 1: Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent) inclusive of ranger couplings		
D7490		110 mm diam.	No.	4 531.50
D7500		160 mm diam.	No.	6 868.80
D7510		200 mm diam.	No.	7 493.66
D7520		250 mm diam.	No.	12 313.74
D7530		300 mm diam.	No.	14 347.99
D7540		350 mm diam.	No.	19 215.59
D7550		400 mm diam.	No.	24 462.06
D7560		450 mm diam.	No.	30 905.98
D7570		500 mm diam.	No.	39 882.48
		HYDRANT TEES: Double plain ended tees with with 100mm diameter flanged branch (Type 2: Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent) inclusive of ranger couplings		
D7580		110 mm diam.	No.	4 873.50
D7590		160 mm diam.	No.	7 363.80
D7600		200 mm diam.	No.	9 507.16
D7610		250 mm diam.	No.	13 693.44
D7620		300 mm diam.	No.	15 756.49
D7630		350 mm diam.	No.	20 840.09
D7640		400 mm diam.	No.	26 554.56
D7650		450 mm diam.	No.	34 033.48
D7660		500 mm diam.	No.	38 743.98
		HYDRANT TEES: All flanged tees with with 100mm diameter branch (Ductile Iron PN 16)		
D7670		110 mm diam.	No.	3 625.50
D7680		160 mm diam.	No.	5 534.80
D7690		200 mm diam.	No.	6 911.66
D7700		250 mm diam.	No.	11 943.56
D7710		300 mm diam.	No.	13 355.31
D7720		350 mm diam.	No.	16 319.15
D7730		400 mm diam.	No.	19 967.02
D7740		450 mm diam.	No.	27 735.37
D7750		500 mm diam.	No.	40 840.66
		HYDRANT TEES: All flanged tees with with 100mm diameter branch (Type 1: Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent)		
D7760		110 mm diam.	No.	3 370.07
D7770		160 mm diam.	No.	5 475.80
D7780		200 mm diam.	No.	7 045.18
D7790		250 mm diam.	No.	12 206.28
D7800		300 mm diam.	No.	13 753.13
D7810		350 mm diam.	No.	16 506.24
D7820		400 mm diam.	No.	20 157.81
D7830		450 mm diam.	No.	28 871.58
D7840		500 mm diam.	No.	42 334.98

		HYDRANT TEES: All flanged tees with with 100mm diameter branch (Type 2: Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent)		
D7850		110 mm diam.	No.	3 839.57
D7860		160 mm diam.	No.	6 155.34
D7870		200 mm diam.	No.	8 052.13
D7880		250 mm diam.	No.	14 100.33
D7890		300 mm diam.	No.	15 996.25
D7900		350 mm diam.	No.	18 475.94
D7910		400 mm diam.	No.	24 061.56
D7920		450 mm diam.	No.	34 132.63
D7930		500 mm diam.	No.	45 183.98
		HYDRANT TEES: All flanged tees with with 100mm diameter branch (Type 3: Mild Steel with Cement lining and concrete sheating or equivalent)		
D7940		110 mm diam.	No.	3 184.74
D7950		160 mm diam.	No.	5 228.70
D7960		200 mm diam.	No.	6 798.07
D7970		250 mm diam.	No.	12 033.31
D7980		300 mm diam.	No.	13 511.13
D7990		350 mm diam.	No.	16 154.39
D8000		400 mm diam.	No.	17 898.16
D8010		450 mm diam.	No.	20 691.98
D8020		500 mm diam.	No.	40 124.98
		CROSSES: All plain ended (Type 1: Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent) inclusive of ranger couplings		
D8500		75 x 75 mm	No.	6 668.04
D8510		110 x 75 mm	No.	7 054.47
D8520		110 x 110 mm	No.	8 272.87
D8530		160 x 110 mm	No.	11 799.88
D8540		160 x 160 mm	No.	12 952.81
D8550		200 x 110 mm	No.	13 618.67
D8560		200 x 160 mm	No.	15 160.31
D8570		200 x 200 mm	No.	15 797.57
D8580		250 x 110 mm	No.	16 709.39
D8590		250 x 160 mm	No.	18 757.78
D8600		250 x 200 mm	No.	20 083.39
D8610		250 x 250 mm	No.	21 872.59
D8620		300 x 110 mm	No.	20 269.24
D8630		300 x 160 mm	No.	21 841.35
D8640		300 x 200 mm	No.	22 790.19
D8650		300 x 250 mm	No.	25 081.68
D8660		300 x 300 mm	No.	26 881.79
D8670		350 x 110 mm	No.	25 393.74
D8680		350 x 160 mm	No.	26 338.59
D8690		350 x 200 mm	No.	27 716.72
D8700		350 x 250 mm	No.	29 988.92
D8710		350 x 300 mm	No.	31 446.99
D8720		350 x 350 mm	No.	35 505.89
D8730		400 x 110 mm	No.	30 808.06

D8740		400 x 160 mm	No.	33 111.08
D8750		400 x 200 mm	No.	34 379.84
D8760		400 x 250 mm	No.	37 029.31
D8770		400 x 300 mm	No.	38 481.30
D8780		400 x 350 mm	No.	40 715.28
D8790		400 x 400 mm	No.	44 378.68
D8800		450 x 110 mm	No.	37 159.18
D8810		450 x 160 mm	No.	39 276.68
D8820		450 x 200 mm	No.	39 634.62
D8830		450 x 250 mm	No.	42 170.23
D8840		450 x 300 mm	No.	44 074.08
D8850		450 x 350 mm	No.	45 931.08
D8860		450 x 400 mm	No.	49 760.11
D8870		450 x 450 mm	No.	52 069.26
D8880		500 x 110 mm	No.	48 466.23
D8890		500 x 160 mm	No.	50 483.22
D8900		500 x 200 mm	No.	50 761.83
D8910		500 x 250 mm	No.	54 212.51
D8920		500 x 300 mm	No.	56 685.53
D8930		500 x 350 mm	No.	60 843.29
D8940		500 x 400 mm	No.	65 092.61
D8950		500 x 450 mm	No.	68 143.18
D8960		500 x 500 mm	No.	75 710.68
		CROSSES: All plain ended (Type 2: Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent) inclusive of ranger couplings		
D8970		75 x 75 mm	No.	8 285.59
D8980		110 x 75 mm	No.	8 687.62
D8990		110 x 110 mm	No.	9 779.52
D9000		160 x 110 mm	No.	13 725.93
D9010		160 x 160 mm	No.	14 734.87
D9020		200 x 110 mm	No.	15 854.30
D9030		200 x 160 mm	No.	17 647.97
D9040		200 x 200 mm	No.	18 579.17
D9050		250 x 110 mm	No.	20 075.39
D9060		250 x 160 mm	No.	21 871.33
D9070		250 x 200 mm	No.	23 240.14
D9080		250 x 250 mm	No.	23 733.64
D9090		300 x 110 mm	No.	24 845.89
D9100		300 x 160 mm	No.	26 512.54
D9110		300 x 200 mm	No.	27 097.59
D9120		300 x 250 mm	No.	29 629.94
D9130		300 x 300 mm	No.	31 067.08
D9140		350 x 110 mm	No.	30 482.70
D9150		350 x 160 mm	No.	31 661.82
D9160		350 x 200 mm	No.	32 887.26
D9170		350 x 250 mm	No.	34 945.88
D9180		350 x 300 mm	No.	37 044.61
D9190		350 x 350 mm	No.	40 225.79
D9200		400 x 110 mm	No.	37 422.46

D9210		400 x 160 mm	No.	39 424.57
D9220		400 x 200 mm	No.	40 073.61
D9230		400 x 250 mm	No.	43 332.91
D9240		400 x 300 mm	No.	44 397.18
D9250		400 x 350 mm	No.	46 505.14
D9260		400 x 400 mm	No.	48 115.53
D9270		450 x 110 mm	No.	41 515.18
D9280		450 x 160 mm	No.	43 434.68
D9290		450 x 200 mm	No.	43 732.23
D9300		450 x 250 mm	No.	46 134.19
D9310		450 x 300 mm	No.	48 923.98
D9320		450 x 350 mm	No.	52 648.12
D9330		450 x 400 mm	No.	55 599.17
D9340		450 x 450 mm	No.	58 686.48
D9350		500 x 110 mm	No.	53 004.17
D9360		500 x 160 mm	No.	55 909.62
D9370		500 x 200 mm	No.	56 955.49
D9380		500 x 250 mm	No.	59 910.23
D9390		500 x 300 mm	No.	62 351.00
D9400		500 x 350 mm	No.	67 817.27
D9410		500 x 400 mm	No.	72 111.61
D9420		500 x 450 mm	No.	74 102.41
D9430		500 x 500 mm	No.	79 370.17
		CROSSES: All flanged ends (Type 1: Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent) with stainless steel bolts and nuts		
D9440		75 x 75 mm	No.	5 138.76
D9450		110 x 75 mm	No.	5 160.59
D9460		110 x 110 mm	No.	5 748.69
D9470		160 x 110 mm	No.	9 027.14
D9480		160 x 160 mm	No.	10 160.11
D9490		200 x 110 mm	No.	11 039.12
D9500		200 x 160 mm	No.	12 221.51
D9510		200 x 200 mm	No.	13 206.22
D9520		250 x 110 mm	No.	13 361.70
D9530		250 x 160 mm	No.	14 827.26
D9540		250 x 200 mm	No.	16 146.56
D9550		250 x 250 mm	No.	18 419.92
D9560		300 x 110 mm	No.	17 620.72
D9570		300 x 160 mm	No.	18 811.76
D9580		300 x 200 mm	No.	19 973.15
D9590		300 x 250 mm	No.	21 622.57
D9600		300 x 300 mm	No.	22 773.35
D9610		350 x 110 mm	No.	22 000.16
D9620		350 x 160 mm	No.	23 138.07
D9630		350 x 200 mm	No.	24 345.17
D9640		350 x 250 mm	No.	25 962.12
D9650		350 x 300 mm	No.	27 210.34
D9660		350 x 350 mm	No.	29 949.29
D9670		400 x 110 mm	No.	28 276.08

D9680		400 x 160 mm	No.	28 839.86
D9690		400 x 200 mm	No.	30 233.56
D9700		400 x 250 mm	No.	31 933.06
D9710		400 x 300 mm	No.	31 891.34
D9720		400 x 350 mm	No.	32 995.98
D9730		400 x 400 mm	No.	34 861.48
D9740		450 x 110 mm	No.	34 876.15
D9750		450 x 160 mm	No.	35 993.46
D9760		450 x 200 mm	No.	36 855.80
D9770		450 x 250 mm	No.	37 848.87
D9780		450 x 300 mm	No.	37 492.98
D9790		450 x 350 mm	No.	39 371.58
D9800		450 x 400 mm	No.	40 819.98
D9810		450 x 450 mm	No.	42 151.72
D9820		500 x 110 mm	No.	48 878.28
D9830		500 x 160 mm	No.	50 035.96
D9840		500 x 200 mm	No.	51 070.09
D9850		500 x 250 mm	No.	53 150.26
D9860		500 x 300 mm	No.	54 184.62
D9870		500 x 350 mm	No.	54 997.03
D9880		500 x 400 mm	No.	58 491.78
D9890		500 x 450 mm	No.	61 640.91
D9900		500 x 500 mm	No.	66 834.93
		CROSSES: All flanged ends (Type 2: Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent) with stainless steel bolts and nuts		
D9910		75 x 75 mm	No.	7 548.02
D9920		110 x 75 mm	No.	7 569.85
D9930		110 x 110 mm	No.	8 503.90
D9940		160 x 110 mm	No.	12 505.12
D9950		160 x 160 mm	No.	13 693.69
D9960		200 x 110 mm	No.	15 344.91
D9970		200 x 160 mm	No.	16 675.56
D9980		200 x 200 mm	No.	17 839.42
D9990		250 x 110 mm	No.	17 562.47
D10000		250 x 160 mm	No.	18 712.97
D10010		250 x 200 mm	No.	19 914.90
D10020		250 x 250 mm	No.	21 632.27
D10030		300 x 110 mm	No.	22 643.10
D10040		300 x 160 mm	No.	23 936.69
D10050		300 x 200 mm	No.	25 094.38
D10060		300 x 250 mm	No.	26 946.66
D10070		300 x 300 mm	No.	28 060.66
D10080		350 x 110 mm	No.	27 925.71
D10090		350 x 160 mm	No.	29 111.81
D10100		350 x 200 mm	No.	30 137.37
D10110		350 x 250 mm	No.	31 380.32
D10120		350 x 300 mm	No.	33 686.80
D10130		350 x 350 mm	No.	36 161.01
D10140		400 x 110 mm	No.	34 938.88

D10150		400 x 160 mm	No.	35 695.56
D10160		400 x 200 mm	No.	37 024.76
D10170		400 x 250 mm	No.	39 082.31
D10180		400 x 300 mm	No.	39 421.66
D10190		400 x 350 mm	No.	41 422.58
D10200		400 x 400 mm	No.	43 491.33
D10210		450 x 110 mm	No.	40 312.44
D10220		450 x 160 mm	No.	41 624.56
D10230		450 x 200 mm	No.	42 720.47
D10240		450 x 250 mm	No.	43 308.73
D10250		450 x 300 mm	No.	44 733.38
D10260		450 x 350 mm	No.	46 489.13
D10270		450 x 400 mm	No.	48 843.37
D10280		450 x 450 mm	No.	50 015.18
D10290		500 x 110 mm	No.	53 920.43
D10300		500 x 160 mm	No.	56 065.30
D10310		500 x 200 mm	No.	57 951.94
D10320		500 x 250 mm	No.	59 712.55
D10330		500 x 300 mm	No.	59 863.78
D10340		500 x 350 mm	No.	62 369.66
D10350		500 x 400 mm	No.	65 825.23
D10360		500 x 450 mm	No.	67 964.14
D10370		500 x 500 mm	No.	73 224.18
		CROSSES: All flanged ends (Type 3: Mild Steel with Cement lining and concrete sheating or equivalent) with stainless steel bolts and nuts		
D10380		75 x 75 mm	No.	3 903.24
D10390		110 x 75 mm	No.	4 862.55
D10400		110 x 110 mm	No.	5 872.25
D10410		160 x 110 mm	No.	9 737.56
D10420		160 x 160 mm	No.	10 612.31
D10430		200 x 110 mm	No.	11 884.22
D10440		200 x 160 mm	No.	14 617.19
D10450		200 x 200 mm	No.	15 961.43
D10460		250 x 110 mm	No.	17 438.91
D10470		250 x 160 mm	No.	18 712.97
D10480		250 x 200 mm	No.	19 914.90
D10490		250 x 250 mm	No.	22 787.48
D10500		300 x 110 mm	No.	21 073.99
D10510		300 x 160 mm	No.	22 812.37
D10520		300 x 200 mm	No.	24 502.56
D10530		300 x 250 mm	No.	26 787.04
D10540		300 x 300 mm	No.	28 740.73
D10550		350 x 110 mm	No.	26 102.08
D10560		350 x 160 mm	No.	27 962.78
D10570		350 x 200 mm	No.	29 781.46
D10580		350 x 250 mm	No.	32 215.44
D10590		350 x 300 mm	No.	34 233.73
D10600		350 x 350 mm	No.	36 271.21
D10610		400 x 110 mm	No.	31 652.16

D10620		400 x 160 mm	No.	33 220.12
D10630		400 x 200 mm	No.	35 023.60
D10640		400 x 250 mm	No.	37 387.96
D10650		400 x 300 mm	No.	37 630.74
D10660		400 x 350 mm	No.	38 935.68
D10670		400 x 400 mm	No.	39 455.58
D10680		450 x 110 mm	No.	36 456.38
D10690		450 x 160 mm	No.	38 532.05
D10700		450 x 200 mm	No.	39 277.70
D10710		450 x 250 mm	No.	40 436.38
D10720		450 x 300 mm	No.	40 674.73
D10730		450 x 350 mm	No.	41 707.69
D10740		450 x 400 mm	No.	42 878.99
D10750		450 x 450 mm	No.	44 928.66
D10760		500 x 110 mm	No.	48 839.98
D10770		500 x 160 mm	No.	50 997.19
D10780		500 x 200 mm	No.	53 127.23
D10790		500 x 250 mm	No.	55 877.50
D10800		500 x 300 mm	No.	57 676.68
D10810		500 x 350 mm	No.	59 604.49
D10820		500 x 400 mm	No.	62 547.38
D10830		500 x 450 mm	No.	64 492.42
D10840		500 x 500 mm	No.	68 154.98
		REDUCERS: All socket ends (Ductile Iron PN 16)		
D10850		110 x 75 mm diam.	No.	576.37
D10860		160 x 75 mm diam.	No.	1 001.38
D10870		160 x 110 mm diam.	No.	947.64
D10880		200 x 110 mm diam.	No.	1 525.87
D10890		200 x 160 mm diam.	No.	1 933.59
D10900		250 x 160 mm diam.	No.	1 957.07
D10910		250 x 200 mm diam.	No.	2 233.82
D10920		300 x 160 mm diam.	No.	3 749.80
D10930		300 x 200 mm diam.	No.	3 490.35
D10940		300 x 250 mm diam.	No.	3 989.49
		REDUCERS: All plain ended (Type 1: Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent) inclusive of ranger couplings with stainless steel bolts and nuts		
D11110		110 x 75 mm diam.	No.	3 306.51
D11120		160 x 75 mm diam.	No.	4 229.01
D11130		160 x 110 mm diam.	No.	5 526.20
D11140		200 x 110 mm diam.	No.	6 604.03
D11150		200 x 160 mm diam.	No.	7 728.05
D11160		250 x 160 mm diam.	No.	9 543.65
D11170		250 x 200 mm diam.	No.	10 026.33
D11180		300 x 160 mm diam.	No.	11 208.73
D11190		300 x 200 mm diam.	No.	12 204.69
D11200		300 x 250 mm diam.	No.	13 531.40
D11210		350 x 200 mm diam.	No.	14 413.21
D11220		350 x 250 mm diam.	No.	16 793.76
D11230		350 x 300 mm diam.	No.	18 266.18

D11240		400 x 200 mm diam.	No.	20 548.04
D11250		400 x 250 mm diam.	No.	24 446.27
D11260		400 x 300 mm diam.	No.	23 204.83
D11270		400 x 350 mm diam.	No.	26 739.69
D11280		450 x 250 mm diam.	No.	27 375.05
D11290		450 x 300 mm diam.	No.	30 447.99
D11300		450 x 350 mm diam.	No.	33 724.12
D11310		450 x 400 mm diam.	No.	36 709.55
D11320		500 x 250 mm diam.	No.	41 346.00
D11330		500 x 300 mm diam.	No.	43 086.23
D11340		500 x 350 mm diam.	No.	45 894.08
D11350		500 x 400 mm diam.	No.	48 687.21
D11360		500 x 450 mm diam.	No.	49 896.66
		REDUCERS: All plain ended (Type 2: Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent) inclusive of ranger couplings with stainless steel bolts and nuts		
D11370		110 x 75 mm diam.	No.	3 448.74
D11380		160 x 75 mm diam.	No.	4 560.21
D11390		160 x 110 mm diam.	No.	5 040.93
D11400		200 x 110 mm diam.	No.	6 562.65
D11410		200 x 160 mm diam.	No.	7 724.04
D11420		250 x 160 mm diam.	No.	9 539.31
D11430		250 x 200 mm diam.	No.	10 176.23
D11440		300 x 160 mm diam.	No.	10 908.74
D11450		300 x 200 mm diam.	No.	11 689.23
D11460		300 x 250 mm diam.	No.	13 124.91
D11470		350 x 200 mm diam.	No.	14 078.84
D11480		350 x 250 mm diam.	No.	16 722.28
D11490		350 x 300 mm diam.	No.	17 939.24
D11500		400 x 200 mm diam.	No.	20 017.24
D11510		400 x 250 mm diam.	No.	22 637.16
D11520		400 x 300 mm diam.	No.	22 925.60
D11530		400 x 350 mm diam.	No.	26 318.38
D11540		450 x 250 mm diam.	No.	24 529.80
D11550		450 x 300 mm diam.	No.	25 949.99
D11560		450 x 350 mm diam.	No.	29 704.12
D11570		450 x 400 mm diam.	No.	32 867.42
D11580		500 x 250 mm diam.	No.	32 698.23
D11590		500 x 300 mm diam.	No.	34 218.29
D11600		500 x 350 mm diam.	No.	36 884.91
D11610		500 x 400 mm diam.	No.	36 848.08
D11620		500 x 450 mm diam.	No.	40 474.95
		REDUCERS: Double Flanged (Ductile Iron PN 16) with stainless steel bolts and nuts		
D11630		110 x 75 mm diam.	No.	2 517.68
D11640		160 x 75 mm diam.	No.	3 271.86
D11650		160 x 110 mm diam.	No.	4 445.22
D11660		200 x 110 mm diam.	No.	4 330.07
D11670		200 x 160 mm diam.	No.	5 078.79
D11680		250 x 160 mm diam.	No.	6 331.90

D11690		250 x 200 mm diam.	No.	7 401.87
D11700		300 x 160 mm diam.	No.	8 759.70
D11710		300 x 200 mm diam.	No.	8 662.21
D11720		300 x 250 mm diam.	No.	9 496.18
D11730		350 x 200 mm diam.	No.	10 786.33
D11740		350 x 250 mm diam.	No.	12 339.38
D11750		350 x 300 mm diam.	No.	13 614.78
D11760		400 x 200 mm diam.	No.	16 991.45
D11770		400 x 250 mm diam.	No.	19 141.26
D11780		400 x 300 mm diam.	No.	19 037.91
D11790		400 x 350 mm diam.	No.	21 791.89
D11800		450 x 250 mm diam.	No.	20 671.27
D11810		450 x 300 mm diam.	No.	21 823.35
D11820		450 x 350 mm diam.	No.	24 613.16
D11830		450 x 400 mm diam.	No.	28 594.00
D11840		500 x 250 mm diam.	No.	32 921.61
D11850		500 x 300 mm diam.	No.	34 192.96
D11860		500 x 350 mm diam.	No.	35 774.43
D11870		500 x 400 mm diam.	No.	36 182.14
D11880		500 x 450 mm diam.	No.	39 645.30
		REDUCERS: Double Flanged (Type 1: Mild Steel hot dipped galvanized with Plascoat or Carboline coating or equivalent) with stainless steel bolts and nuts		
D11890		110 x 75 mm diam.	No.	2 215.80
D11900		160 x 75 mm diam.	No.	3 179.45
D11910		160 x 110 mm diam.	No.	4 059.14
D11920		200 x 110 mm diam.	No.	5 621.19
D11930		200 x 160 mm diam.	No.	6 549.06
D11940		250 x 160 mm diam.	No.	8 154.30
D11950		250 x 200 mm diam.	No.	9 147.65
D11960		300 x 160 mm diam.	No.	10 266.99
D11970		300 x 200 mm diam.	No.	10 862.67
D11980		300 x 250 mm diam.	No.	11 757.19
D11990		350 x 200 mm diam.	No.	13 421.70
D12000		350 x 250 mm diam.	No.	15 415.83
D12010		350 x 300 mm diam.	No.	16 909.91
D12020		400 x 200 mm diam.	No.	21 538.16
D12030		400 x 250 mm diam.	No.	24 444.11
D12040		400 x 300 mm diam.	No.	23 522.14
D12050		400 x 350 mm diam.	No.	26 393.85
D12060		450 x 250 mm diam.	No.	26 626.48
D12070		450 x 300 mm diam.	No.	29 607.13
D12080		450 x 350 mm diam.	No.	32 170.83
D12090		450 x 400 mm diam.	No.	36 231.99
D12100		500 x 250 mm diam.	No.	42 530.25
D12110		500 x 300 mm diam.	No.	44 046.23
D12120		500 x 350 mm diam.	No.	45 784.61
D12130		500 x 400 mm diam.	No.	49 336.72
D12140		500 x 450 mm diam.	No.	50 113.86

		REDUCERS: Double Flanged (Type 2: Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent) with stainless steel bolts and nuts		
D12150		110 x 75 mm diam.	No.	3 552.57
D12160		160 x 75 mm diam.	No.	4 311.18
D12170		160 x 110 mm diam.	No.	5 314.98
D12180		200 x 110 mm diam.	No.	4 330.07
D12190		200 x 160 mm diam.	No.	5 078.79
D12200		250 x 160 mm diam.	No.	6 331.90
D12210		250 x 200 mm diam.	No.	7 401.87
D12220		300 x 160 mm diam.	No.	8 759.70
D12230		300 x 200 mm diam.	No.	8 662.21
D12240		300 x 250 mm diam.	No.	9 496.18
D12250		350 x 200 mm diam.	No.	10 786.33
D12260		350 x 250 mm diam.	No.	12 339.38
D12270		350 x 300 mm diam.	No.	13 614.78
D12280		400 x 200 mm diam.	No.	16 991.45
D12290		400 x 250 mm diam.	No.	19 141.26
D12300		400 x 300 mm diam.	No.	19 037.91
D12310		400 x 350 mm diam.	No.	21 791.89
D12320		450 x 250 mm diam.	No.	20 671.27
D12330		450 x 300 mm diam.	No.	21 823.35
D12340		450 x 350 mm diam.	No.	24 613.16
D12350		450 x 400 mm diam.	No.	28 594.00
D12360		500 x 250 mm diam.	No.	32 921.61
D12370		500 x 300 mm diam.	No.	34 192.96
D12380		500 x 350 mm diam.	No.	35 774.43
D12390		500 x 400 mm diam.	No.	36 182.14
D12400		500 x 450 mm diam.	No.	39 654.30
		REDUCERS: Double Flanged (Type 3: Mild Steel with Cement lining and concrete sheating or equivalent) with stainless steel bolts and nuts		
D12410		110 x 75 mm diam.	No.	2 191.09
D12420		160 x 75 mm diam.	No.	3 086.78
D12430		160 x 110 mm diam.	No.	3 293.11
D12440		200 x 110 mm diam.	No.	4 527.75
D12450		200 x 160 mm diam.	No.	5 329.60
D12460		250 x 160 mm diam.	No.	6 681.56
D12470		250 x 200 mm diam.	No.	7 514.30
D12480		300 x 160 mm diam.	No.	8 228.31
D12490		300 x 200 mm diam.	No.	8 968.62
D12500		300 x 250 mm diam.	No.	9 814.95
D12510		350 x 200 mm diam.	No.	11 156.99
D12520		350 x 250 mm diam.	No.	12 771.81
D12530		350 x 300 mm diam.	No.	13 352.33
D12540		400 x 200 mm diam.	No.	16 717.25
D12550		400 x 250 mm diam.	No.	19 010.28
D12560		400 x 300 mm diam.	No.	18 375.63
D12570		400 x 350 mm diam.	No.	21 062.03
D12580		450 x 250 mm diam.	No.	21 507.72
D12590		450 x 300 mm diam.	No.	23 861.96

D12600		450 x 350 mm diam.	No.	26 043.89
D12610		450 x 400 mm diam.	No.	29 666.44
D12620		500 x 250 mm diam.	No.	34 270.80
D12630		500 x 300 mm diam.	No.	35 576.74
D12640		500 x 350 mm diam.	No.	37 180.45
D12650		500 x 400 mm diam.	No.	40 494.10
D12660		500 x 450 mm diam.	No.	41 115.57
		END CAPS (Ductile Iron PN 16)		
D12670		75 mm diam.	No.	238.45
D12680		90 mm diam.	No.	328.65
D12690		110 mm diam.	No.	404.01
D12700		160 mm diam.	No.	724.02
D12710		200 mm diam.	No.	1 102.08
D12720		250 mm diam.	No.	1 920.00
D12730		300 mm diam.	No.	2 614.36
D12740		350 mm diam.	No.	3 909.18
D12750		400 mm diam.	No.	5 204.01
D12760		450 mm diam.	No.	6 498.84
D12770		500 mm diam.	No.	7 793.66
		FLANGED ADAPTER (1 Socket, 1 Flange end)		
		Ductile iron flanged socket adapter (PN16) for PVC pipes		
D12780		75 mm diam.	No.	433.67
D12790		90 mm diam.	No.	497.91
D12800		110 mm diam.	No.	579.46
D12810		160 mm diam.	No.	1 021.78
D12820		200 mm diam.	No.	1 565.40
D12830		250 mm diam.	No.	2 231.35
D12840		300 mm diam.	No.	3 758.46
		Mild Steel flanged socket adaptor with corrosion protection (PN25)		
D12890		75 mm diam.	No.	1 474.79
D12900		90 mm diam.	No.	1 675.59
D12910		110 mm diam.	No.	1 791.93
D12920		160 mm diam.	No.	2 816.75
D12930		200 mm diam.	No.	3 711.91
D12940		250 mm diam.	No.	5 731.09
D12950		300 mm diam.	No.	7 330.07
D12960		350 mm diam.	No.	10 985.01
D12970		400 mm diam.	No.	12 942.07
D12980		450 mm diam.	No.	15 508.25
D12990		500 mm diam.	No.	18 683.54
		FLANGED SPIGOT (1 Spigot, 1 Flange end)		
		Ductile iron flanged spigot (PN 16) for PVC pipes		
D13000		75 mm diam.	No.	437.37
D13010		90 mm diam.	No.	501.62
D13020		110 mm diam.	No.	584.40
D13030		160 mm diam.	No.	1 032.90
D13040		200 mm diam.	No.	1 581.47
D13050		250 mm diam.	No.	2 249.88
D13060		300 mm diam.	No.	3 793.05

D13070		350 mm diam.	No.	5 677.21
D13080		400 mm diam.	No.	7 561.38
D13090		450 mm diam.	No.	9 445.55
D13100		500 mm diam.	No.	11 329.72
		Mild Steel flanged spigot (PN 25) with corrosion protection (1 Spigot, 1 Flange end)		
D13110		75 mm diam.	No.	1 749.50
D13120		90 mm diam.	No.	2 067.02
D13130		110 mm diam.	No.	2 067.02
D13140		160 mm diam.	No.	3 249.42
D13150		200 mm diam.	No.	4 166.17
D13160		250 mm diam.	No.	6 433.35
D13170		300 mm diam.	No.	8 228.57
D13180		350 mm diam.	No.	10 985.01
D13190		400 mm diam.	No.	12 942.07
D13200		450 mm diam.	No.	15 508.25
D13210		500 mm diam.	No.	18 683.54
		RANGER COUPLINGS		
D13220		50mm diameter	No.	1 014.36
D13230		80mm diameter	No.	1 150.27
D13240		110mm diameter	No.	1 595.06
D13250		160mm diameter	No.	2 540.23
D13260		200mm diameter	No.	3 037.71
D13270		250mm diameter	No.	3 984.55
D13280		300mm diameter	No.	5 102.70
D13290		350mm diameter	No.	6 994.99
D13300		400mm diameter	No.	9 439.37
D13310		450mm diameter	No.	10 186.86
D13320		500mm diameter	No.	12 046.32
		FLANGED RANGER COUPLINGS		
D13330		50mm diameter	No.	1 490.04
D13340		80mm diameter	No.	2 018.84
D13350		110mm diameter	No.	1 819.92
D13360		160mm diameter	No.	2 265.95
D13370		200mm diameter	No.	2 393.20
D13380		250mm diameter	No.	3 480.46
D13390		300mm diameter	No.	6 164.01
D13400		350mm diameter	No.	6 056.52
D13410		400mm diameter	No.	7 526.79
D13420		450mm diameter	No.	8 538.68
D13430		500mm diameter	No.	10 419.14
		HDPE PE100 PN 16 stub only		
D13440		50mm diameter	No.	147.86
D13450		80mm diameter	No.	185.47
D13460		110mm diameter	No.	218.34
D13470		160mm diameter	No.	335.36
D13480		200mm diameter	No.	412.13
D13490		250mm diameter	No.	531.90
D13500		300mm diameter	No.	824.40
D13510		350mm in diameter	No.	1 053.27

D13520		400mm diameter	No.	1 295.28
D13530		450mm in diameter	No.	1 564.09
D13540		500mm diameter	No.	1 912.32
		Stainless steel backing ring including all fittings (stainless steel nuts, bolts and washers) only for use with HDPE PE100 PN 16 stub		
D13550		50mm diameter	No.	555.98
D13560		80mm diameter	No.	926.64
D13570		110mm diameter	No.	1 062.55
D13580		160mm diameter	No.	1 927.41
D13590		200mm diameter	No.	3 595.36
D13600		250mm diameter	No.	4 596.13
D13610		300mm diameter	No.	6 325.86
D13620		350mm in diameter	No.	8 772.19
D13630		400mm diameter	No.	13 108.87
D13640		450mm in diameter	No.	16 080.29
D13650		500mm diameter	No.	19 811.56
		VALVES, FLOW METER, ETC.		
	8.2.3	Supply of Valve (left-hand closing, non- rising spindle, with cap top)		
		Double Flanged Resilient Seal Gate Valve		
D13660		a) 80 mm diam.	No.	4 429.34
D13670		b) 110 mm diam.	No.	5 034.74
D13680		c) 160 mm diam.	No.	7 956.75
D13690		d) 200 mm diam.	No.	12 933.42
D13700		e) 250 mm diam.	No.	23 684.92
D13710		f) 300 mm diam.	No.	32 877.19
D13720		g) 350 mm diam.	No.	52 633.15
D13730		h) 400 mm diam.	No.	50 508.06
D13740		i) 450 mm diam.	No.	168 376.67
D13750		j) 500 mm diam.	No.	176 753.49
	8.2.3	Supply of Valve (left-hand closing, non- rising spindle, with cap top)		
		Sock-ended Resilient Seal Gate Valve		
D13760		a) 80 mm diam.	No.	3 972.20
D13770		b) 110 mm diam.	No.	4 336.68
D13780		c) 160 mm diam.	No.	7 715.82
D13790		d) 200 mm diam.	No.	11 737.44
D13800		e) 250 mm diam.	No.	22 999.20
D13810		f) 300 mm diam.	No.	35 249.39
	PS-TD 1	Installation of new valve, joint, incl cut pipes where necessary and test		
D13820		80mm or 100mm or 150mm in diameter	No.	3 458.61
D13822		200mm or 250mm or 300mm in diameter	No.	7 264.74
D13824		350mm or 400mm or 450mm in diameter	No.	14 421.93
D13826		500mm in diameter	No.	23 371.12
	PS-TD 6	Repair leaking valves - Repack gland and operate valve - All sizes		
D13830		80mm or 100mm or 150mm in diameter	No.	3 239.83
D13832		200mm or 250mm or 300mm in diameter	No.	6 950.72
D13834		350mm or 400mm or 450mm in diameter	No.	24 245.99

D13836		500mm in diameter	No.	27 871.82
	PS-TD 3	Remove existing valve on operational water pipeline and return valve to depot		
D13840		80mm or 100mm or 150mm in diameter	No.	3 964.89
D13850		200mm or 250mm or 300mm in diameter	No.	9 045.49
D13860		350mm or 400mm or 450mm in diameter	No.	16 647.86
D13870		500mm in diameter	No.	26 042.23
	PS-TD 5	Provision of Valve Extension Spindles		
D13880		500mm	No.	766.02
D13890		750mm	No.	914.28
D13900		1000mm	No.	1 013.13
D13910		1250mm	No.	1 099.61
D13920		1500mm	No.	1 161.39
D13930		Remove all refuse, rubble, sand, building material, etc from the valve chamber in order to proceed with the removal of the valve	No.	412.10
D13940		Pumping out water in valve chambers to maintain dry condition in valve chamber while work is in progress	No.	544.23
D13950		Extra - over for removal and replacement of valve chamber top cover slab	No.	2 835.87
D13960		Raising or lowering of existing valve covers including top cover slab For diameters up to below 300mm	No.	2 638.17
D13965		Raising or lowering of existing valve covers including top cover slab For diameters 300mm and above	No.	3 315.91
D13970		Plaster and / or waterproof inside of valve chamber to prevent ground water seepage (infiltration)	m^2	245.88
		AIR VALVES		
		Supply Combination Air Valve (air release and vacuum breaker) Class 16 Flanged		
D13980		a) 25 mm diam.	No.	3 644.78
D13990		b) 50 mm diam.	No.	4 713.51
D14000		c) 80 mm diam.	No.	8 030.88
D14010		d) 100 mm diam.	No.	9 945.94
		Installation of Combination Air Valve (Air valve priced separately) complete with saddle and couplings where necessary, joint, include cut pipes if required and test for pipes up to 160mm dia		
D14020		a) 25 mm diam.	No.	2 030.32
D14030		b) 50 mm diam.	No.	4 169.19
		Installation of Combination Air Valve (Air valve priced separately) complete with T-pieces and couplings where necessary, joint, include cut pipes if required and test for pipes 200mm dia and over		
D14040		c) 80 mm diam.	No.	5 476.59
D14050		d) 100 mm diam.	No.	6 846.89
		MAJOR VALVES		
	8.2.3	Supplying of wafer type Butterfly valve		
D14060		a) 350mm diam.	No.	17 884.15
D14070		b) 400mm diam.	No.	31 073.33
D14080		c) 450mm diam.	No.	41 952.08
D14090		d) 500mm diam.	No.	52 559.02

D14100		Installation of wafer type Butterfly valve, joint, fixing, bed incl cut pipes where necessary and test	No.	10 411.02
		VALVE CHAMBERS AND BOXES:		
	8.2.13	Valve chambers and boxes, complete to detail drawings		
		Ductile iron valve boxes with cover and cap (refer to drawing No. W1)		
D14110		a) 100 mm up to 300 mm diam.	No.	3 323.77
D14120		b) Over 300 mm diam.	No.	3 533.81
		Polymer concrete valve boxes with cover and cap (refer to drawing No. W1)		
D14130		a) 100 mm up to 300 mm diam.	No.	3 126.09
D14140		b) Over 300 mm diam.	No.	3 336.13
		Ductile iron valve boxes with cover and cap (refer to drawing No. W4-V-001)		
D14150		a) 100 mm up to 300 mm diam.	No.	3 323.77
D14160		b) Over 300 mm diam.	No.	3 533.81
		Polymer concrete valve boxes with cover and cap (refer to drawing No. W4-V-001)		
D14170		a) 100 mm up to 300 mm diam.	No.	3 126.09
D14180		b) Over 300 mm diam.	No.	3 336.13
D14190		Installation and provision of PVC pipe for access to valve instead of valve chamber or box	No.	849.99
D14200		Air valve boxes with ductile iron cover and cap (refer to drawing No. W3-AV-001)	No.	6 601.25
D14210		Air valve boxes with polymer concrete cover and cap (refer to drawing No. W3-AV-001)	No.	5 362.33
D14220		Air valve boxes with ductile iron cover and cap (refer to drawing No. W3-AV-001) with additional fittings as per Off set air valve details (Pipeline measured separately)	No.	5 632.83
D14230		Air valve boxes with polymer concrete cover and cap (refer to drawing No. W3-AV-001) with additional fittings as per Off set air valve details (Pipeline measured separately)	No.	5 200.40
		FIRE HYDRANTS		
		Underground Fire Hydrants		
D14240		Supply of valve only for off-set hydrant assembly as per specification (refer to Drawing No. W4-F-002, Specials measured separately)	No.	5 034.74
D14250		Supply of 90 degree steel bend and steel extension piece for off-set hydrant assembly (refer to Drawing No. W4-F-002)	No.	3 769.57
D14260		Supply of new underground hydrant only as per specification (refer to Drawing No. W2)	No.	2 866.41
D14270	PS-TB 6	Installation of new underground hydrant complete as per specification (refer to Drawing No. W4-F-002) including all other materials required (Valve, bend and extension piece measured separately) excluding chamber	No.	4 177.16

D14280	PS-TB 6	Installation of new underground hydrant complete as per specification (refer to Drawing No. W2) including all other materials required (FH and tee measured separately) excluding chamber	No.	3 806.22
D14290	PS-TB 7	Remove existing underground hydrant	No.	1 199.11
		Above ground (Pillar Type) Fire Hydrants		
D14300		Supply of new above ground hydrant (pillar type) complete as per specification	No.	8 687.80
D14310	PS-TB 8	Installation of new above ground hydrant (pillar type) complete (FH measured separately) as per specification	No.	2 244.73
D14320	PS-TB 9	Remove existing above ground pillar type hydrant	No.	1 998.51
D14330	PS-TB 10	Supply and installation of new hydrant chamber complete (refer to Drawing No. W4-F-001)	No.	7 969.01
D14340	PS-TB 10	Supply and installation of new hydrant chamber complete with polymer concrete cover and frame (refer to Drawing No. W4-F-001)	No.	7 536.57
D14350	PS-TB 10	Supply and installation of new hydrant chamber complete with heavy duty cover and frame (refer to Drawing No. W2)	No.	3 903.56
D14360	PS-TB 10	Supply and installation of new hydrant chamber complete with polymer concrete heavy duty cover and frame (refer to Drawing No. W2)	No.	3 471.13
D14370	PS-TB 11	Repair leak at underground hydrant - replace washer or jumper etc	No.	2 149.25
D14380		Replace nozzle of fire hydrants	No.	2 011.54
D14390		Repair leaking pillar type hydrant	No.	2 551.37
		Extra-Over for fire hydrant extension flanged pieces greater than 500mm in length (Mild Steel hot dipped galvanized with Plascoat or Carboline coating)		
D14400		a) 750mm long	No.	1 074.90
D14410		b) 1000mm long	No.	1 266.41
D14420		c) 1250mm long	No.	1 368.34
D14430		d) 1500mm long	No.	1 470.27
		Extra-Over for fire hydrant extension flanged pieces greater than 500mm in length (Mild Steel with Corrocoat Polyglass VE corrosion protection or equivalent)		
D14440		a) 750mm long	No.	1 470.27
D14450		b) 1000mm long	No.	1 593.82
D14460		c) 1250mm long	No.	1 884.17
D14470		d) 1500mm long	No.	2 131.27
		Extra-Over for fire hydrant extension flanged pieces greater than 500mm in length (Mild Steel with Cement lining and concrete sheating or equivalent)		
D14480		a) 750mm long	No.	1 967.56
D14490		b) 1000mm long	No.	2 134.36
D14500		c) 1250mm long	No.	2 526.33
D14510		d) 1500mm long	No.	2 859.92
		ANCILLARIES		
	PSL 8.2.11	Anchor/Thrust blocks and pedestals		
D14520		Concrete mix 25/19	m^3	4 244.66

D14530		Marker posts	No.	581.68
	PSL 8.2.17	Kerb Markers		
		Cut kerb face and paint blue, yellow or red depending on region preference to mark hydrants, valves and house connections		
D14540		a) Hydrants	No.	130.55
D14550		b) Valves	No.	130.55
D14560		c) House connections	No.	130.55
		WATER METERS		
	PS-TB 1	Remove existing meter above ground and replace with new meter (above ground meter only) including collection new meter and delivery of old meter at the COCT Depot within 60 km radius from the site (Meter Supplied by Employer)		
D14570		a) 15mm up to 40mm in diameter	No.	868.26
D14580		b) 50mm up to 80mm in diameter	No.	1 530.86
D14590		c) 100mm up to 150mm in diameter	No.	2 420.62
		including 75mm diameter combination meter		
D14600		d) 200mm in diameter	No.	14 963.08
	PS-TB 2	Remove existing meter from below ground and install new meter in existing meter box below ground including collection new meter and delivery of old meter at the COCT Depot within 60 km radius from the site (Meter Supplied by Employer)		
D14610		a) 15mm up to 40mm in diameter	No.	983.38
D14620		b) 50mm up to 80mm in diameter	No.	1 703.54
D14630		c) 100mm up to 150mm in diameter	No.	2 553.74
		including 75mm diameter combination meter		
D14640		d) 200mm in diameter	No.	15 219.31
	PS-TB 3	Remove existing meter and box from below ground and install new meter above ground including collection new meter and delivery of old meter at the COCT Depot within 60 km radius from the site (Meter Supplied by Employer)		
D14650		a) 15mm up to 40mm in diameter	No.	1 391.35
D14660		b) 50mm up to 80mm in diameter	No.	2 326.19
D14670		c) 100mm up to 150mm in diameter	No.	3 431.46
		including 75mm diameter combination meter		
D14680		d) 200mm in diameter	No.	21 555.31
	PS-TB 4	Install new bulk water meter and chamber complete as per specification including all material and specials excluding water meter (refer to drawing W4). The cost includes includes collection of new meter at the COCT Depot and delivery of old meter back at the COCT Depot within 60km radius from site. (Meter Supplied by employer)		
D14690		a) 50mm in diameter	No.	71 986.37
D14700		b) 80mm in diameter	No.	79 444.07
D14710		c) 100mm in diameter	No.	86 204.72
D14720		d) 150mm in diameter	No.	117 141.74
D14730		e) 200mm in diameter	No.	138 834.26
D14740		f) 250mm in diameter	No.	222 559.16
D14750		g) 300mm in diameter	No.	293 460.30

	SANS 1200 LB	BEDDING (PIPES)		
	PSLB 8.2.1	Provision of bedding and selected fill material from trench excavations		
D14760		a) Selected granular material	m³	35.00
D14770		b) Selected fill material	m³	35.00
		Supply only of bedding material by importation		
	PSLB 8.2.2.3	From commercial sources (provisional)		
D14780		a) Selected granular material	m³	495.10
D14790		b) Selected fill material	m³	495.10
D14800		c) 13 mm stone	m³	808.35
D14810		d) 19 mm stone	m³	866.24
	PSLB 8.2.6	Geotextile / Geomembrane wrapped around a crushed stone bedding with 300mm overlay:		
D14820		a) A2 or equivalent approved	m²	39.20
	SANS 1200 LF	ERF CONNECTIONS (WATER)		
	SANS 1200 DB 8.3.2 a)	Excavate in all materials for trenches, backfill and compact, incl. dispose surplus/unsuitable material, for erf connection pipes:		
D14830		Up to 1,0 m deep for 100mm diameters and up	m	282.75
		New connections onto existing watermains by means of Under Pressure Drilling for all pipe diameters including all related bolts, nuts, DZR brass ball valve, saddles and stainless steel straps		
D14840		a) 16mm to 50mm diameter Under Pressure Drilling	No.	4 337.01
D14850		b) 80mm to 100mm Under Pressure Drilling	No.	8 632.98
	SANS 1200 LF	PIPES		
		Lay, bed and joint HDPE PE 100 PN 16 erf connection pipes (ND) dimensions. (Pipes measured separately)		
D14860		a) 16 mm diam.	m	16.12
D14870		b) 20 mm diam.	m	16.12
D14880		c) 25 mm diam.	m	16.12
D14890		d) 28 mm diam.	m	16.12
D14900		e) 32 mm diam.	m	16.12
D14910		f) 40 mm diam.	m	16.12
D14920		g) 50 mm diam.	m	16.12
D14930		h) 63 mm diam.	m	19.49
D14940		i) 75mm diam.	m	19.49
D14950		j) 110mm diam.	m	20.67
		Lay, bed and joint Pex-Aluminium-Pex multi-layer pipe with all inserts and conex brass fittings, SANS 21003-1,2,3 and 5:2008 approved (Pipes measured separately)		
D14960		a) 16 mm diam.	m	35.62
D14970		b) 20 mm diam.	m	38.45
D14980		c) 25 mm diam.	m	45.12
D14990		d) 32 mm diam.	m	51.39
D15000		e) 40 mm diam.	m	57.61

		Lay, bed and joint Pex-Aluminium-Pex multi-layer pipe with all inserts and DZR brass press fittings using a crimp press method (Pipes measured separately)		
D15010		a) 16 mm diam.	m	41.66
D15020		b) 20 mm diam.	m	47.59
D15030		c) 25 mm diam.	m	54.35
D15040		d) 32 mm diam.	m	60.62
D15050		e) 40 mm diam.	m	66.98
		SPECIALS AND FITTINGS		
		Supply, lay and joint specials and fittings for erf connections complete (refer to City of Capetown Drg W3 including DZR brass ball valve)		
		Ductile Iron saddles and specials including corrosion protection (petrolatum tape clingwrapping)		
D15060		a) 110mm dia. to suit	No.	1 587.53
D15070		b) 160mm dia. to suit	No.	1 636.95
D15080		c) 200mm dia. to suit	No.	1 698.73
		Magnum saddles (Polypropylene) and specials including stainless steel bolts and nuts (petrolatum tape clingwrapping)		
D15090		a) 75mm dia. to suit	No.	1 714.21
D15100		b) 110mm dia. to suit	No.	1 900.12
D15110		c) 160mm dia. to suit	No.	2 022.43
		TEMPORARY WATER SUPPLY		
		Supply, installation and protection, on surface, of temporary water supply piping with all fittings, and subsequent removal on completion.		
D15120		a) 25mm diameter	m	54.55
D15130		b) 40mm diameter	m	64.32
D15140		c) 50mm diameter	m	81.38
D15150		d) 75mm diameter	m	132.21
D15160	PSL 8.2.16	Connection to existing Watermain / supply pipe	No.	1 042.76

TENDER NO. 150Q/2024/25

TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

SCHEDULE E: CONCRETE KERBING AND CHANNELLING

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
	SANS 1200 MK	CONCRETE KERBING AND CHANNELLING		
	8.2.1	Precast concrete kerbing (SANS 927:2013):		
		a) Straight:		
E10		i) Mountable kerb to match (CK5)	m	362.64
E20		ii) Mountable kerb to match (MK10)	m	321.11
E30		iii) Barrier Kerb (BK1)	m	312.64
E40		iv) Barrier Kerb (BK2)	m	339.15
E50		v) Barrier Kerb (BK4)	m	387.10
E60		vi) Edging Kerb (E1)	m	178.39
E70		vii) Edging Kerb (E3)	m	259.53
E80		viii) Channel (C1)	m	290.17
E90		ix) V - Channel (2 x C1)	m	580.35
E100		x) Cast-in-situ kerbing (25MPa/19mm concrete)	m	635.48
E110		xi) Combined kerb and infall channel to match existing - (Transition Kerb)	m	559.67
		b) Curved kerbing over 1m up to and including 4m:		
E120		i) Mountable kerb to match (CK5)	m	523.71
E130		ii) Mountable kerb to match (MK10)	m	428.86
E140		iii) Barrier Kerb (BK1)	m	378.21
E150		iv) Barrier Kerb (BK2)	m	397.82
E160		v) Barrier Kerb (BK4)	m	431.63
E170		vi) Edging Kerb (E1)	m	201.86
E180		vii) Edging Kerb (E3)	m	296.68
E190		viii) Channel (C1)	m	384.01
E200		ix) V - Channel (2 x C1)	m	810.02
E210		x) Cast-in-situ kerbing (25Mpa/19mm concrete)	m	741.96
E220		xi) Combined kerb and infall channel to match existing - (Transition Kerb)	m	668.50
		c) Curved kerbing over 4m up to and including 20m:		
E230		i) Mountable kerb to match (CK5)	m	499.17
E240		ii) Mountable kerb to match (MK10)	m	404.32
E250		iii) Barrier Kerb (BK1)	m	362.38
E260		iv) Barrier Kerb (BK2)	m	377.47
E270		v) Barrier Kerb (BK4)	m	404.49
E280		vi) Edging Kerb (E1)	m	193.70
E290		vii) Edging Kerb (E3)	m	284.01
E300		viii) Channel (C1)	m	368.18
E310		ix) V - Channel (2 x C1)	m	768.03
E320		x) Cast-in-situ kerbing (25Mpa/19mm concrete)	m	702.03
E330		xi) Combined kerb and infall channel to match existing - (Transition Kerb)	m	656.26
	SABS 1200 MM	ANCILLARY ROADWORKS		

		ROAD MARKINGS		
	PSMM 8.4.1	Non-reflectorised paint applied at nominal rate of 0,42 l/m² for:		
		a) White lines (Broken or unbroken)		
E340		i) 100 mm wide	km	8 154.43
E350		ii) 300 mm wide	km	33 359.04
		b) Yellow lines (Broken or unbroken)		
E360		i) 100 mm wide	km	8 154.43
E370		ii) 300 mm wide	km	33 359.04
E380		c) White characters and symbols	m²	122.32
E390		d) Yellow characters and symbols	m²	122.32
E400		e) Traffic island markings (any colour)	m²	122.32
	8.4.2	Variation in rate of application from that stated for item PS MM 8.4.1		
E410		a) White paint	l	117.37
E420		b) Yellow paint	l	117.37

TENDER NO. 150Q/2024/25

TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

SCHEDULE F: HORIZONTAL DIRECTIONAL DRILLING

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
	PS-TF; PS-TH	HORIZONTAL DIRECTIONAL DRILLING, IMPACT MOLING AND SLIPLINING		
		Supply of pipes for Horizontal Directional Drilling, Impact Moling and Sliplining		
F10		28mm to 40mm HDPE PE 100 PN 16	m	20.39
F20		50mm to 63mm HDPE PE 100 PN 16	m	50.04
F30		75mm HDPE PE 100 PN 16	m	69.07
F40		110mm HDPE PE 100 PN 16	m	148.88
F50		160mm HDPE PE 100 PN 16	m	316.29
F60		200mm HDPE PE 100 PN 16	m	491.74
F70		250mm HDPE PE 100 PN 16	m	766.02
F80		315mm HDPE PE 100 PN 16	m	1 215.75
F90		355mm HDPE PE 100 PN 16	m	1 543.16
F100		400mm HDPE PE 100 PN 16	m	1 958.30
F110		500mm HDPE PE 100 PN 16	m	3 060.38
		Excavation for launcing and receiving pits in all materials, backfill, compact and dispose of surplus material material for all pipe diameters for the following depths:		
F120		a) Exceeding 0,0 m but not exceeding 1,0 m	m^3	403.93
F130		b) Exceeding 1,0 m but not exceeding 2,0 m	m^3	504.91
F140		c) Exceeding 2,0 m but not exceeding 3,0 m	m^3	623.33
F150		d) Exceeding 3,0 m but not exceeding 4,0m	m^3	713.33
F160		e) Exceeding 4,0 m but not exceeding 5,0 m	m^3	989.38
		Extra-over items F120 to F160 incl. for (provisional):		
F170		i) Intermediate material	m^3	250.00
F180		ii) Hard rock	m^3	1 000.00
	PS-TF	HORIZONTAL DIRECTIONAL DRILLING		
		Horizontal Directional Drilling establishment		
F190		Fixed charges	Sum	11 983.31
F200		Time related charges	day	1 452.97
	PS-TF 8.1	Installation via Horizontal Directional Drilling of pipes (Pipes measured separately)		
F210		28mm to 40mm HDPE PE 100 PN 16	m	887.16
F220		50mm to 63mm HDPE PE 100 PN 16	m	890.53
F230		75mm HDPE PE 100 PN 16	m	910.26
F240		110mm HDPE PE 100 PN 16	m	943.59
F250		160mm HDPE PE 100 PN 16	m	1 072.67
F260		200mm HDPE PE 100 PN 16	m	1 433.49
F270		250mm HDPE PE 100 PN 16	m	1 484.99
F280		315mm HDPE PE 100 PN 16	m	1 814.71
F290		355mm HDPE PE 100 PN 16	m	1 903.17
F300		400mm HDPE PE 100 PN 16	m	2 650.55
F310		500mm HDPE PE 100 PN 16	m	5 402.94
		IMPACT MOLING		

		Impact Moling establishment		
F320		Fixed charges	Sum	7 846.79
F330		Time related charges	day	1 452.97
		Installation via Impact Moling of pipes (Pipes measured separately)		
F340		28mm to 40mm HDPE PE 100 PN 16	m	467.08
F350		50mm to 63mm HDPE PE 100 PN 16	m	470.45
F360		75mm HDPE PE 100 PN 16	m	514.90
F370		110mm HDPE PE 100 PN 16	m	548.22
F380		160mm HDPE PE 100 PN 16	m	1 617.98
F390		200mm HDPE PE 100 PN 16	m	2 135.90
F400		250mm HDPE PE 100 PN 16	m	2 270.29
F410		315mm HDPE PE 100 PN 16	m	2 812.97
F420		355mm HDPE PE 100 PN 16	m	2 971.29
F430		400mm HDPE PE 100 PN 16	m	3 991.34
F440		500mm HDPE PE 100 PN 16	m	7 017.54
	PS-TH	SLIPLINING		
		Sliplining establishment		
F450		Fixed charges	Sum	11 153.85
F460		Time related charges	day	1 452.97
	PS-TH 8.1	Installation and sliplining of pipes (Pipes measured separately)		
F470		28mm to 40mm HDPE PE 100 PN 16	m	84.50
F480		50mm to 63mm HDPE PE 100 PN 16	m	101.03
F490		75mm HDPE PE 100 PN 16	m	139.57
F500		110mm HDPE PE 100 PN 16	m	181.08
F510		160mm HDPE PE 100 PN 16	m	198.02
F520		200mm HDPE PE 100 PN 16	m	225.52
F530		250mm HDPE PE 100 PN 16	m	255.28
F540		315mm HDPE PE 100 PN 16	m	295.16
F550		355mm HDPE PE 100 PN 16	m	333.91
F560		400mm HDPE PE 100 PN 16	m	385.14
F570		500mm HDPE PE 100 PN 16	m	491.95
		Weld, and install HDPE flange adapter with stub and stainless steel backing flange for connection between uPVC and HDPE		
F580		75mm dia	No.	1 028.54
F590		110mm dia	No.	1 215.45
F600		160mm dia	No.	1 944.05
F610		200mm dia	No.	3 044.74
F620		250mm dia	No.	4 318.12
F630		315mm dia	No.	5 884.86
F640		355mm dia	No.	8 060.90
F650		400mm dia	No.	11 680.02
F660		500mm dia	No.	17 523.00
	PS-TH 8.2	Grouting of annulus		
F670		Grouting of annulus	m^3	4 673.75
		DRILLING MUD / BENTONITE REMOVAL		
		Bentonite spoiled off site at an accredited dumping facility		
F680		1 x Super Sucker Vacuum truck unit	day	14 782.69

F690		2 x Super Sucker Vacuum truck units	day	29 565.38
F700		Disposal cost for dumping the drilling mud, including bentonite at an accredited landfill site	Ton	2 600.00
F710		Testing of bentonite sample	Sum	5 600.00
		Bentonite spoiled on site if allowed to stockpile and dry before removal		
F720		20 ton Excavator	day	8 146.75
F730		Holding pond	m^3	272.47
F740		Removal and Disposal at a location provided by the contractor (include all associated costs for removal)	m^3	216.87

TENDER NO. 150Q/2024/25

TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

SCHEDULE G: SAFETY AND SECURITY (LOW RISK CATEGORY)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
	PS-TI	SITE SECURITY (LOW RISK)		
		GENERAL ITEMS		
		The contractor is referred to the Additional Conditions of Contract setting out the Safety and Security Specifications applicable to this contract. These special requirements are over and above the standard provisions of the contract and are included to deal specifically with extortion risk related safety and security requirements.		
		1. TEMPORARY WORKS, PERSONEL AND EQUIPMENT		
		1.1 PERIMITER FENCING AND GATES		
		A buffer zone of minimum 1m around the perimeter fence shall be kept clear of vegetations, large rocks and other obstructions. Soil treatment and gravel layer may be required		
		Contractor's site establishment shall be set back a minimum of 5m from the perimeter fence and this buffer zone shall remain clear of trees, shrubs, grass and other obstructions in order to allow cameras to have a clear view of the area		
G10		1.1.1 External perimeter security fencing 2.4 m high above ground consisting of 50 x 50 x 2.5mm galvanised welded mesh fixed with 100mm tanalis treated poles at 4m centres, complete with straining wires, etc	m	972.97
G20		1.1.2 Soil treatment around fence	m²	93.92
G30		1.1.3 Gravel layer 75 mm thick around fence	m²	147.01
G40		1.1.4 Vehicular sliding gate size 5m x 3 m high consisting of 50 x 50 x 2.5mm galvanised welded mesh on galvanised metal frame complete with track and anti-dig protection	No	22 239.36
G50		1.1.5 Pedestrian 3-arm full height turnstile complete	No	78 228.00
G60		1.1.6 Vehicular manual boom 3.0 m long complete	No	18 351.00
		1.2 SECURITY GUARDS		
		The contractor shall make provision for the following 24 hours security guards with each guard equipped with radio, ID, baton and torch		
G70		1.2.1 Grade D security guard	Day	1 450.00
		1.3 CCTV, ACCESS CONTROL, ALARM SYSTEMS, ELECTRIC FENCE ENERGISERS, CCT INTERFACE		
		All equipment, cabling support, etc. shall be suitable and rated for the specific site conditions. Factors such as corrosion, lightning, soil conditions, temperature, winds, humidity, rain, etc. shall be considered.		
		Cables shall be installed in fully concealed piping. Junction boxes shall be avoided (if possible) but if		

		visible, shall be tamper resistant. Optical fibre cabling shall be used for longer distances.		
		The equipment enclosures shall be tamper resistant and mounted in a non-obvious location e.g. in a separate room or in an area with limited access		
		Suitable security lighting shall be provided to allow the cameras and guards to function optimally. Fence cameras may use their built-in illuminators to detect intrusion		
		Rates shall include equipment mounting, supports, etc. additional items can be added if not specifically specified		
		1.3.1 CCTV		
G80		1.3.1.2 Gate camera	No	4 468.88
G90		1.3.1.3 Face camera	No	5 305.94
G100		1.3.1.4 Security enclosure camera	No	4 547.95
G110		1.3.1.5 Mounting pole 3m above ground	No	3 585.13
G120		1.3.1.6 Camera equipment enclosure mounted on a pole including equipment	No	6 424.70
G130		1.3.1.7 Network Video Recorder (NVR) including PoE switch (if applicable)	No	14 949.79
		1.3.2 Access control		
G140		1.3.2.1 Non-contact card reader	No	4 200.77
G150		1.3.2.2 Access controllers	No	6 586.56
G160		1.3.2.3 Gooseneck support for the vehicle entrance including mounting position for a face camera	No	2 162.16
		1.3.5 Central equipment enclosure		
G170		1.3.4.1 Tamper-resistant and lockable equipment enclosure in the site office. The enclosure shall house the video recorders, alarm controllers, access controllers, etc.	Sum	9 865.63
G180		1.3.4.2 Battery backed power supply mounted in the enclosure	No	4 800.00
G190		1.3.4.3 Firewall, VPN and other equipment required to allow a link to the central control room and remote access.	Sum	12 509.64
		1.4 Repair and maintenance		
G200		1.4.1 All systems shall be maintained in an optimal condition. Repairs, including spare parts shall be allowed for the full duration of the contract.	Months	9 173.74
		1.5 Installation		
G210		1.5.1 The installation of the systems including, cabling, trenches, draw boxes, sleeves, conduits and other items not specifically included in other items.	Sum	39 536.64
		1.6 Testing, commissioning and training		
G220		1.6.1 Testing and commissioning of all the system and the link to the central control room	Sum	6 795.36
G230		1.6.2 Training of operators, guards and other relevant persons	Sum	6 500.00

TENDER NO. 150Q/2024/25

TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

SCHEDULE H: SAFETY AND SECURITY (MEDIUM RISK CATEGORY)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
	PS-TI	SITE SECURITY (MEDIUM RISK)		
		GENERAL ITEMS		
		The contractor is referred to the Additional Conditions of Contract setting out the Safety and Security Specifications applicable to this contract. These special requirements are over and above the standard provisions of the contract and are included to deal specifically with extortion risk related safety and security requirements.		
		1. TEMPORARY WORKS, PERSONEL AND EQUIPMENT		
		1.1 PERIMITER FENCING AND GATES		
		A buffer zone of minimum 1m around the perimeter fence shall be kept clear of vegetations, large rocks and other obstructions. Soil treatment and gravel layer may be required		
		Contractor's site establishment shall be set back a minimum of 10m from the perimeter fence and this buffer zone shall remain clear of trees, shrubs, grass and other obstructions in order to allow cameras to have a clear view of the area		
H10		1.1.1 External perimeter security fencing 2.4 m high above ground consisting of 50 x 50 x 2.5mm galvanised welded mesh fixed with 100mm tanalis treated poles at 4m centres, complete with straining wires, etc	m	1 278.76
H20		1.1.2 Extra over fencing for excavating, placing and backfilling 400mm panel anti digging protection below ground	m	472.50
H30		1.1.3 Soil treatment around fence	m²	98.40
H40		1.1.4 Gravel layer 75 mm thick around fence	m²	154.36
H50		1.1.5 Vehicular sliding gate size 5m x 3 m high consisting of 50 x 50 x 2.5mm galvanised welded mesh on galvanised metal frame complete with track and anti-dig protection	No	27 910.84
H60		1.1.6 Extra over for 6 No strand electrical fencing to top of fencing and gates	m	370.66
H70		1.1.7 Pedestrian 3-arm full height turnstile complete	No	78 228.00
H80		1.1.8 Vehicular barrier comprising motorized booms 3.5 m long complete	No	33 493.01
		1.2 SECURITY GUARDS		
		The contractor shall make provision for the following 24 hours security guards with each guard equipped with radio, ID, baton, torch and emergency panic button		
H90		1.2.1 Grade C security guard	Day	1 450.00
		1.3 CCTV, ACCESS CONTROL, ALARM SYSTEMS, ELECTRIC FENCE ENERGISERS, CCT INTERFACE		

		All equipment, cabling support, etc. shall be suitable and rated for the specific site conditions. Factors such as corrosion, lightning, soil conditions, temperature, winds, humidity, rain, etc. shall be considered.		
		Cables shall be installed in fully concealed piping. Junction boxes shall be avoided (if possible) but if visible, shall be tamper resistant. Optical fibre cabling shall be used for longer distances.		
		The equipment enclosures shall be tamper resistant and mounted in a non-obvious location e.g. in a separate room or in an area with limited access		
		Suitable security lighting shall be provided to allow the cameras and guards to function optimally. Fence cameras may use their built-in illuminators to detect intrusion		
		Rates shall include equipment mounting, supports, etc. additional items can be added if not specifically specified		
		1.3.1 CCTV		
H100		1.3.1.1 Gate camera	No	7 595.70
H110		1.3.1.2 Vehicle camera	No	8 635.43
H120		1.3.1.3 Face camera	No	5 889.60
H130		1.3.1.4 PTZ camera	No	10 680.35
H140		1.3.1.5 Security enclosure camera	No	4 417.20
H150		1.3.1.6 Mounting pole 3m above ground	No	3 366.90
H160		1.3.1.7 Camera equipment enclosure mounted on a pole including equipment	No	6 240.00
H170		1.3.1.8 Network Video Recorder (NVR) including PoE switch (if applicable)	No	19 170.00
		1.3.2 Access control		
H180		1.3.2.1 Non-contact card reader	No	3 264.00
H190		1.3.2.2 Access controllers	No	6 397.20
H200		1.3.2.3 Gooseneck support for the vehicle entrance including mounting position for a face camera	No	2 100.00
		1.3.3 Alarm systems		
H210		1.3.3.1 8J Electric fence energiser	No	6 583.20
H220		1.3.3.2 Electric fence control unit and link to the central control room	No	4 608.00
		1.3.5 Central equipment enclosure		
H230		1.3.5.1 Tamper-resistant and lockable equipment enclosure in the site office. The enclosure shall house the video recorders, alarm controllers, access controllers, etc.	Sum	9 582.00
H240		1.3.5.2 Battery backed power supply mounted in the enclosure	No	4 800.00
H250		1.3.5.3 Firewall, VPN and other equipment required to allow a link to the central control room and remote access.	Sum	11 880.00
		1.4 Repair and maintenance		
H260		1.4.1 All systems shall be maintained in an optimal condition. Repairs, including spare parts shall be allowed for the full duration of the contract.	Months	8 220.00
		1.5 Installation		

H270		1.5.1 The installation of the systems including, cabling, trenches, draw boxes, sleeves, conduits and other items not specifically included in other items.	Sum	42 240.00
		1.6 Testing, commissioning and training		
H280		1.6.1 Testing and commissioning of all the system and the link to the central control room	Sum	7 590.00
H290		1.6.2 Training of operators, guards and other relevant persons	Sum	7 020.00

TENDER NO. 150Q/2024/25

TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

SCHEDULE J: SAFETY AND SECURITY (HIGH RISK CATEGORY)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	RATE
	PS-TI	SITE SECURITY (HIGH RISK)		
		GENERAL ITEMS		
		The contractor is referred to the Additional Conditions of Contract setting out the Safety and Security Specifications applicable to this contract. These special requirements are over and above the standard provisions of the contract and are included to deal specifically with extortion risk related safety and security requirements.		
		1. TEMPORARY WORKS, PERSONEL AND EQUIPMENT		
		1.1 PERIMITER FENCING AND GATES		
		A buffer zone of minimum 1m around each fence shall be kept clear of vegetations, large rocks and other obstructions. Internal fence shall be erected 5m away from external fence. Soil treatment and gravel layer may be required		
		Contractor's site establishment shall be set back a minimum of 25m from the perimeter fence and this buffer zone shall remain clear of trees, shrubs, grass and other obstructions in order to allow cameras to have a clear view of the area		
J10		1.1.1 External perimeter security fencing 3.0 m high above ground consisting of 50 x 50 x 2.5mm galvanised welded mesh fixed with 100mm tanalis treated poles at 4m centres, complete with straining wires, etc	m	1 423.81
J20		1.1.2 Extra over fencing for excavating, placing and backfilling 400mm panel anti digging protection below ground	m	420.00
J30		1.1.3 Internal perimeter fence 2m high above ground consisting of 50 x 50 x 1.6mm galvanised welded mesh fixed with 100mm tanalis treated poles at 4m centres, complete with straing wires, etc	m	1 173.74
J40		1.1.4 Soil treatment around fence	m²	93.92
J50		1.1.5 Gravel layer 75 mm thick around fence	m²	154.56
J60		1.1.6 Vehicular sliding gate size 5m x 3 m high consisting of 50 x 50 x 2.5mm galvanised welded mesh on galvanised metal frame complete with track and anti-dig protection	No	24 397.59
J70		1.1.7 Extra over for 8 No strand electrical fencing to top of fencing and gates	m	308.88
J80		1.1.8 Pedestrian 3-arm full height turnstile complete	No	78 228.00
J90		1.1.9 Vehicular barrier comprising motorized booms 3.0 m long complete with boom fence and spikes interlocked with internal booms	No	18 605.00
J100		1.1.10 Internal vehicular barrier comprising motorized booms 3.0 m long complete with boom fence and spikes interlocked with internal booms	No	61 809.00
		1.2 SECURITY GUARDS		

		The contractor shall make provision for the following 24 hours security guards with each guard equipped with radio, ID, baton, torch, body camera and emergency panic button		
J110		1.2.1 Grade A on site supervisor	Day	2 121.77
J120		1.2.2 Grade B security guard	Day	1 783.80
J130		1.2.3 Grade C security guard	Day	1 450.00
		1.3 CCTV, ACCESS CONTROL, ALARM SYSTEMS, ELECTRIC FENCE ENERGISERS, CCT INTERFACE		
		All equipment, cabling support, etc. shall be suitable and rated for the specific site conditions. Factors such as corrosion, lightning, soil conditions, temperature, winds, humidity, rain, etc. shall be considered.		
		Cables shall be installed in fully concealed piping. Junction boxes shall be avoided (if possible) but if visible, shall be tamper resistant. Optical fibre cabling shall be used for longer distances.		
		The equipment enclosures shall be tamper resistant and mounted in a non-obvious location e.g. in a separate room or in an area with limited access		
		Suitable security lighting shall be provided to allow the cameras and guards to function optimally. Fence cameras may use their built-in illuminators to detect intrusion		
		Rates shall include equipment mounting, supports, etc. additional items can be added if not specifically specified		
		1.3.1 CCTV		
J140		1.3.1.1 Fence camera	No	4 736.40
J150		1.3.1.2 Gate camera	No	4 210.19
J160		1.3.1.3 Vehicle camera	No	8 439.57
J170		1.3.1.4 Face camera	No	5 889.60
J180		1.3.1.5 Road camera	No	6 510.60
J190		1.3.1.6 PTZ camera	No	10 954.20
J200		1.3.1.7 Security enclosure camera	No	4 417.20
J210		1.3.1.8 Mounting pole 3m above ground	No	3 366.90
J220		1.3.1.9 Camera equipment enclosure mounted on a pole including equipment	No	6 240.00
J230		1.3.1.10 Network Video Recorder (NVR) including PoE switch (if applicable)	No	24 060.56
		1.3.2 Access control		
J240		1.3.2.1 Non-contact card reader	No	3 264.00
J250		1.3.2.2 non-contact face recognition camera	No	10 670.40
J260		1.3.2.3 Access controllers	No	6 397.20
J270		1.3.2.4 Gooseneck support for the vehicle entrance including mounting position for a face camera	No	2 100.00
		1.3.3 Alarm systems		
J280		1.3.3.1 Multi infrared beam (8 beams) transmitter & receiver installed on the inside of the outer fence	No	7 789.87
J290		1.3.3.2 Electric fence energiser	No	6 583.20
J300		1.3.3.3 Electric fence control unit and link to the central control room	No	4 608.00

		1.3.5 Central equipment enclosure		
J310		1.3.5.1 Tamper-resistant and lockable equipment enclosure in the site office. The enclosure shall house the video recorders, alarm controllers, access controllers, etc.	Sum	9 582.00
J320		1.3.5.2 Battery backed power supply mounted in the enclosure	No	4 800.00
J330		1.3.5.3 Firewall, VPN and other equipment required to allow a link to the central control room and remote access.	Sum	11 880.00
		1.4 Repair and maintenance		
J340		1.4.1 All systems shall be maintained in an optimal condition. Repairs, including spare parts shall be allowed for the full duration of the contract.	Months	10 710.00
		1.5 Installation		
J350		1.5.1 The installation of the systems including, cabling, trenches, draw boxes, sleeves, conduits and other items not specifically included in other items.	Sum	48 000.00
		1.6 Testing, commissioning and training		
J360		1.6.1 Testing and commissioning of all the system and the link to the central control room	Sum	10 500.00
J370		1.6.2 Training of operators, guards and other relevant persons	Sum	7 020.00

DECLARATION (In respect of completeness of Tender)

City of Cape Town
Tower Block, Civic Centre
12 Hertzog Boulevard
CAPE TOWN

I/we, the undersigned, do hereby declare that these are the properly priced Schedule of Rates forming Part C2.2 of this Contract Document containing 115 pages in consecutive order, with Annex 6 attached containing 3 pages in consecutive order, upon which my/our tender for **TENDER NO. 150Q/2024/25: TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES** has been based. If I/we have submitted a printed version of the Schedules of Rates, I/we warrant that no amendments have been made to it from the original, other than amendments issued in any Addenda in terms of Clause C.3.2 in Part T1.2 Tender Data.

[redacted]

SIGNATURE OF TENDERER/S

25.02.2025

DATE

Part C3: Scope of Work

	Pages
C3.1 Description of the Works	**202 – 209**
C3.2 Engineering	**210 – 211**
C3.3 Procurement	**212 – 213**
C3.4 Construction	**214 – 298**
C3.5 Management	**299 – 387**
C3.6 Annexes	**388 – 398**

Status

Should any requirement or provision in the parts of the Scope of Work conflict with any requirement of any Standardised Specification, particular specification or any drawings, the order of precedence, unless otherwise specified, is:

Drawings
Scope of Work (Parts C3.1, C3.4, C3.5 and C3.6)
Particular Specifications
Standardised Specifications

C3.1 Description of the Works

CONTENTS

3.1.1 EMPLOYER'S OBJECTIVES
3.1.2 OVERVIEW OF THE WORKS
3.1.3 EXTENT OF THE WORKS
3.1.4 LOCATION OF THE WORKS
3.1.5 TEMPORARY WORKS

3.1.1 EMPLOYER'S OBJECTIVES

Water and Sanitation needs to execute the installation of new water mains, fire hydrants and valves or the upgrade or replacement of the water reticulation infrastructure and repairing of fire hydrants and valves using open trench excavation in the City of Cape Town municipal area as and when required by all City of Cape Town Directorates. For the repairing of water connections, horizontal drilling will be used where possible. The works will mostly be executed in a developed urban environment.

The description of the project contained in the Scope of Work is merely an outline of the Contract Works and shall not limit the work to be carried out by the Contractor under this Contract. Details of some of the major items are given in this section. Each type of work to be carried out in accordance with the Contract Documents are included in the Schedule of Rates.

3.1.2. OVERVIEW OF THE WORKS

The nature of the works includes the supply and installation of new water mains or connections, extensions and upgrading of existing water connections and the supply, maintenance and installation of fire hydrants and valves.

Work will be awarded as Works Projects as and when required by the City of Cape Town for the duration of the term tender contract and are to be executed by contractors allocated Works Projects through a secondary selection process out of the panel of contractors. The Works Projects may be located anywhere within the City of Cape Town municipal area.

As this tender will exceed the current budget cycle, it is subject to a Section 33 process in terms of the Municipal Management Finance Act, 56 of 2003, and consequently the Employer must follow the required processes in terms of Section 33. These will run subsequent to the provisional award of this tender/contract by the City of Cape Town Supply Chain Management.

3.1.3. EXTENT OF THE WORKS

Work items under this term tender contract may include any one or more of the following:

General items

- Establishment on site by the Contractor
- Wayleave applications
- The supply of labour, tools, equipment, materials and supervision to complete the work
- Employment of EPWP labourers
- Employment and management of a CLO
- Liaison with affected residents
- Setting out of the Works
- Accommodation of vehicular traffic and pedestrians during all construction work
- Maintaining access to properties over trench excavations
- Clearing of pipeline routes
- Isolation of Pipelines
- Temporary water supply if required
- Trench excavations

- Dewatering of excavations
- Shoring of deep excavations
- Installation, repair and or replacement of water mains or connections
- Replacement of water fittings, valves and fire hydrants
- Construction of minor structures for water purposes eg. Valve chambers
- Installation of sleeves by means of horizontal drilling
- Maintenance of the works during and after construction.
- Testing and flushing/ sanitation of water pipes
- Reinstatements of roads, kerbs, sidewalks and private gardens
- Providing “As Built” data on completion of the Works Project
- Compliance with the Environmental Management Plan
- Compliance with the Health and Safety Specifications

The Works that are to be carried out will be specified in Works Project contract documents as and when required and as provided for in the Bills of Quantities therein. However, if during the course of construction conditions are found to differ from those anticipated, the Employer’s Agent may modify the scope of the work to suit the prevailing conditions and circumstances.

Water Mains

The water mains to be replaced comprise mostly fibre-cement pipes although other class and types of pipe material eg cast-iron, HDPE, etc. may be encountered. These pipes will be replaced with uPVC pipes class 12 or class 16 or with PVC-O pipes class 12.5, 16, 20 or 25. Pipe sizes range from 50 mm diameter up to 500 mm nominal diameters.

A method statement will be needed where replacement is required for pipe diameters larger than 300mm diameter or for all complex projects and should be approved by the employer’s representative before any work commences. A method statement that is not accepted by the Employer’s Agent will be rejected and the contractor will be required to amend and re-submit the method statement for approval.

3.1.4. LOCATION OF THE WORKS

Each Contractor will be required to work anywhere within the boundaries of the City of Cape Town municipal area as shown on the attached map. The map is included under Part C4: Site Information.

Where ambiguity exists as to the exact location of the boundary (i.e. the boundary is shown as being directly on the road), the boundary shall always be either to the north or east of the road in question.

Site conditions will vary and it is anticipated that most of the work assigned will be within an urban environment, which will range from industrial areas to residential areas.

The rates submitted in the Schedule of Rates shall apply for working anywhere within the City of Cape Town municipal area.

3.1.5 TEMPORARY WORKS

3.1.5.1 SITE FACILITIES AVAILABLE

3.1.5.1.1 Location of Camp Site

If required, the Contractor shall establish his camp at a location identified by himself. The contractor shall negotiate for the use with the affected landowners. The contractor will not be entitled to any extension of time due to a delay in negotiations or approval from landowners.

Any damage to or desecration of land outside the site shall be made good to the satisfaction of the landowner and the Employer’s Agent at the Contractor's expense. The Contractor shall make his own arrangements concerning the provision of water, electricity and other services for his own office.

The Contractor shall submit to the Employer’s Agent his proposed siting and layout of all camps, stores, offices etc. within seven (7) days after acceptance of his works project. Proposals for disposal sites for sewage, waste and refuse shall be submitted to the Employer’s Agent's Representative for approval.

3.1.5.1.2 Occupation of the Site

Access to the site of the works will be given to the Contractor on the Commencement Date.

The site of the works shall consist of all the separate areas associated with the work to be constructed under the Works Project, including the construction camp, any storage area on the site which the

Contractor may require in addition to the area required for construction of the works and special works as defined by the limits of construction shown on the drawings, plus such additional length of road that is necessary for the erection of the traffic accommodation road signs on the approaches to the works.

The site of the works includes portions of existing public roads and footpaths, which will remain in use during the course of the work. Every effort shall be made by the Contractor to minimise the disruption to existing pedestrian and traffic flows during construction. No roads or traffic lanes may be closed without the prior written approval of the Employer's Agent and traffic shall be accommodated as shown on the drawings.

Where existing roads are used, they shall be protected from damage by extraordinary traffic. The Contractor shall immediately repair any damage done by him to fences, gateways, drains or to any other structure during the execution of the Contract and shall leave everything in the same state as it was found by him.

The Contractor shall as far as possible confine his operations to within the limits of the site, but if this is inadequate for his purpose, he shall make all arrangements for any further land he may require and shall pay all costs and charges in this connection.

The Contractor shall afford all reasonable pedestrian and/or vehicular access to all owners or occupiers of properties abutting the works to the satisfaction of the Employer's Agent.

Workmen employed by the Contractor will not be permitted on private property abutting the works during its progress unless such presence is required to successfully complete the work and permission from the owner/occupier has been granted.

3.1.5.1.3 Source of Water Supply

The Contractor shall make his own arrangements for obtaining potable water for construction and domestic purposes. The reticulation in the existing infrastructure adjacent to the site is the nearest available source of water. The Contractor shall pay for the water at the rates and tariffs determined by the City of Cape Town municipality, including the cost of supplying a temporary standpipe as required.

3.1.5.1.4 Source of Power Supply

The Contractor shall make his own arrangements for obtaining power from the City of Cape Town municipality. If the Contractor chooses not to arrange a temporary electricity supply to the site he will have to provide alternative facilities to supply electricity for whatever purpose.

3.1.5.1.5 Sewerage Connection

The Contractor shall make his own arrangements for a connection to the existing foul sewer main and he shall provide a sufficient number of toilets for his staff. Portable toilets will be acceptable.

3.1.5.2 SITE FACILITIES REQUIRED

No specific facilities are required on the site for the Employer's Agent or his representative, but the Contractor will make a desk and chair available for the Employer's Agent or his representative (in his office at no additional cost) if required.

3.1.5.3 CONSTRUCTION TIME PERIOD

3.1.5.3.1 Time for completion

The time for completion, as stated in the Contract Data in terms of Clause 5.14 of the Conditions of Contract, is the time specified by the Employer in each Works Project. The Contractor shall plan and programme his construction sequence for completion within the time period specified.

3.1.5.3.2 Practical completion of the Works

Notwithstanding that there might be natural or programmed sections of the works that will result in them being completed in their entirety before other sections, no consideration shall be given to the issuing of practical completion certificates for portions of the works. The use of any completed section or portions of the work, whether for unhindered use by the public, the use of a service or for accommodation of traffic while other portions are being constructed, shall not constitute use or occupation by the Employer.

In addition to the listed specified items of work and regardless of the degree of beneficial occupation by the Employer, the works shall be considered for practical completion only if the following criteria also have been met:

(i) The repair and replacement or installation of all new pipelines, erf connections, structures, valves and fire hydrants have been installed and successfully tested, and all roadways has been reinstated and tested.

(ii) The written list of outstanding items of work must be completed within 14 days of the list having been issued by the Employer's Agent.

(iii) Any information in the contractor's possession, which is required by the Employers Agent and has been requested in writing, has been supplied.

3.1.5.3.3 Programme

The tenderer must make provision in his programme and tendered rates for the following constraints in working hours and working methods: (This list is not exhaustive and it is accepted that all other constraints were identified by the Contractor during the site inspection)

Re-surfacing of the crossings of surfaced roads must be completed within 10 days of the excavation. Where new pipes are installed in surfaced roads, the re-surfacing of the trench must be undertaken within one month of commencing with the excavation in that particular road.

3.1.5.3.4 Programme Type

The construction programme shall be in the form of a bar chart or in any other form acceptable to the Employer's Agent. The programme shall be drawn to a horizontal time scale. It shall be activity orientated showing interdependencies and the critical path, clearly related to the items or groups of items reflected in the Schedule of Quantities. It shall indicate the quantity of work that shall be carried out each month, but only major work items need be shown.

The programme shall allow and include for special non-working days and the number of days stipulated in the contract data for inclement weather. The programme shall include resource scheduling and balancing and the cash flow envisaged for the Contract. The critical path shall be clearly shown as a heavy double line.

The Contractor shall note the stipulated method of work and shall clearly indicate this on the construction programme. The proposed work sequence shall be subject to the approval of the Employer's Agent.

The Contractor shall update the construction programme on a monthly basis, taking cognisance of all factors affecting the programme. Due allowance shall be made by the Contractor in the tender sum for the cost of updating the programme. Any claim for extension of time shall be evaluated against the construction programme. Only programmes accepted and approved by the Employer's Agent shall be applicable.

3.1.5.4 FEATURES REQUIRING SPECIAL ATTENTION

3.1.5.4.1 Existing Services

Prior to commencing work, the Contractor shall confer with all Authorities and Departments concerned and obtain the necessary wayleaves for both overhead and underground services affected by the Works and shall satisfy himself that he has obtained all the relevant information required to complete the Contract. The contractor must apply for wayleaves within one (1) day of signing the acceptance form to avoid delays to Works Projects. Any planning wayleaves that the contractor may receive from the Council are not a transfer of rights. The Contractor shall carry out the works with the minimum interference to existing services. He shall co-operate with all Authorities and Departments concerned and he shall be solely responsible for carrying out the following operations and checks:

(i) He shall inform all Authorities and Departments in good time before the correct stage of the construction is reached for the laying and/or relaying of any particular services.

(ii) He shall set out the lines and levels of kerbs, pipes, culverts and any other necessary features of the Contract in order that Authorities and Departments are able to lay and/or relay services correctly.

It shall be clearly understood that obtaining the necessary wayleaves and any extra work, such as the removal of any portion of the Works already executed either by the Contractor or other Authority or Department and its subsequent re-execution, which is caused by the Contractor's failure to observe and carry out his responsibilities as specified, will be at his own cost.

If the Contractor considers that the progress of the works is being retarded by the failure of any Authority or Department to lay, remove or divert pipes, ducts, services, cables or poles within a reasonable time, he shall immediately notify the Employer's Agent in writing, stating clearly the number of days of delay claimed. The Employer's Agent will then decide whether such a claim is justifiable, and in the event of the claim being accepted he will hand to the Contractor a certificate stating clearly the number of days of delay sanctioned.

The cost of repairing any damage to services, due to miscalculations or negligence on the part of the Contractor or his failure to carry out the duties set out in this Clause, shall be borne by the Contractor.

(a) Protection of Overhead and Underground Services

Services and sub-surface obstructions likely to be affected by the work, based on available records and surveys, have been shown on the drawings. Although every care has been exercised in the presentation of the available data, the Employer cannot and does not vouch for the accuracy or completeness of the information shown. Whenever the Contractor deems it necessary to determine the exact location of an existing service or obstruction, he shall, at his own expense, make any examination that he may consider desirable in advance of the work, and the Employer does not accept any liability for loss, damage or delay to the Contractor as a result of the non-location or inaccurate location of services or obstructions.

Where no underground services are shown on the drawings or scheduled, but the possibility of their presence can be reasonably inferred, the Contractor shall in collaboration with the Employer's Agent, search for such services to establish their positions well in advance of the work. A full report shall then be submitted in good time to the Employer's Agent, to enable the necessary arrangements for the protection, removal or diversion of the services before work is commenced in their vicinity.

In the event of damage to existing services, the Contractor shall take such immediate action as is necessary to prevent further damage or danger to life or property and shall immediately notify the Employer's Agent who will issue instructions as to the necessary repairs or protective measures to be taken. The cost thereof shall be borne by the Contractor irrespective of whether the repairs or protective measures were carried out by him or by or on behalf of the service authority or department concerned.

As soon as an underground service not shown on the drawings is discovered, it shall be deemed to be a known service and the Contractor will be held responsible for any subsequent damage to it. If such service is damaged during the course of its discovery, the Contractor will be reimbursed for the cost of making good such damage, unless it is established by the Employer's Agent that the Contractor did not exercise reasonable diligence and care and that the damage was avoidable.

(b) Existing Services

"Existing service" shall include any service which has been temporarily taken out of service to allow for the execution of the works or which has been taken out of service as a result of an event which necessitated the execution of the works.

(c) Condition of Existing Services

The Contractor acknowledges that he has inspected and examined all known existing services and all existing services subsequently discovered, as contemplated in (a) above and is satisfied that all such services were in an acceptable and serviceable state at the commencement of the works, alternatively, upon discovery thereof as contemplated in (a) above.

In the event of a dispute as to the acceptability and/or serviceability of an existing service at the commencement of the works or upon the discovery of such service, the Contractor shall bear the onus of proving that the service in question was not in an acceptable and/or serviceable state at the commencement of the works.

(d) Maintenance, Protection and Relocation of Existing Services

During the course of the works, all existing services including traffic signals, water mains, sewers and stormwater reticulation, electricity transmission and telephone lines, cables, poles and conduits whether in service or not shall be protected, supported and maintained to the satisfaction of the service authority or department concerned and the Employer's Agent. The Contractor shall bear all costs in this regard.

Where a bank of underground ducts, cables, etc are crossed over a distance of less than 1.0m they shall be regarded as a single crossing. Hydrants under pressure, water main valve covers and manholes shall be kept unobstructed and accessible at all times.

The covers and frames of service manholes, catchpits, water mains, valve boxes and sewers will have to be adjusted where they are affected by the roadworks.

(e) Work in Close Proximity to Existing Services

The Contractor shall note that no mechanical excavators or vibratory type compactors may be used within three (3) metres of any telecommunications or electrical services. No pegs or stakes shall be driven into the ground in the vicinity of underground services unless their exact positions have been determined.

The Contractor's attention is drawn to the following with regard to work done in the proximity of ESKOM and other electrical services:

MACHINERY AND OCCUPATIONAL SAFETY ACT (Act No 6 of 1983) WITH REGULATIONS

D16 (7) Excavations

"The builder or excavator shall ascertain as far as practicable the location and nature of underground services likely to be affected by the excavation and take such steps as may be necessary to prevent danger to persons."

THE ELECTRICITY ACT (Act No 40 of 1958)

Section 51(3): Offences and Penalties

"Any person who without legal right (the proof of which shall be upon him) cuts or damages or interferes with any apparatus for generating, transmitting or distributing electricity, shall be guilty of an offence and liable on conviction to a fine not exceeding R1 000,00 or to imprisonment for a period not exceeding twelve months."

The Contractor shall take the above into account in the drawing up of his construction programme and in the calculation of his tendered rates, and shall note that no additional payment or compensation will be allowed for any additional costs or delays incurred as a result of compliance with these regulations, except as measured and paid under the Items listed in the Schedule of Rates.

The Contractor shall allow all reasonable access to the representatives of any Authority or Department for the purpose of maintaining, laying and/or relaying any services, cables or mains during the period of the Contract.

Permanent alterations to existing services ordered in writing by the Employer's Agent, and for which no separate provision has been made in the Schedule of Rates, will be paid for under dayworks if required.

3.1.5.4.2 Services to be constructed / relocated by others

Where applicable, details of proposed services which will have to be constructed / installed / relocated by others under the Works project will be provided.

3.1.5.4.3 Work on Private Property

The contractor's attention is drawn to the fact that certain of the work will be carried out on and in close proximity property. These properties are shown on the Contract Drawings. Official notices will need to be issued by the Contractor for work on private property. Reasonable notice must be given. This notice period is deemed to be 7 days.

3.1.5.4.4 Protection of Structures on Private Property

The contractor's attention is drawn specifically to the close proximity of the works to existing structures on private property. Insurance is to be arranged by the Contractor in accordance with Clause 8.6.1 of the General Conditions of Contract (2015) to cover accidental damage to these structures, the excess of which is payable by the Contractor in event of a claim.

The Contractor shall take all necessary precautions required in terms of the Occupational Health and Safety Act, Act 85 of 1993 and those regulations under the Machinery and Occupational Safety Act, 1983 (Act No. 6 of 1983) and the Mines and Works Act, 1956 (Act No. 20 of 1956) still remaining in force, including shoring where necessary to ensure the safety of any structure at risk. The contractor's attention is drawn to the specific risks of working in a residential area, with children present. Excavation and open manholes in particular will be supervised and/or secured at all times.

All garden fences and structures disturbed as a result of the works are to be reinstated to the satisfaction of the affected property owner and the Employer's Agent.

3.1.5.4.5 Surveys and Beacons

The Contractor shall preserve, as far as is possible, any existing beacons and use them to place his own beacons for setting out and control of the work under this Contract. The setting-out co-ordinates on the drawings are based on the new WGS 84 (X,Y,Z) co-ordinate system.

Should a Property or a Trigonometrical Survey beacon be buried or displaced by the Contractor, he shall bear the cost of searching for the beacon and, if so instructed, arrange for the checking of its position and/or replacement.

It may be that during the course of the construction of the Works certain pegs or beacons may be lost or disturbed due to unavoidable circumstances such as the close proximity to the works. Prior to commencing any operations in the vicinity of such pegs or beacons, the Contractor shall notify the Employer's Agent that loss or disturbance of such pegs or beacons appears unavoidable. The Employer's Agent may agree in writing that such beacons could not reasonably be preserved, and only those beacons so signed for will be replaced at the Employer's cost.

The cost of replacing pegs or beacons disturbed due to unavoidable circumstances as determined by the Employer's Agent shall be paid for under dayworks if required.

3.1.5.5 SECURITY

The Contractor shall take every precaution to ensure safety and to protect the Works from theft and vandalism. The Contract shall be responsible for the safety and security of his personnel, materials on site and the Works in general at all times. The Contract shall therefore acquaint himself with the current situation in the area with regard to safety and security (liaising with the local police as necessary) and shall provide all security measures, including the employment of accredited security services, as deemed necessary to comply with the requirements under this clause on the Contract.

Payment items is included in the Schedule of Rates / Bill of Quantities to cover the cost of taking these precautions, together with any fencing, security guards, and any other incidental security measures, which the Contractor may require for the contract. However, the Employer's Agent must authorise the use of the additional security service prior to commencement thereof.

3.1.5.6 STANDARD OF MATERIALS, WORKMANSHIP, TESTING AND PERFORMANCE

The attention of Tenderers is particularly drawn to the high standard of materials, workmanship, testing and performance applicable to his Contract as a whole and he shall convey this requirement to his proposed Sub-Contractors.

The Contractor will carry out control testing of materials and workmanship as required in terms of the specifications. Where necessary, the Employer's Agent may carry out acceptance control testing. The Employer will not pay claims or grant extension of time for delays to the works resulting from the awaiting of test results. Testing as required by the Employer's Agent will be effected as promptly as possible but it is in the Contractors own interest to submit material samples and other components of workmanship for testing in good time to assist in avoiding or minimising delays.

3.1.5.7 WEATHERPROOF PROTECTION FOR WORKERS

All staff required to continue working during rain shall be provided with oilskins and rubber knee boots, or other approved protective clothing and footwear.

3.1.5.8 NIGHT WORK AND WORK ON PUBLIC HOLIDAYS

Where the Contractor requires staff to work overtime, he shall make the necessary arrangements with the Employer's Agent and obtain written approval from the Employer's Agent. The Contractor shall bear the cost of his overtime work.

3.1.5.9 CONSTRUCTION IN CONFINED AREAS

It will be necessary for the Contractor to work within confined and restricted areas. No additional payment will be made for work done in such areas, despite indications to the contrary in the Standard Specifications.

3.1.5.10 HEALTH AND SAFETY PLAN

Prior to commencing work, the Contractor shall submit a site specific Health and Safety Plan, compiled in accordance with the Health and Safety Specifications in C3.5: Management to the Employer's Agent for approval. The Contractor may not commence construction without the Employer's Agent's approval of the Health and Safety Plan.

3.1.5.11 ACCOMMODATION OF TRAFFIC

(i) The safety and convenience of the travelling public is to be considered of utmost importance and every effort must be made to ensure that all temporary road signs, cones, flagmen and speed controls are maintained and effective, and that courtesy is extended to the public at all times.

(ii) It is important that the traffic accommodation requirements described in these specifications are adhered to and that all installations meet with the approval of the relevant traffic authority ie the Traffic Manager of the City of Cape Town.

(iii) Work, including the erection and removal of traffic control facilities, shall be executed between sunrise and sunset on Monday to Friday, inclusive. Occupation of existing traffic lanes will only be allowed during daylight hours on normal working days, which are defined as Monday to Friday, inclusive. The existing number of lanes for each traffic movement affected by construction shall not be reduced without the written authorization of the Employer's Agent.

(iv) It should be noted that Saturdays and Sundays are specified as "Special non-working days" in the Contract Data. In terms of Clause 5.8 of the General Conditions of Contract the Employer's Agent's permission has to be obtained for work to be carried out on special non-working days, for which permission shall be applied for at least one (1) week prior to the day.

(v) The travelling public has the right of way on public roads, and the Contractor shall make use of approved methods to control the movement of his equipment and vehicles so as not to constitute a hazard on public roads.

(vi) Failure to maintain road signs, warning signs or flicker lights, etc, in good condition shall constitute ample reason for the Employer's Agent to bring the works to a stop until the road signs, etc, have been repaired to his satisfaction.

(vii) The Contractor may not commence constructional activities before adequate provision has been made to accommodate traffic in accordance with the requirements of these specifications and Chapter 13 of Volume 2 of the South African Road Traffic Signs Manual (SARTSM).

(viii) The Contractor shall submit proposals in connection with all signs and accommodation of traffic to the Employer's Agent for approval.

The traffic shall be accommodated on the existing surfaced carriageway and shoulders. No bypasses or temporary deviations shall be constructed. Accommodation of traffic will generally be carried out by closing off one lane of traffic at a time and accommodating the traffic on the other lane(s). During non-working days and the period of the year end break (construction industry annual shut-down), the Contractor will be required to shut down normal construction activities and ensure that the total surfaced width is available to public traffic. Only emergency work will be allowed. The Contractor will be required to patrol during these non-working periods and ensure that all temporary traffic-control facilities are in place and functional and will have a team who will be required to be on standby for any situation that may arise.

Details of special traffic accommodation for the Works Project will be provided.
Add the following:

No blocking of the road without the approval from the Employer's Agent.

3.1.5.12 PROVISION OF "AS BUILT" DATA

On completion of the "Works Project", the Contractor will be required to submit accurate "As Built" information of the completed works to the Employer's Agent. This information will be in the form of co-ordinates and levels (X,Y,Z) (WGS 84). Refer to Part C3.2: Engineering under point 5. AS-BUILT DATA PROTOCOL.

3.1.5.13 ENVIRONMENTAL REQUIREMENTS

The Contractor shall take particular note of the environmental requirements contained in the Environmental Specifications in Part C3.5: Management.

Personnel and plant shall not enter property beyond the road reserve boundary irrespective of whether or not the boundary is fenced.

The Contractor shall take every precaution to avoid damage to vegetation within that area of the road reserve which falls outside the designated work area is indicated on the drawings. Any damage caused is to be repaired at the Contractor's expense.

Storage and stockpiling of materials within the road reserve will not be permitted without the written consent of the Employer's Agent. Excess material from excavations and waste material shall be spoiled off site at suitable locations.

Details of special environmental requirements for the Works Project will be provided.

C3.2 Engineering

CONTENTS

3.2.1 DESIGN SERVICES AND ACTIVITY MATRIX
3.2.2 EMPLOYER'S DESIGN
3.2.3 DESIGN BRIEF
3.2.4 DRAWINGS
3.2.5 DESIGN PROCEDURES

3.2.1 DESIGN SERVICES AND ACTIVITY MATRIX

a) The Employer is responsible for the design of the permanent Works as reflected in the Contract documents unless otherwise stated.
b) The Contractor is responsible for the design of the temporary Works, inclusive of shoring, traffic accommodation and temporary over-pumping of sewage and their compatibility with the permanent Works.
c) The Employer is responsible for specifying the required pipe details.
d) The Contractor shall supply the as-built drawings as detailed under the Contract Data.

3.2.2 EMPLOYER'S DESIGN

The permanent works included in this contract has been designed by the Employer. The detail of the works is indicated in the specifications and drawings which will be issued at "Works Project" stage.

3.2.3 DESIGN BRIEF

The contractor shall be responsible for the design of the temporary works as defined above

3.2.4 DRAWINGS

The Contractor shall be responsible for the preparation of "as built" drawings and shall ensure that accurate as-built records are kept of all infrastructure installed or relocated during the contract.

The drawings, if any, issued with this tender document are attached in order to give an overview of the term tender project.

Construction drawings will, in terms of the Conditions of Contract, be issued to the Contractor by the Employer's Agent, as appropriate, prior to the date for commencement with Works execution, and from time to time as required.

The Works Project shall be constructed in accordance with the issued design drawings, if any.

The Works Projects shall be carried out in accordance with the reduced drawings listed in C5.3 which are applicable to the contract and are issued with this tender document and form part of the contract documents as Volume 4.

Only figured dimensions shall be used and drawings shall not be scaled unless otherwise instructed.

Construction drawings will, in terms of the Conditions of Contract, be issued to the Contractor by the Employer's Agent's Representative, as appropriate, prior to the date for commencement with Works execution, and from time to time as required.

3.2.5 AS-BUILT DATA PROTOCOL

The Contractor shall be responsible for the preparation of "as built" drawings and shall ensure that accurate as-built records are kept of all infrastructure installed or relocated during the contract. The position of pipe bends, junction boxes, duct ends and all other underground infrastructure shall be given by either co-ordinates, or stake value and offset. Levels must also be given. A marked-up set of drawings shall also be

kept and updated by the Contractor. This information shall be supplied to the Employer's Agent's Representative on a regular basis.

Any information in the possession of the Contractor, which the Employer's Agent requires to complete his record drawings shall be supplied to the Employer's Agent's Representative before a certificate of completion will be issued.

The contractor must provide all As-built information in the format as detailed in the "**Protocols Regarding Civil As-built Plans and GIS Data**", which are attached in C3.6 Annexes.

C3.3 Procurement

CONTENTS

3.3.1 PREFERENTIAL PROCUREMENT
3.3.2 SUB-CONTRACTING PROCEDURES

3.3.1PREFERENTIAL PROCUREMENT

The Works, and Works Projects, shall be executed in accordance with the conditions associated with the granting of preferences detailed in the **Preference Schedule** where preferences are granted in respect of B-BBEE contribution.

The declarations made in the **Preference Schedule** of the framework contract will be used in the evaluation of tender offers as described in clause C.3.11 in Part T1.2 Tender Data. Once appointed to a panel, Contractors will be required, as applicable, to complete the declaration in respect of sub-contractors in the Works Project Acceptance/Refusal Notice for the particular Works Project, in accordance with clauses P.2.1.4 and P.3.4 in Part A1.2 Work Allocation Procedures in the Works Project contract document.

Financial penalties, as described in the **Preference Schedule**, shall be applied in the event that the Contractor is found to have breached and of the conditions contained in the **Preference Schedule** (unless proven to be beyond the control of the Contractor)

Notwithstanding the application of penalties, the Contractor's attention is drawn to other sanctions that may be applied by the Employer (listed in the **Preference Schedule**) with due consideration to the circumstances.

3.3.2SUB-CONTRACTING PROCEDURES

3.3.2.1Monitoring the use of sub-contractors

Notwithstanding the restriction on sub-contracting as described on the **Preference Schedule**, it is recognised that sub-contracting is an integral part of construction, which the conditions of contract make provision for.

In order, however, to comply with the requirements of the **Preference Schedule**, the Contractor shall submit to the Employer's Agent, on a monthly basis, a **B-BBEE Sub-Contract Expenditure Report**. The format of this report is provided in Annex 2 attached.

The Contractor shall submit to the Employer's Agent documentary evidence in accordance with the applicable codes of good practise of the B-BBEE status level of every sub-contractor employed by the Contractor. Until such time as documentary evidence as described above has been submitted to the Employer's Agent, a sub-contractor shall be deemed to be a non-compliant contributor. The Contractor shall furthermore, on the written request of the Employer's Agent, provide documentary evidence showing the value of work sub-contracted to any or all of the sub-contractors employed by the Contractor.

3.3.2.2Procedure for the selection of sub-contractors/suppliers

Where monetary allowances for provisional sums or prime cost items have been provided in the Bills of Quantities in the Works Project contract document, and where the work or items to which the allowances relate are to be executed/supplied by sub-contractors/suppliers, then the following selection process shall be followed in respect of the required sub-contractors/suppliers:

Where the monetary allowance is less than or equal to R300 000, the Contractor shall invite three quotations from suitably qualified sub-contractors/suppliers for the required work or items. The selection of the three sub-contractors/suppliers shall be in consultation with, and to the approval of the Employer's Agent. The evaluation of the quotations received must include a preference points system as described in C.3.11 of the Tender Data.

Where the monetary allowance is in excess of R300 000, an open competitive tender process shall be followed in respect of the selection of a sub-contractor/supplier for the required work or items. In such circumstances, tender documentation will be prepared by the Employer's Agent in consultation with and to the approval of the Contractor, invitations to tender will be advertised in the media by the Employer's Agent on behalf of the Contractor, and a sub-contractor/supplier will be selected from the responses received, by the Contractor and Employer's Agent in consultation. The evaluation of the offers received must include a preference points system as described in C.3.11 of the Tender Data. The Contractor must satisfy him/herself that the selected sub-contractor/supplier can meet the requirements of the sub-contract /supply agreement and may, on reasonable grounds, elect not to employ a particular sub-contractor/supplier.

In both instances above (less than or equal to R300 000 or in excess of R300 000), the contractual relationship between the Contractor and sub-contractor/supplier shall be as described in Clause 4.4.3 of the General Conditions of Contract.

C3.4 Construction

CONTENTS

3.4.1 TRADE NAMES OR PROPRIETARY PRODUCTS
3.4.2 APPLICABLE STANDARDISED SPECIFICATIONS
3.4.3 PARTICULAR / PROJECT SPECIFIC SPECIFICATIONS
3.4.4 WAYLEAVES, PERMISSIONS AND PERMITS
3.4.5 LOCAL PRODUCTION AND CONTENT
3.4.6 EMPLOYMENT OF SECURITY PERSONNEL
3.4.7 UNIVERSAL ACCESS

3.4.1. TRADE NAMES OR PROPRIETARY PRODUCTS

Bid specifications may not make any reference to any particular trade mark, name, patent, design, type, specific origin or producer, unless there is no other sufficiently precise or intelligible way of describing the characteristics of the work, in which case such reference must be accompanied by the words “or equivalent”.

CONTRACTORS MUST NOTE THAT WHEREVER THIS DOCUMENT REFERS TO ANY PARTICULAR TRADE MARK, NAME, PATENT, DESIGN, TYPE, SPECIFIC ORIGIN OR PRODUCER, SUCH REFERENCE SHALL BE DEEMED TO BE ACCOMPANIED BY THE WORDS ‘OR EQUIVALENT”

3.4.2 APPLICABLE STANDARDISED SPECIFICATIONS

The following latest SANS 1200 Standardized Specifications for Civil Engineering Construction are applicable:

SANS 1200 A	:	General
SANS 1200 C	:	Site clearance
SANS 1200 D	:	Earthworks
SANS 1200 DB	:	Earthworks (pipe trenches)
SANS 1200 DK	:	Gabions & Pitching
SANS 1200 DM	:	Earthworks (Roads, Subgrade)
SANS 1200 G	:	Concrete (Structural)
SANS 1200 L	:	Medium-pressure pipelines
SANS 1200 LB	:	Bedding (pipes)
SANS 1200 LC	:	Cable Ducts
SANS 1200 LD	:	Sewers
SANS 1200 LE	:	Storm water Drainage
SANS 1200 LF	:	Erf connections (water)
SANS 1200 LG	:	Pipe Jacking
SANS 1200 ME	:	Sub base
SANS 1200 MF	:	Base
SANS 1200 MG	:	Bituminous Surface Treatment
SANS 1200 MH	:	Asphalt Base and Surfacing
SANS 1200 MJ	:	Segmented Paving
SANS 1200 MK	:	Kerbing and Channelling
SANS 1200 MM	:	Ancillary Roadwork

Particular Specifications included after the Standard Specifications shall apply and form part of this contract.

3.4.3 PARTICULAR / PROJECT SPECIFIC SPECIFICATIONS

3.4.3.1 PROJECT SPECIFIC SPECIFICATIONS

The following variations and additions to the SANS 1200 Standardized Specifications referred to in clause 3.4.1 apply to this Contract. The prefix PS indicates an amendment to SANS 1200. The letters and numbers following these prefixes respectively indicate the relevant Standardized Specification and clause numbers in SANS 1200 to which the variation or addition thereunder applies.

PSA GENERAL

PSA 3 MATERIALS

PSA 3.1 Quality

All pipes, fittings and materials used in the works, must bear the official standardisation mark of the SANS where applicable. The mark on a pipe shall be visible from above after the pipe is installed.

The Employer's Agent's approval of all manufacturers' instructions with regard to installation of pipelines and sealing of joints is required.

PSA 4 PLANT

PSA 4.1 SILENCING OF PLANT

Replace the contents of sub-clause 4.1 with the following:

The Contractor's attention is drawn to the applicable regulations pertaining to noise and hearing conservation, framed under the Occupational Health and Safety Act, 1993 (Act No 85 of 1993) as amended.

The Contractor shall at all times and at his own cost, be responsible for implementing all necessary steps to ensure full compliance with such regulations, including but not restricted to the provision and use of suitable and effective silencing devices for pneumatic tools and other plant which would otherwise cause a noise level in excess of that specified in the said regulations.

Where appropriate, the Contractor shall further, by means of temporary barriers, effectively isolate the source of such noise in order to comply with the said regulations.

Add the following:

The Contractor will be required to obtain a noise exemption permit from the City of Cape Town.

PSA 4.2 CONTRACTOR'S OFFICES, STORES AND SERVICES

Add the following paragraph before the existing first paragraph in subclause 4.2:

The Contractor's buildings, sheds and other facilities erected or utilised on the Site for the purposes of the Contract shall be fenced off and shall contain all offices, stores and toilet facilities, etc. as may be and if required by the Contractor. The facilities shall always be kept in a neat and orderly condition.

No personnel may reside on the Site. Only a night-watchman may be on the Site after hours.

Delete "and first-aid services" in the second paragraph of subclause 4.2 and add the following:

The Contractor shall provide on the Site and in close proximity to the actual locations where the work is being executed, one toilet per 10 workmen, which toilets shall be effectively screened from public view and their use enforced. Such toilets shall be relocated from time to time as the location of the work being executed changes, so as to ensure that easy access to the toilets is maintained.

The Contractor shall, where applicable, make all necessary arrangements and pay for the removal of night soil.

PSA 5 CONSTRUCTION

PSA 5.1 SURVEY

PSA 5.1.1 Setting out of the Works

Add the following to this subclause:

The Contractor shall be responsible for the true and proper setting out of the Works and for the correctness of the position, levels, dimensions and alignment of all parts of the Works and for the provisions of all necessary instruments, appliances and labour in connection therewith.

The Contractor shall carefully protect and preserve all benchmarks, sight-rails, pegs and other things used in setting out the Works.

The checking of any setting-out or of any line or level by the Employer's Agent shall not relieve the Contractor of his responsibility for the correctness thereof.

If at any time during the progress of the Works, any error shall appear or arise in the position, levels, dimensions or alignment of any part of the Works, the Contractor, on being required to do so by the Employer's Agent, shall at his own expense rectify such error to the satisfaction of the Employer's Agent, but if such error is based on incorrect data supplied in writing by the Employer's Agent or if there is any delay in providing the particulars required, the Contractor shall, in respect of that delay and the cost of such rectification, be entitled to make a claim in accordance with Clause 10 of the General Conditions of Contract.

Add the following new subclause:

PSA 5.1.3 As-built survey

The Contractor shall supply the Employer's Agent with as-built survey data for the entire Works (including invert and cover levels, coordinates of valve chambers and points of intersection, etc). The Completion Certificate will not be issued until the as-built survey information had been approved by the Employer's Agent.

The contractor must provide all as-built information in the format as detailed in the as-built protocol. Refer to clauses under Part C3: Scope of Works and Annexure 6 included in this document.

PSA 5.2 Watching, Barricading, Lighting and Traffic Crossings

Add the following to this subclause:

With reference to Subclause 5.2 of SANS 1200 A the Contractor shall, in addition to the requirements of Subclause 5.1.6 of SANS 1200 D and the Amendments thereto, carry out and maintain such temporary works and provide all temporary road signs, temporary bridging, pipes, deviations and the like, as are necessary to maintain and safeguard the normal flow of public and private, vehicular and pedestrian traffic.

Without limiting the Employer's Agent's right to request additional requirements in terms of the Specifications and the General Conditions of Contract, the following shall be regarded as the minimum requirements for security, temporary fencing and lighting.

Add the following new subclause:

PSA 5.2.1 Security

The Contractor shall take every precaution to ensure safety and to protect the Works from theft and vandalism. The Contractor shall be responsible for the safety and security of his personnel, materials on site and the Works in general at all times. The Contract shall therefore acquaint himself with the current situation in the area with regard to safety and security (liaising with the local police as necessary) and shall provide all security measures, including the employment of accredited security services, as deemed necessary to comply with the requirements under this clause on the Contract. In exceptional circumstances, some volatile areas may necessitate the use of local security guards.

A pay item is included in the Schedule of Rates to cover the cost of taking these precautions, together with any fencing, security guards, and any other incidental security measures, which the Contractor may require for the contract.

PSA 5.2.2 Temporary Fencing of Excavations

The Contractor shall enclose all excavations with stout temporary orange barricade net fencing (1,2m high).

In addition to the orange barricade;

- The Contractor shall erect delineators alongside the road, adjacent to all open excavations, at 5 m intervals, and shall securely fix one line of red-and-white plastic warning tape of an approved design along the top of the fence for its full length when working alongside a road.
- The Contractor shall erect concrete barriers or plastic barriers (filled with water) when work is executed within the road width for the full length.

- The Contractor shall erect a temporary steel fence for barricading (1.8m high) when working within the property of a school, golf course and sports field.

The Contractor shall place the barriers alongside the excavation/ trench to ensure that vehicles remain a safe distance away from the trench and to prevent that a vehicle crashes into the trench. The Contractor shall at all times ensure the safety of the public, traffic, pedestrians and labour is kept at all times and that the safety takes precedence over the construction works.

The Contractor shall backfill and reinstate the pipeline on a daily basis before proceeding with pipe installation at another section. The contractor shall backfill and reinstate as the pipe is being installed to prevent open holes/ excavations. All open trenches during the day shall be temporarily barricaded with orange netting as described above when not working in the area. If no other option exist or due to unforeseen circumstances the contractor cannot backfill the excavation the contractor shall ensure that all excavation/ trenches left open after hours shall be barricaded with new jersey barriers as described above.

PSA 5.2.3 Lighting

Open trenches which constitute a hazard to pedestrians or traffic shall be illuminated by red lights in the following manner:

At least two red lights shall be placed across the ends of open trenches, at a maximum spacing of 2 metres.

Red lights shall be placed along open trenches at 10 m intervals on the road side and at 3 m intervals along the pedestrian side, where applicable.

At least 1 red lamp shall be placed at each of the four corners of each pedestrian crossing and at least 2 red lamps at each of the four corners of each vehicular crossing.

All lamps shall be in position and burning between the hours of sunset and sunrise, and shall be provided with a chain and padlock and locked to suitable posts of prevent theft.

PSA 5.2.4 Accommodation of Traffic

Accommodation of traffic will be required along entrance / exit roads, where the new works tie-in to existing roads. Traffic may have to be deviated onto a half-width roadway or single lane route past / through the construction work area.

When working in roads or across any road, the Contractor shall submit drawings detailing the accommodation of traffic to the Employer's Agent for approval at least 14 days prior to construction. The deviation and signage shall be in accordance with the South African Road Traffic Signs Manual (SARTSM) and the details shown on the drawings.

The Contractor's attention is drawn to the possibility of heavy volume and speed of traffic carried on the affected roads and shall make due allowance therefor in his construction programme.

The Contractor shall liaise and co-operate with the relevant traffic authorities regarding the accommodation of traffic on existing roads. The Contractor shall indemnify the Local Authority, as applicable, from all liabilities in respect of excavations and works on or adjacent to trafficked roads.

The Contractor shall provide and maintain in a proper condition all necessary barricades, lights, warning signals and all direction signs necessary to accommodate the traffic during these stages. The Contractor shall also provide for flagmen at all deviations and/or obstructions where necessary. Open trenches shall be kept to a minimum and shall at all times be adequately demarcated, to protect pedestrians. The Contractor shall also ensure that access to properties affected by the works is maintained at all times.

The Contractor shall be responsible for the safe and easy accommodation of all traffic and the maintenance of the vehicular and pedestrian access to private property for the duration of the contract and at any time when work is undertaken during the maintenance period. **Pedestrian access must be maintained at all times and vehicular access sunset to sunrise.**

Flagmen shall be provided at all access and exit points to the working areas alongside public traffic. Flagmen equipped with high visibility safety jackets, red flags, STOP/GO-RY signs and two-way radios shall be stationed at each end of the road section to ensure an orderly flow of traffic past the work area. All signals must be clear and the flagmen shall be intelligent and responsible personnel. In areas of high traffic density, the assistance of the relevant traffic authorities officials shall be solicited.

All temporary barricades and delineators shall be mounted on portable supports to facilitate their moving. Only sandbags will be permitted for the ballasting of the supports. The sandbags shall consist of durable

material and have adequate mass to prevent signs from being blown over by the wind. Sandbags shall be placed as ballast on the supports in front of and behind the sign so as not to obstruct the traffic path past the sign. The cost of the sandbags shall be included in the tendered rate for Accommodation of Traffic.

At night and when directed by the Employer's Agent, red flashing warning lights shall be placed at strategic places such as barricades, obstructions, etc.

No traffic deviations or rerouting shall take place until all barricades / delineators and signs are in place.

Temporary crash barriers shall be constructed when working in heavily traffic areas as instructed by the Employer's Agent.

PSA 5.2.5 Public relations

Prior to the commencement of work the Contractor shall at his own expense and on his own letter with relevant contact numbers, compile and distribute explanatory letters typed in English, Afrikaans and where necessary in Xhosa to each address likely to be affected by the works. These letters are to be vetted by the Employer's Agent prior to distribution. Complaints from members of the public are to be dealt with in a courteous and expedient manner to the entire satisfaction of the Employer's Agent." The notice should be sent 7 days prior to commencement of works.

PSA 5.3 PROTECTION OF STRUCTURES

Replace "Machinery and Occupational Safety Act, 1983 (Act No 6 of 1983)" with "Occupational Health and Safety Act, 1993 (Act No 85 of 1993), as amended," and insert the following after "(Act No. 27 of 1956)": "as amended".

PSA 5.4 PROTECTION OF OVERHEAD AND UNDERGROUND SERVICES

Replace the heading and the contents of sub clause 5.4 with the following

LOCATION AND PROTECTION OF EXISTING SERVICES

PSA 5.4.1 Detection, Location and Exposure of existing services

Before commencing with any work in an area, the Contractor shall ascertain the presence and actual position of all services which can reasonably be expected by an experienced and competent Contractor to be present on, under, over or within the Site.

Without in any way limiting his liability in terms of the Conditions of Contract in relation to damage to property and interference with services, the Contractor shall, in collaboration with the Employer's Agent, obtain the most up-to-date plans as are available, showing the positions of services existing in the area where he intends to work. Neither the Employer nor the Employer's Agent offers any warranty as to the accuracy or completeness of such plans and because services can often not be reliably located from plans, the Contractor shall ascertain the actual location of services depicted on such plans by means of careful inspection of the Site.

Thereafter, the Contractor shall, by the use of appropriate methodologies, carefully expose the services at such positions as are agreed to by the Employer's Agent, for the purposes of verifying the exact location and position of the services. Where the exposure of existing services involves excavation to expose underground services, the further requirements of sub clauses 4.4 and 5.1.2.2 of SANS 1200 D (as amended) shall apply.

The aforesaid procedure shall also be followed in respect of services not shown on the plans but which may reasonably be anticipated by an experienced Contractor to be present or potentially present on the site.

All services, the positions of which have been determined as aforesaid at the critical points, shall henceforth be designated as 'known services' and their positions shall be indicated by the Contractor on a separate set of drawings, a copy of which shall be furnished to the Employer's Agent without delay.

As soon as any service which has not been identified and located as described above is encountered on, under, over or within the site, it shall henceforth be deemed to be a known service and the aforesaid provisions pertaining to locating, verifying and recording its position on the balance of the site shall apply. The Contractor shall notify the Employer's Agent immediately when any such service is encountered or discovered on the Site.

Whilst he is in possession of the Site, the Contractor shall be liable for all loss of or damage as may occur to

(a) known services, anywhere along the entire lengths of their routes, as may reasonably be deduced from the actual locations at which their positions were verified as aforesaid, due cognizance being taken of such deviations in line and level which may reasonably be anticipated, and

(b) any other service which ought reasonably to have been a known service in accordance with the provisions of this clause.

The Contractor shall also be liable for consequential damage in regard to (a) and (b), whether caused directly by the Contractor's operations or by the lack of proper protection.

No separate payment will be made to the Contractor in respect of his costs of providing, holding available on the Site and utilising the said detecting and testing equipment, nor for any costs incurred in preparing and submitting to the Employer's Agent the Drawings as aforesaid. These costs shall be deemed included in the Contractor's other tendered rates and prices included in the Contract.

Payment to the Contractor in respect of exposing services at the positions agreed by the Employer's Agent and as described above will be made under the payment items (if any) as may be provided for in the respective sections of the specifications pertaining to the type of work involved.

PSA 5.4.2 Protection during construction

The Contractor shall take all reasonable precautions and arrange its operations in such a manner as to prevent damage occurring to all known services during the period which the Contractor has occupation and/or possession of the Site.

Services left exposed shall be suitably protected from damage and in such a manner as will eliminate any danger arising therefrom to the public and/or workmen, all in accordance with the requirements of the prevailing legislation and related regulations.

Unless otherwise instructed by the Employer's Agent, no services shall be left exposed after its exact position has been determined and all excavations carried out for the purpose of exposing underground services shall be promptly backfilled and compacted. In roadways, the requirements of sub clause 5.9 of SANS 1200 DB should be observed. In other areas compaction is to be to 90% modified AASHTO density.

PSA 5.4.3 Alterations and repairs to existing services

Unless the contrary is clearly specified in the Contract or ordered by the Employer's Agent, the Contractor shall not carry out alterations to existing services. When any such alterations become necessary, the Contractor shall promptly inform the Employer's Agent, who will either make arrangements for such work to be executed by the owner of the service, or instruct the Contractor to make such arrangements himself.

Should damage occur to any existing services, the Contractor shall immediately inform the Employer's Agent, or when this is not possible, the relevant authority, and obtain instructions as to who should carry out repairs. In urgent cases, the Contractor shall take appropriate steps to minimise damage to and interruption of the service. No repairs of telecommunication cables or electric power lines and cables shall be attempted by the Contractor.

No liability for damages arising from any delay in having such alterations or repairs undertaken will be accepted by the Employer. The Contractor shall provide all reasonable opportunity, access and assistance to persons doing alterations or repairs to existing services.

A list of important telephone numbers for use when services are damaged or need to be altered will be provided as part of the Works Contract.

PSA 5.4.4 Liability for Damage and Insurance

The Contractor's attention is drawn to the relevant clauses of the General Conditions of Contract and Contract Specific Data regarding liability for damage to the Works, or property, or injury to persons arising from the construction of the Works. His attention is also drawn to the General Conditions of Contract regarding insurance to be effected by the Contractor. Special attention is drawn to the exclusions in this insurance policy and particularly to the exclusions regarding consequential damage.

PSA 5.4.5 Access to Services

The Contractor shall allow all reasonable access to any Authority for the purpose of repairing, maintaining, laying and/or relaying any service, cables or mains during the period of this Contract.

The Contractor shall co-operate with other Contractors or Authorities responsible for the installation of water reticulation, electricity cables and communication cables and shall arrange his programme accordingly.

PSA 5.5 DEALING WITH WATER ON WORKS

Replace the contents with the following:

All water, whether from rain, pipeline failures, or subsurface water and infiltration shall be dealt with in such a way as to ensure the safety of the works.

It is required that adequate preventive measures are taken and maintained to ensure that the works are protected from damage due to water from any source.

The Contractor shall design, construct and maintain all drains and other temporary works necessary for the dewatering and flood protection of the permanent works. All methods of dewatering and flood protection shall be submitted to the Employer's Agent for approval.

In the event of these measures failing to protect the works, action shall be taken immediately to protect the works from further damage, the cost of which shall be carried by the Contractor. The damage caused by the water shall be made good by those responsible for the work damaged, or as directed by the Employer's Agent.

The Contractor shall be responsible for and shall repair at his expense any damage to the foundations, structures or any part of the works caused by floods, water or failure of any part of the dewatering and flood protection works.

Having served their purpose, all temporary works shall be removed, backfilled or levelled such that the operation of the works shall not be affected in any way.

The cost of all flood protection and control of water measures shall be included in the tendered rate for payment item 8.3.2 in the General Section of the Schedule of Quantities.

Where specialist dewatering measures are required for a project and is to be undertaken by a sub-contractor, the cost shall be included for each Works Project and paid for as a separate item.

PSA 5.6 POLLUTION

Add the following:

The Contractor shall take all precautions to ensure that no part of the surroundings is contaminated with petrol, oil, or grease or any other harmful substance. He shall remove any surfacing, which in the Employers Agent's opinion, the Contractor has caused to become contaminated. The Contractor shall dispose of it as instructed by the Employers Agent and shall replace it with material to the Employers Agent's approval. In particular the Contractor will be required to remove from the ground and take away from the site all surplus or spilt concrete, cement grout, stone and sand stockpiles.

The Contractor shall clean up and cart away all rubbish and debris of whatever kind as it accumulates during the Contract, and at completion is to clear away and remove all other rubbish, unused material, temporary erections, plant and debris and leave the site and the whole of the Works and each complete portion thereof clean and tidy and to the satisfaction of the Employers Agent. Both public areas e.g. verges and private property, are to be cleared of stones, debris and other rubbish such that they revert to the condition found before construction. Private property, in particular shall be cleared progressively as the work is completed.

The Contractor shall prevent unnatural contamination and minimise natural contamination of surface or underground water as a result of his activities. Such unnatural contamination could result from the release, accidental or otherwise, of chemicals, oils, fuels, sewage and waste products. In particular cement waste, concrete and contaminated wash water shall be disposed of in a confined area which shall eventually be cleaned and reinstated. Natural contamination could result from excavations, construction water, stormwater carry soil particulars etc.

PSA 5.7 SAFETY

Replace the contents of subclause 5.7 with the following:

PSA 5.7.1 Occupational Health and Safety Act

The Contractor is to observe the provisions of the Occupational Health and Safety Act 85 of 1993. Working on underground pipelines presents hazardous conditions and the Contractor's attention is drawn to the

Occupational Health and Safety Act - General Safety Regulations and in particular Regulation No. 5 – Work in Confined Spaces. The Contractor shall, in terms of the Occupational Health and Safety Act Construction Regulations 2014, address these hazards in his Health and Safety Plan.

The Contractor shall give notice to the Provincial Director, in terms of Clause 3 of the Occupational Health and Safety Act Construction Regulations 2014, prior to the commencement of work on site.

The Contractor must appoint a full time Construction Health & Safety Officer (CSHO) to monitor all works construction sites for compliance.

PSA 5.7.2 Construction hazards

The possibility of high water pressures to be taken into account when working with live water mains.

Some of the existing pipelines to be repaired and/or rehabilitated are of asbestos cement. Working with asbestos cement can present hazardous conditions and the Asbestos Regulation 2001 shall apply.

The safety of the public and all workers and the provision of all necessary safety equipment for the protection of workmen shall be the Contractor's sole responsibility.

PSA 5.8 GROUND AND ACCESS TO WORKS

Add the following:

The Contractor shall:

a) During construction of the Works:

i) improve and maintain to a standard that will ensure the safe execution of the Works, any existing access roads or roads built under this Contract and tracks required by him for the Works,

ii) construct and maintain additional roads as necessary for his purposes to and along the working width of the pipeline route, to a standard required for the efficient construction of the Works.

iii) keep all roads and access tracks used by him watered to minimise dust. The frequency of the watering shall be at least daily when roads and tracks are used by the Contractor, unless it is sufficiently damp after rain.

b) Immediately on completion of each section of the Works:

i) reinstate all private roads used by him, other than those under (ii) below, to at least their original condition,

ii) scarify all roads constructed by him for construction purposes and which are not required by the property owner or the Employer. The area shall be reinstated to at least its original condition

Add the following sub-clauses to clause 5:

PSA 5.9 ENVIRONMENTAL PROTECTION

Construction will take place within an urban area and every precaution must be taken to protect the established vegetation and roadside facilities. It is therefore essential that the Employer's Agent be continually consulted throughout the construction period to ensure that environmental considerations are satisfied.

Failure to show adequate consideration for the environmental aspects of this contract will be sufficient for the Employer's Agent to have the Contractor's representative or any other Contractor's employee(s) removed from the site in terms of the General Conditions of Contract.

The following conditions have been imposed and shall be strictly complied with:

(a) Personnel and plant shall not enter property beyond the boundaries of approved working areas, camp sites and stockpile sites without written authorization by the Employer's Agent irrespective of whether the approved areas are fenced off or not.

(b) The Contractor shall, to the satisfaction of the Employer's Agent, take every necessary precaution to prevent the contamination and pollution of the environment.

The Contractor shall plan his activities such that materials, in so far as is possible, can be transported direct to and placed at the point where they are to be used. However, where utilising materials in this manner is impracticable, it shall be temporarily stockpiled for later loading and transportation to where it will be used. Compensation for stockpiling materials will not be payable directly, but full compensation therefore shall be included in the rates for the various items of work in which the stockpiled material is used.

Stockpiling areas shall be indicated to and approved by the Employer's Agent. Before any stockpiling of material may be done, the site shall be cleaned, and all loose stones or any plant or other material which may cause pollution shall be removed. After the stockpiled material has been removed, the site shall be reinstated as closely as possible to its original condition.

(c) The Contractor shall be responsible for the establishment of a refuse control system for the collection and removal of refuse from the camp site and working areas.
The Contractor shall ensure that waste and surplus food, food packaging plastic and organic waste is not deposited by his employees anywhere on the site except in refuse bins for removal. If his employees are to eat elsewhere on site and not within the camp site, the Contractor shall designate restricted places for eating in his working areas, shall provide adequate refuse containers in all these places and shall remove the refuse and clean up any remaining food containers immediately after mealtimes.

(d) Trees, shrubs or any other existing vegetation on the site may not be removed without approval of the Employer's Agent. Such trees, shrubs or any other vegetation shall remain the property of the employer.

(e) No bituminous material or waste material shall be dumped, even if only as a temporary measure, on the site, but provision shall be made to remove such excess material directly off the site of works.

(f) The Contractor shall ensure adequate provision of latrine facilities for his employees.

All costs incurred by the Contractor in complying with PSA 5.9 shall be deemed to be included in the Contractor's general obligations and no separate payment shall be made in this regard.

PSA 5.10 DAYWORK

PSA 5.10.1 General Requirements

This section covers the evaluation and method of measurement and payment for work, ordered by the Employer's Agent in writing, carried out on a daywork basis, all in accordance with Subclause 6.5.1 of the General Conditions of Contract and Contract Specific Data.

Work will be classified as daywork only if the Employer's Agent considers no other rate in the schedule of quantities appropriate for payment purposes.

Only work ordered in writing by the Employer's Agent to be executed as daywork shall be measured and paid for at the rates tendered in the Schedule of Quantities.

The Contractor shall keep and submit records of the work performed in accordance with the requirements of Subclause 6.5.3 of the General Conditions of Contract or Contract Specific Data.

PSA 5.10.2 Labour

The tendered rates for labour to be included as daywork charges shall include the salaries and wages of gangers or charge hands working with their gangs but shall exclude the costs of the time of the foremen or supervisors which will be deemed to have been included in the sums tendered for the relevant items in the schedule of quantities.

Gross remuneration, as specified in Subclause 6.5.1.2.1 of the General Conditions of Contract and Contract Specific Data, will be deemed to include the following:

(a) Basic salary/wage

(b) Overhead charges such as fringe benefits not reflected in basic salary and wages which may include:

i. normal annual bonus

ii. employer's contribution to medical aid

iii. group life assurance premiums

iv. employer's contribution to pension/provident fund

v. all other costs as per letter of appointment

and costs payable due to statutory requirements, which may include:

i. Workmen's Compensation Fund contribution

ii. Unemployment Insurance Fund contributions

iii. District Council levies or the equivalent thereof

The rates tendered for labour shall include for the actual cost of salaries and wages, all overhead charges, profit, liabilities, obligations, risks and incidentals for all workmen to execute work by dayworks.

PSA 5.10.3 Materials

The nett cost price of materials (exclusive of VAT) actually delivered to the site to be included as daywork charges shall include the costs of delivery to the usual points at which materials are received on the site.

Before ordering any material, the Contractor shall submit quotations to the Employer's Agent for his approval, and shall submit such receipts or vouchers to the Employer's Agent as may be necessary for proving the amount claimed.

The percentage tendered as an on-cost on the net cost price of materials shall include for all handling, overheads, profit, liabilities, obligations, risks, incidentals and other on-costs for the supply, delivery and distribution of material for daywork to the individual site(s) where daywork is in progress.

PSA 5.10.4 Plant

The full inclusive hourly cost of operational plant which is available on site or which has been removed without written authorization of the Employer's Agent, to be included as daywork charges will be taken to be the tendered rate which, in the opinion of the Contractor, will be applicable in all respects to the situation and terms of the contract.

The hourly rate tendered or agreed shall constitute the daywork rate for the plant and will be deemed to include all costs for plant operators, consumable stores, fuel maintenance, depreciation, ground-engaging tools and all other incidentals necessary to operate the plant for the purposes for which it was designed.

Failure on the part of the Contractor to state in the schedule of quantities the plant on which his tender is based, shall be considered as a firm agreement on the part of the Contractor that he waives all rights to distinguish between the different types and capacities of plant falling within the description and/or category given, and the Employer's Agent shall have the right to call upon the Contractor to supply any such plant to the site and perform the work as directed by him at the particular tendered rate.

Sixty percent (60 %) of the hourly rate tendered or agreed will be paid in respect of plant which is being employed for daywork, but standing idle on the specific instructions of the Employer's Agent, as full compensation for idle costs of daywork plant.

For plant not on site, the costs of establishing items of plant on the site for daywork on specific instruction of the Employer's Agent will be negotiated with the Contractor at the time that such daywork is contemplated.

PSA 5.11 SITE MEETINGS

The Contractor or his authorised agent will be required to attend regular site meetings, which shall normally be held when necessary on dates and at times determined by the Employer's Agent, but in any case whenever reasonably required by the Employer's Agent. Unless otherwise indicated in the Contract or instructed by the Employer's Agent, such meetings shall be held at the Contractor's offices on the site. At such monthly meetings, matters such as general progress on the works, quality of work, problems, claims, payments, and safety shall be discussed, but not matters concerning the day-to-day running of the Contract.

PSA 5.12 Interruption of service

The maximum time permitted for consumers to be without water, sewerage or stormwater drainage services is six (6) hours. The use of bypass or temporary connections shall be permitted. Notice must be given to affected residents 24 hours prior to shut down.

The Contractor shall provide a 24 hour standby service for the maintenance and repair of any section of work covered by the works contract. He shall provide the Employer's Agent with an effective means of contacting the standby staff on a 24 hour basis. All repairs necessary to maintain services to residents shall be carried out without delay.

All costs incurred by the Contractor in complying with PSA 5.12 shall be deemed to be included in his rates and no separate payment shall be made in this regard.

PSA 5.13 Supervision

All work to be carried in the Works Projects shall be supervised throughout the duration of the contract by a qualified senior representative of the Contractor who has extensive experience in the type of work to be executed. The representative must be authorized to make all necessary decisions on behalf of the Contractor.

PSA 7 TESTING

PSA 7.1 PRINCIPLES

PSA 7.1.1 Checking

Every completed layer or section of the Works shall be subject to check testing by the Contractor, at his own cost. Once the Contractor has satisfied himself with the standard of his works, he shall provide the Employer's Agent with the results of his check testing indicating that the work is to specification. In order to minimize delays due to testing, the Contractor shall give the Employer's Agent at least 24 hours' notice of when any portion of the works will be completed to his satisfaction so that the Employer's Agent can arrange for his acceptance control testing to be done.

Failure by the Contractor to notify the Employer's Agent or to provide the required information or, where specified, to perform the required test, will be grounds to exempt the Employer from payment for the associated work and for all subsequent work which would be affected by the failure of the work to be tested.

New water mains will be tested as per City of Cape Town standards and SANS 1200 specifications. Where portions of the water main is rehabilitated, only such portions of works will be required to be tested.

The Employer's Agent will be under no obligation to the Contractor to perform acceptance tests. If the Employer's Agent elects not to perform a particular test after notification by the Contractor, he will issue the Contractor with a written instruction to proceed with the relevant works without the acceptance test being performed.

Nothing contained in this Clause will relieve the Contractor of his responsibilities under the specification or in any way limit the tests which the Employer's Agent may call for or perform in terms of the specification.

PSA 7.1.2 Standard of Finished Work not to Specification

In addition to the provisions of Subclause 7.1.2, the costs of check testing by the Employer's Agent including tests carried out by commercial laboratories after remedial work by the Contractor shall be borne by the Contractor.

PSA 7.2 Approved Laboratories

Replace the contents of sub-clause 7.2 with the following:

Unless otherwise specified in the relevant specification or elsewhere in the Project Specification, the following shall be deemed to be approved laboratories in which design work, or testing required in terms of a specification for the purposes of acceptance by the Employer's Agent of the quality of materials used and/or workmanship achieved, may be carried out:

(a) Any testing laboratory certified by the South African National Accreditation Systems (SANAS) in respect of the nature and type of testing to be undertaken for the purposes of the Contract;
(b) Any testing laboratory owned, managed or operated by the Employer or the Employer's Agent
(c) Any testing laboratory established and operated on the Site by or on behalf of the Employer or the Employer's Agent.
(d) Any other laboratory that the Employer's Agent approves in his absolute discretion.

The cost of such test which meets the specification requirements will be reimbursed to the Contractor in monthly payment certificates. A Provisional Sum has been provided in the Schedule of Quantities to allow for the cost of such testing.

The Contractor shall make due allowance for testing procedures in his construction programme.

PSA 7.5 TESTING FOR ENGINEERING SERVICES

PSA 7.5.1 Pipe Trenches

The Employer's Agent may perform acceptance density tests on pipe trenches in bedding layers and at 300 mm backfill intervals. The Contractor shall notify the Employer's Agent when the bedding layer and each 300 mm increment layer have been completed. Backfilling shall be done in accordance with SANS 1200 DB Clause 5.7.

PSA 7.5.2 Medium Pressure Water mains

The Employer's Agent may perform pressure tests and visual inspections in terms of SANS 1200 on mains after completion of any pipe work. Tests for pipe work under roads in such a position that repairs could affect the roadworks must be completed before the Contractor may proceed with any layerworks.

Pressure tests may be performed after the bedding layer is placed and compacted, and again when backfilling is complete. The pipework shall only be accepted when the second test has passed.

New installations will be tested against the specified testing pressure as per SANS 1200 L.

For point repairs' the test pressure of any portion of replaced pipeline will not be more than the existing working pressure of the particular pipeline under repair.

The Contractor shall provide all plugs and testing apparatus.

PSA 7.5.3 Control of Levels (In General)

In the case of water pipelines the levels shall be checked at changes in gradient or at major bends or connection points. The onus is on the Contractor to arrange and verify the check levelling but any deviation from the specified tolerance remains the responsibility of the Contractor. Water mains will be laid according to the following general guideline:

In footways 700mm min. cover
In roadways 900mm min. cover

PSA 7.6 As-built Information

As the works are progressing, the Contractor shall mark on a separate set of drawings, after checking the information, all "As-Built" details and submit them to the Employer's Agent's Representative for approval on a weekly basis.

Where services have been disturbed, all services shall be surveyed, ends of all ducts or banks of ducts, all pipe bends and the cover and invert levels of all manholes and catchpits shall be surveyed prior to being backfilled.

The Contractor shall supply this co-ordinate and level information in electronic format, with the marked-up drawings at the completion of the contract. This information will be required in both hard copy and in electronic format. The format of as-built electronic information shall be obtained from the Employer's Agent's Representative. No separate payment for this work shall be made in the Schedule of Rates. It shall be deemed to be included in the Contractor's General Obligations.

Refer to the annexure in C3.6 Annexes, "**Protocols Regarding Civil As-built Plans and GIS Data**", for the format of submission of all as-built information.

The Certificate of Completion shall only be issued once the required information has been submitted and approved.

PSA 8 MEASUREMENT AND PAYMENT

PSA 8.2.2 PAYMENT – Time-related Items

Delete the second sentence and replace with the following:

Subject to the provisions of 8.2.3 and 8.2.4, the tendered rate per day shall be multiplied by the number of days required to complete the site activities from the commencement date of the contract until the end of the period for completion of the works.

PSA 8.3 SCHEDULED FIXED-CHARGE AND VALUE-RELATED ITEMS

PSA 8.3.1 Contractual Requirements

Add the following items:

PSA 8.3.1.1 Security (Provision of Performance Guarantee) Unit: Sum

The unit of measurement shall be for the entire contract period and payment thereof will be made after commencement of the contract.

The tendered rate shall include for all costs involved to comply with the requirements as stipulated.

PSA 8.3.1.2 Insurance (Blanket Policy) Unit: Sum

The unit of measurement shall be one year and payment thereof will be made at the beginning of each year of the contract respectively.

The tendered rate shall include for all costs involved to comply with the requirements as stipulated.

PSA 8.4 SCHEDULED TIME-RELATED ITEMS

Wherever the words "The sum "*occurs in Subclause 8.4 replace with the words* "The sum per day ".

*Wherever the Unit "*Sum" *occurs in Subclause 8.4 replace with the Unit* "day ".

PSA 8.4.2.2 Facilities for the Contractor

The sums tendered for in SANS Items 8.3.2.2 and 8.4.2.2 for the Contractor's fixed and time related charges shall include for all the requirements described.

Contractor's Fixed Charges: The camp site will only be established if warranted. It is envisaged that the Contractor will not establish a camp site for every Works project.

Should the Contractor wish to use any areas outside the site as defined above, he shall negotiate for the use of and rent for, such additional areas, with the affected landowners. Any damage to or desecration of land outside the site shall be made good to the satisfaction of the landowner and the Employer's Agents Representative at the Contractor's expense

PSA 8.7 Daywork

(a) Labour charges

(i) (description of employee/designation/skill indicated) Unit: hour (h)
(ii) (etc, for other designations/skills) Unit: hour (h)

The unit of measurement shall be the hour of time worked by the particular employee on the designated work on instruction by the Employer's Agent.

The daywork rates submitted for labour in the schedule of quantities shall be the cost of labour for each skill level and shall apply only to the number of workers approved in writing by the Employer's Agent.

The rates shall be for normal working hours and shall be increased pro rata for overtime at the standard rate applicable if the work performed outside working hours is approved in writing by the Employer's Agent.

The tendered rates shall include full compensation for all costs for salaries and wages, use and maintenance of tools and equipment, holidays with pay and financial charges of any description incurred by the Contractor and his subcontractors as well as for all insurance, accommodation, travelling, travelling time, supervision, overheads, profit, obligations, risks and any other emoluments and incidentals necessary for labour to execute work as daywork.

(b) Material charges

(i) Actual cost of material (excluding VAT) Unit: Provisional Sum
(ii) Handling cost in respect of subitem (b)(i) Percentage (%)

Expenditure under this item shall be made in accordance with Clause 6.5 of the General Conditions of Contract. The provisional sum allowed shall include for the actual cost incurred for materials used in authorised daywork. The actual costs for materials shall not be subject to contract price adjustment.

The tendered percentage is a percentage of the amount actually spent under subitem (b)(i) and shall include full compensation for the handling costs of the Contractor, profit, overheads and incidentals in connection with materials used for daywork on the instructions of the Employer's Agent.

Payment for expenditure under this item will be made in full as and when the money is expended subject to written proof by the Contractor of payment of invoiced amounts.

(c) Plant charges

(i) (description of plant indicated) Unit: hour (h)
(ii) (etc for other plant) Unit: hour (h)

The unit of measurement shall be the hour actually worked by each item of plant (vehicle, machine or equipment) on the designated work on instruction by the Employer's Agent.

The Contractor and the Employer's Agent will agree on the method of recording the working hours prior to the commencement of work. Any long period of idling at any one time which in the opinion of the Employer's Agent is beyond that required for normal operating conditions will not be paid for as working time. Non-working hours for any reason shall not be measured for payment.

The tendered rates include full compensation for furnishing and using the plant, including the cost of plant operators, consumable stores, fuel, ground-engaging tools, maintenance and for all other incidentals necessary to execute the authorised daywork as specified.

Where there is ambiguity between the power developed at the flywheel and mass of machine, the power shall govern the measurement category.

(d) Other plant not specified above Unit: Provisional Sum

The provisional sum provided to cover the cost of other plant shall be expended in accordance with Clause 6.5 of the General Conditions of Contract.

PSA 8.8 TEMPORARY WORKS

PSA 8.8.1 Main Access Road to Works Unit: m

Add the following to the subclause:

The Contractor will have to satisfied himself with regard to the accessibility of the site and the standard of access available via the existing main roads, minor roads and tracks. The tendered rates shall cover the cost of the upgrading or constructing where necessary, and maintenance of existing access, including new access roads as required by the Contractor.

The cost of maintenance, watering as specified in PSA 5.8(a)(iii) and temporary repair of all existing access roads, new access roads required by the Contractor and tracks shall be included in the sum. The tendered rate shall cover the cost of all maintenance required to the standard specified throughout the construction period and the reinstatement/scarifying of the roads as specified in PSA 5.8(b).

PSA 8.8.2 Dealing with traffic

Add the following to the subclause:

Work relating to dealing with traffic (or accommodation of traffic) is to be carried out in accordance with Accommodation of Traffic included in the Particular and Generic Specifications section. No separate measurement and payments for dealing with traffic is done in the Accommodation of Traffic Section.

(a) Point repair (Up to 15 meter) Unit: No
(b) Point repair (Over 15m and up to 30 meter) Unit: No
(c) Traffic accommodated - Short Term works Unit: (kilometer) km
(d) Urban Streets – Two-way lane closure Unit: km

(e) Urban Streets – One-way traffic accommodated Unit: km
(f) Urban Streets – Lane closure in and beyond junction Unit km

The tendered rate for the above point repairs shall cover the all the costs of dealing with traffic for the point repair for up to the entire length as required and the maintenance until completion of the works.

The unit of measurement for items (c) to (f) shall be the kilometre, measured once along the centre-line of the road carriageway, of temporary deviations, existing roads used as temporary deviations and roads constructed, rehabilitated and/or resurfaced in half-widths. The kilometre length shall include the roadway along which traffic delineators / cones are placed for traffic accommodation (includes the transition area, the buffer zone, work area and termination area, but excludes the advance warning area). In the case of a dual carriageway, each separate road carriageway shall be measured.

The tendered rate shall include full compensation for accommodating traffic during the different specific construction operation(s) or work phases included in the contract. The tendered rate shall also include full compensation for the provision of communications equipment required for regulating the traffic, arranging for the moving of services and facilities, solving traffic problems, complying with the legal requirements of all authorities concerned, for providing temporary access to private property, and for the provision and maintenance of temporary drainage.

The tendered rates sum shall include full compensation for the relocation of traffic-control facilities including dismantling, storing if necessary, transporting, re-erecting and inspecting the traffic-control facilities, and for all labour, equipment, constructional plant and incidentals as specified or shown on the drawings.

The tendered rate shall also include full compensation for the specified general requirements and all incidental items of cost which are required.

The rate shall also include for the sign stand, for the provision of two sand bags per delineator to hold it in position and for their replacement when necessary.

The tendered rate shall also include full compensation for the provision of a full-time traffic safety officer and for all the duties performed by him or her.

Replace item 8.8.4 with the following:

PSA 8.8.4 Existing services

PSA 8.8.4.1 Location and protection of existing services

Where particular items are provided in other sections of the schedules the costs of detection, exposure, protection and alterations shall be covered by such particular items. Where no such particular items are provided and where there is reason to expect the presence of such a service or services, the following items will apply:

(a) Supply or hire of specialist equipment for detection of existing services Unit: Sum

(b) The use or hire of specialist equipment for detection Unit: Hour

The items shall cover the cost of providing and operating suitable equipment necessary in order to locate all existing services likely to be affected by the construction activities. Alternatively an approved specialist firm may be employed to carry out the work.

PSA 8.8.4.1 Hand excavation necessary for locating and exposing existing services in all materials:

(a) In all roadways Unit: m^3

(b) In all other areas Unit: m^3

The rates shall cover the cost of excavating by means of hand tools within authorised dimensions, for all precautionary measures necessary to protect the services from damage during excavation and backfilling and for subsequent backfilling and compacting. Compaction of material in all areas except in roadways shall be to 93% of modified AASHTO density.

The rate for hand excavation in roadways shall also include compensation for compacting excavated or selected backfill material to 100% of modified AASHTO density. Reinstating layerworks and surfacing shall be measured and paid for under SANS 1200 DB.

The tendered rates shall also include for keeping excavations safe, for dealing with surface and subsurface water and for removal of surplus excavated material from the site.

Add the following item:

PSA 8.8.7 Dealing with water:

(a) Establishment	Unit: Sum
(b) Dealing with subsurface water	Unit: day
(c) Dealing with surface water	Unit: day

Dealing with subsurface water by means of a well point system:

(a) Establishment	Unit: Sum
(b) Installation of well points and manifold	Unit: No
(c) Operate and maintain (150 points max)	Unit: day
(d) Operate and maintain (300 points max)	Unit: day
(e) Provisional Sum for other Specialist dewatering not covered above	Unit: Prov Sum
(f) % Profit and Attendance for item above	Unit: %

The sum shall cover the cost for the provision, operation, maintaining and removal of all plant and materials required to deal with any water anywhere on the Site as required in terms of Sub clause 5.1.3 of SANS 1200 D and Sub clause 5.1.2 of SANS 1200 DB. No additional payment will be made for "Special water hazards".

The sum shall cover the cost of providing the necessary plant or materials, or both, fully erected and operative on the Site, the cost of supplying, operating and maintaining pumps, well points, sheeting, close timbering, and other equipment, as applicable, for 24 hours a day, 7 days a week, throughout the period during which the facilities are required, and the cost of removing such goods and restoring the Site to its original condition on completion of that part of the project for which the temporary works were erected.

PSA 8.8.8 Watching, lighting and temporary fencing

PSA 8.8.8.1 Provision of PSiRA Security Guards Unit: Man-day

(a) PSiRA Grade A Guard
(b) PSiRA Grade B Armed Guard
(c) PSiRA Grade B Unarmed Guard
(d) PSiRA Grade C Armed Guard
(e) PSiRA Grade C Unarmed Guard
(f) PSiRA Grade D Unarmed Guard

(g) Extra-over item (a-f) above for security guards working overtime, night work, or on a weekend or public holiday when instructed.

This item shall include for provision of security services on weekdays and weekends and public holidays and any other security measures which the Contractor may wish to employ during the contract as specified in C3.1 sub clause 7.4.

The Service Provider shall take every precaution to ensure the safety of all staff and to protect the infrastructure being rehabilitated from theft and vandalism. The Service Provider shall be responsible for the safety and security of his personnel, plant/equipment on site and the working area in general and at all times, from establishment to de-establishment. The Service Provider shall therefore acquaint himself with the current situation in the area with regard to safety and security (liaising with the local police as necessary) and shall provide all security measures, including the employment of accredited security services, as deemed necessary to comply with the requirements under this clause of the Contract.

All security staff employed on site must be registered with the Private Security Industry Regulatory Authority (PSiRA). Proof of such registration must be made available to the employer's agent upon request. The security arrangements must be discussed with, and approved by the Employers Agent representative prior to commencement of the work.

Unarmed is defined as any non-lethal equipment such as a baton, stun gun, taser or pepper spray. Armed shall include a firearm along with the relevant South African Police Service firearm competency. Armed

guards will only be utilised under extraordinary circumstances and will require the written approval of the Employers Agent. The unit of measurement shall be a 12 hour shift or portion thereof worked by a security guard.

The City of Cape Town have many areas known for high levels of crime. Security guards shall be provided at the site camp as a minimum security measure as instructed or agreed. The Contractor shall allow for his own additional security to improve safety in and around the site and its offices. Notwithstanding any other clauses in this document the Contractor should allow for Insurances, Fencing, Lockable Gates, and any other security measures deemed necessary by the contractor to keep all site personnel and equipment safe.

The unit of measure for item (a - f) shall be the number of man-days that the security guard(s) have worked and shall be measured from the time the person(s) arrives at their post until the time they leave with a maximum 12 hour shift and pro-rata if less than 12 hours. This item shall only be paid for additional security guards requested or instructed by Employers Agent or as agreed in advance between the Employers Agent and Contractor. Security not agreed on in advance shall not be payable.

The tendered rate shall be based on the PSIRA published rates for the applicable grade and cover the cost of wages, transport to and from site, all personal protective equipment, any other costs, profit and mark up. The tendered rate for (g) shall be based on the PSIRA published rates for overtime/night work, public holidays or weekends for un-armed security guards and shall only cover the additional costs associated with working overtime, working at night or working on a weekend or public holiday. The basic rate shall be covered in item (a-f). This item will only be paid when there has been a specific request for work to be carried out during overtime, at night, or on a weekend or public holiday, or if it has been agreed upon in advance between the Employers Agent and Contractor. If the contractor provider chooses to work during these times for whatever reason without an instruction or a prior agreement, this item will not be paid.

Temporary fencing of excavations Unit: m

This shall include for supplying all delineators, poles and warning tape and fencing where required, providing all labour necessary for the operation, supervising the work, interim removal and re-erection and any other incidentals necessary to satisfactorily complete construction.

Lighting Unit: Day

This shall include for supplying all the lighting units, chains, padlocks and poles, providing all labour necessary for the operation, all maintenance of the lighting system, supplying all cables and electrical power as required, supervising the work, the interim removal and re-erection of the lighting units, and any other incidentals necessary from the satisfactory operation of the lighting.

PSA 8.8.9 Liaison with Service Authorities Unit: Sum

The tendered sum shall include full compensation for liaising and interacting with all the relevant Service Authorities for this contract document, for obtaining the necessary wayleaves for services affected by the Works, allowing them onto the site and accommodating them for any service protection, relocation or supervision which may be required.

The Contractor shall at all times abide by any conditions imposed by such way leaves permissions or permits. The Contractor shall ensure that all wayleaves, permissions and permits are kept on site and are available for inspection by the relevant service authorities on demand. The Contractor shall also ensure that any wayleaves in respect of electricity services are renewed timeously every three months.

The City of Cape Town will provide the funds for the electrical guarantees when required for works to be executed in HIGH Voltage electrical servitudes of the City of Cape Town's electrical department.

However, the contractor is to ensure to not damage these cables. The cost of repairing any damage to services, due to miscalculations or negligence on the part of the Contractor or his failure to carry out the duties set out in this Clause, shall be borne by the Contractor. The contractor is to make good with the electrical department where monies for damages are owing within 7 days of receipt of such request for payment.

Should the contractor damage cables, and not pay the electrical department the outstanding monies within the required 7 days, the City reserves the right to claim such amounts from the contractors standing Performance guarantee during contractual stage.

Any works under construction by the contractor at the time of such negligence, will be put on hold until the full required value of the Performance Guarantee has been reinstated and proof of such in the form of an accepted original Performance Guarantee has been provided to the Contract's Manager.

The contractor cannot claim any standing time or extension of time on any projects in construction stage, resulting from the required performance guarantee not being in place as per the contract requirements.

Application for use of a Public open Space for site camp is covered by a Provisional Sum. Rental of the site is also covered by a Provisional Sum.

PSA 8.8.10 Survey

PSA 8.8.10.1 Setting out

The cost of setting out, including the cost of establishing temporary bench marks and pegs in terms of PSA 5.1.1, will be held to be covered by the rates tendered for the fixed charge and time related items in the Schedule of Rates.

PSA 8.8.10.2 Survey beacons and boundary pegs

Any costs in connection with the replacement of beacons or pegs for which the Contractor is responsible in terms of Sub clause 5.1.2 of SANS 1200 A will be recoverable from the Contractor by deduction from the monthly certificate of payment.

PSA 8.8.10.3 As-built survey

The costs for the relevant item shall be included in the Preliminary and General items and shall cover all costs associated with providing the Employer's Agent with the required as-built information of the Works in terms of PSA 5.1.3.

Add the following items:

PSA 8.9 HEALTH AND SAFETY

PSA 8.9.1 Complying with Health and Safety requirements Unit: day

The tendered rate shall include full compensation to the Contractor for compliance with all the requirements of the OHS Act and Regulations (including the Construction Regulations 2015 and OHS Specification, other statutory requirements and provision of qualified OHS officer) at all times for the full duration of the Contract.

PSA 8.9.2 Asbestos Specialist Services:

(a) Handling and disposal of asbestos containing waste from site to the permitted Vissershok Landfill site, in accordance with legislation Unit: Sum

(b) Transport of asbestos-containing waste to the licensed privately owned operated hazardous waste disposal facilities (rated H:H) at Vissershok for waste with classification ratings of 1 (extreme risk), in accordance with Asbestos Regulation.
Unit: ton.km

(c) Cost of dumping at privately owned, permitted Vissershok landfill site (Original tipping slips are required for audit purposes) Unit: ton

Payment for this item shall include all the statutory requirements and recordkeeping as stated in Section 9 and 16 of the Asbestos Regulation GNR.1196 of 2020.

PSA 8.10 Complying with Environmental Management requirements Unit: day

The amount tendered for this item shall allow for full compensation for all costs, of whatever nature, for adhering to the Environmental Management Plan, including provision of the ECO Officer, as set out in C3.1 Description of works, sub-clause 3.1.5.13 and C3.5 Management, Particular Specification E of this document.

PSA 8.11 Noise Exemption Permit Unit: Sum

The tendered rate must include all costs incurred for obtaining a Noise Exemption Permit for each "Works Project" prior to construction. This permit is required for all works including CCTV.

PSC SITE CLEARANCE

PSC 1 SCOPE

The site is situated in a developed urban environment. The contract will require the demolition and removal or storage of existing materials on the site prior to commencement of the works.

PSC 3 MATERIALS

PSC 3 .1 Disposal of Material

No material shall be spoiled on the site. The Contractor shall make his own arrangements for the provision of a suitable spoil area off the site.

The Contractor will be held solely responsible for observing the by-laws and regulations of the relevant local authorities with regard to fire and for any injury to persons and damage to property. The Contractor shall indemnify the Employer against all claims for damages arising from this source.

The Contractor shall obtain his own dumping sites for the disposal of material and all transport costs shall be included in the rates tendered for site clearance.

PSC 5 CONSTRUCTION

PSC 5.1 Areas to be cleared and grubbed

Add the following items:

Only the approved minimum area required for the execution of the Works including areas on which material shall be stockpiled for later reuse or on which material shall be dumped and spread, shall be cleared and grubbed.

Pipeline routes shall be cleared to a distance of 1,5m on both sides of the pipeline centre line. Route pegs or markers shall not be destroyed or damaged during clearing operations.

Add the following items:

The following applies to clearing widths:

(a) The width to be cleared for the road shall not exceed 6,0m.

(b) The area to be cleared for parking zones shall not exceed the specified dimensions by a margin of 0,5m measured from the perimeter.

PSC 5.2 Cutting of trees

PSC 5.2.3 Preservation of trees

PSC 5.2.3.2 Individual trees

Replace the last sentence with the following:

An amount of **R10 000.00** will be deducted from moneys due to the Contractor as a penalty for every tree that is damaged or removed unnecessarily.

PSC 5.5 RECLEARING OF VEGETATION

Add the following items:

When areas have to be re-cleared on the written instructions of the Employer's Agent, such re-clearing shall be carried out at the Contractor's own cost and the Contractor is therefore advised not to clear the areas too soon.

PSC 5.6 CONSERVATION OF TOPSOIL

Add the following:

Topsoil up to a depth of 150 mm, where shown on drawings or as directed by Employer's Agent on site, shall be removed from the above specified cleared areas and stockpiled on approved sites for later reuse.

Until required for spreading, the stockpiles of topsoil material shall be stabilized by watering or other approved means.

Add the following new sub clause:

PSC 5.9 REMOVAL AND STORAGE OF KERBING, CHANNELLING, EDGING, PAVING AND GRASSING

Where indicated by the Employer's Agent, the Contractor shall remove existing kerbing, channelling, and edging, paving and grass sods and store all materials such kerbing, channelling and edging for re-use and reinstatement on the site of the works.

Where existing kerbs are to be removed and the existing channels are to remain, the Contractor shall carefully remove the kerbs without disturbing the channels. Any channels which are disturbed or damaged during this operation shall be replaced at the Contractor's expense.

The unit of measurement will be the meter of material removed and stacked for re-use.

PSC 8 MEASUREMENT AND PAYMENT

PSC 8.1 BASIC PRINCIPLES

Add the following:

The thickness of the layer that will unavoidably be stripped during clearing of vegetation will be taken as 150 mm. This implies that levels used in earthworks quantity calculations will be 150 mm lower than the original levels.

PSC 8.2 PAYMENT

PSC 8.2.1 Clear and grub

Replace the first line with the following:

The area designated by the Employer's Agent to be cleared and grubbed will be measured in square meter to the nearest square meter or,

PSC 8.2.7 Dismantle and remove pipelines, electricity transmission lines, cables, etc.

Also applies to underground structure

Replace the second paragraph with the following:

The tendered rates shall include full compensation for the detection, disconnection, removal, disposal at a dumping site and any charges for the use of the dumping site.

In the event of the Contractor damaging any of the services he will replace it at his own cost.

a) Pipelines

Pipelines (all materials)	
i) Up to 250mm diameter	Unit: m
ii) Over 250mm diameter up to 500mm diameter	Unit: m
iii) Over 500mm diameter	Unit: m
Pipelines encased in concrete (all materials)	
iv) Up to 250mm diameter	Unit: m
v) Over 250mm diameter up to 500mm diameter	Unit: m
vi) Over 500mm diameter	Unit: m

The rate shall cover the cost of the dismantling, break up if encased in concrete, removal and disposal of existing pipe of nominal sizes to a site provided by Contractor.

b) Valve or Hydrant Chambers (Concrete) Unit : No

The rate shall cover the cost of the demolishing, removal and disposal of existing fibre cement or concrete manholes to a site provided by Contractor.

c) Valve or Hydrant Chambers (Brick) Unit : No

The rate shall cover the cost of the demolishing, removal and disposal of existing brick manholes to a site provided by Contractor.

d) Kerbs, edging and channels Unit : m

The rate shall cover the cost of the removal and disposal of existing kerbs, including all necessary excavation to site provided by Contractor.

e) Asphalt

i) 0mm to 50mm thick Unit: m²
ii) Over 50mm thick Unit: m²

The rate shall cover the cost of the removal and disposal of existing asphalt sidewalks to a site provided by Contractor.

f) Road signs Unit: No

The rate shall cover the cost of the removal and disposal of existing road signs to a site provided by Contractor.

g) Vertical poles / bollards Unit: No

The rate shall cover the cost of the removal and disposal of existing vertical poles or bollards to a site provided by Contractor.

h) Fence

i) All wire type fencing Unit: m
ii) All palisade type fencing Unit: m
i) Vibracrete walls Unit: m

The rate shall cover the cost of the removal and disposal of existing fences to a site provided by Contractor.

i) Trees and Plants / Shrubs Unit : No

The rate shall cover the cost of the removal and disposal of existing small trees and plants/ shrubs to a site provided by Contractor.

j) Grass and lawns Unit : m²

The rate shall cover the cost of the removal and disposal of existing grass and lawns to a site provided by Contractor.

k) Concrete in roads, driveways or walkways

i) Up to 100mm thick concrete Unit: m²
ii) Over 100mm and up to 200mm thick concrete Unit: m²
iii) Over 200mm thick concrete Unit: m²

The rate shall cover the cost of the cut, removal and disposal of existing concrete roads, driveways or walkways to a site provided by Contractor.

l) Brick Paving in roads, driveways or walkways Unit: m²

The rate shall cover the cost of the removal and disposal of existing brick paved roads driveways or walkways to a site provided by Contractor.

m) Concrete Thrust Blocks Unit: m^3

The rate shall cover the cost of the cut, removal and disposal of existing concrete thrust blocks to a site provided by Contractor.

PSC 8.2.10 Remove topsoil to a nominal depth of 150mm, stockpile and reinstate ..... Unit: m^3

The tendered rate shall include full compensation for removing topsoil to a depth of 150 mm, temporary storing of material, transporting and reinstating.

Add the following item in sub clause 8.2:

PSC 8.2.11 Remove and dispose of rubble Unit: m^3

The rate shall cover the costs of dismantling and demolishing the items not covered in PSC 8.2.7 as required and the costs of loading, transporting and dumping of the material at a registered dump site and any charges for the use of the dumping site to be identified by the Contractor.

PSC 8.2.12 Remove and stockpile material for later reinstatement

a) Kerbs, edging and channels Unit: m

The tendered rates shall include full compensation for the careful removal of kerbs, edging or channels, the temporary stockpiling and cleaning thereof and the reinstatement once the work has been completed, including all necessary excavation, backfilling and concrete bedding and backing with 20 MPa concrete. In the event of the contractor damaging any of the kerbs, he will replace it at his own cost.

b) Road signs Unit: No

The tendered rates shall include full compensation for the careful removal, the temporary stockpiling and cleaning thereof and the reinstatement once the work has been completed, including all necessary excavation, backfilling and concrete bedding and backing with 25 MPa concrete. In the event of the contractor damaging any of the signage, he will replace it at his own cost.

c) Trees and Plants / Shrubs Unit: No

The tendered rate shall cover the cost of careful removal, lifting, removing, transporting, stacking and maintaining for 10 days.

d) Vertical poles / bollards Unit: No

The tendered rates shall include full compensation for the careful removal, the temporary stockpiling and cleaning thereof and the reinstatement once the work has been completed, including all necessary excavation, backfilling and concrete bedding and backing with 20 MPa concrete. In the event of the contractor damaging any of the poles/bollards, he will replace it at his own cost.

e) Grass and lawns Unit: m^2

The tendered rate shall cover the cost of cutting, lifting, removing, transporting, stacking and maintaining the lawn sods for 10 days.

f) Brick Paving in roads, driveways or walkways Unit: m^2

The tendered rate shall include full compensation for the careful removal and stockpiling of the existing paving and sub-base and the compaction of the sub-base to 95% MOD AASHTO density, the placement of a 25mm thick clean sand layer from commercial sources and the careful reinstallation of the brick paving to suit the existing adjacent levels and to ensure adequate surface drainage of stormwater.

g) Fence

i) All wire type fencing Unit: m
ii) All palisade type fencing Unit: m
iii) Vibracrete walls Unit: m

The rate shall cover the cost of taking down the vibracrete walls and fences (palisade and wire type), coiling wire, sorting and stacking all material at sites indicated by the Employer's Agent. The rate shall cover the cost of loading, transporting, offloading all material and reinstallation of vibracrete walls and fences to previous position and condition. Any materials damaged by the Contractor must be replaced by the Contractor.

PSC 8.2.13 Remove existing and install new:

a) Road signs Unit: No

The tendered rates shall include full compensation for the removal, disposal thereof and the supply and installation of new road signs, including all necessary excavation, backfilling and concrete bedding and backing with 25 MPa concrete.

b) Trees and Plants / Shrubs Unit: No

The tendered rate shall cover the cost of removal, disposal thereof and the supply, installation and maintenance of new trees, plants or shrubs.

c) Vertical Poles / bollards Unit: No

The tendered rates shall include for the careful removal, the disposal thereof supply and installation of new poles or bollards, including all necessary excavation, backfilling and concrete bedding and backing with 20 MPa concrete.

d) Fence

i) All wire type fencing Unit: m
ii) All palisade type fencing Unit: m
iii) Vibracrete walls Unit: m

The tendered rate shall cover the cost of taking down the fences, deposing thereof, the supply and installation of fencing and the cost of temporary bracing the sections of fence not taken down. The rate shall also cover the cost of all excavation necessary and the disposal of all rubble.

PSC 8.2.14 Saw Cutting of existing surfaces Unit: m

The rate shall cover the cost for saw cutting of premix including all markings and setting out to ensure that all saw cutting is done in a straight line for open trench road crossings. This will only apply when existing asphalt, concrete, paving and other hard surfaces were cut for removal and the edge of surface not to be excavated was damaged and needs to be replaced. The tendered rate shall include full compensation for neatly saw cutting the existing asphalt, concrete, paving and other hard surfaces. Where existing asphalt is saw cut, the rate shall include for the application of an approved tack coat on the joint face of the existing asphalt.

PSC 8.2.15 Overhaul

No payment shall be made for overhaul. All haulage shall be considered freehaul.

PSC 8.2.16 Removal of Bees Unit: Prov Sum

The tendered rate shall include full compensation for the safe and careful removal of bees, including the Call out and / or assessment fee, travel costs, removal of a Colony hanging in easily accessible position or in a difficult or dangerous position.

PSDB EARTHWORKS (PIPE TRENCHES)

PSDB 3 MATERIALS

PSDB 3.1 Classes of Excavation

For the purposes of measurement and payment in this contract, soft excavation, intermediate and hard rock remains as classified in this clause.

PSDB 3.5 BACKFILL MATERIAL

a) *Substitute "from trenches" in DB 3.5(a) with "from trenches, channels or street excavations".*

Add the following to DB 3.5.

b) All pipe trenches underneath the roadway must be backfilled with sand of upper selected layer quality compacted to 100% of the modified AASHTO maximum density. Sand is defined as non-plastic material and complies with the following sieve analysis:

% passing 4.740 mm sieve	95% minimum
0.425 mm sieve	50% minimum
0.075 mm sieve	10% maximum

Add the following to DB 3.5(b):

c) All pipe trenches in street reserves shall be classified as areas subject to loads from road traffic.

d) All pipe trenches underlying or adjacent to the carriageway shall be backfilled with sand complying with the requirements, as specified in DB 2.3.

PSDB 3.6 MATERIALS FOR REINSTATEMENT OF ROADS AND PAVED AREAS

PSDB 3.6.1 Subbase and Base

Base: Existing road layers shall be reinstated with type G4 base (with crushed stone compacted to 98% Modified AASHTO density) 150 mm thick after compaction

The base layer shall be benched so that the layer overlaps the underlying subbase layer by at least 150 mm on either side of the trench excavation.

Subbase: Existing road layers shall be reinstated with type G5 subbase (with crushed stone compacted to 95% Modified AASHTO density) 150 mm thick after compaction.

The subbase layer shall be benched so that the layer overlaps the underlying selected layer/ insitu by at least 150 mm on either side of the trench excavation.

PSDB 3.6.2 Gravel

Gravel material shall be a natural gravel subbase especially for reinstatement of shoulders compacted to 95% Modified AASHTO density with CBR>45 and a maximum Plasticity Index (PI) of 6.

PSDB 3.6.4 Asphalt Surfacing

The surfacing shall consist of a medium continuously graded asphalt surfacing – CCC Medium or COLTO Medium. The edges of the surfacing / seal shall overlap the base by at least 150 mm on both sides of the trench excavation. The joints and both sides of the trench to the existing asphalt edges must be sealed with Colseal. A tack coat shall be applied to the finished surface of the base course layer.

PSDB 3.8 GEOTEXTILE BLANKET

In addition to the requirements of Sub clause 3.1.3 of SANS 1200 DK the geotextile shall comply with the following, unless otherwise specified:

Minimum mass:	150 g/m2 (minimum)
Strength in all directions:	6 kN/m (minimum)

The Employer's Agent's approval of the make and grade of the geotextile shall be obtained by the Contractor before the Contractor orders any geotextile or uses it on the Works.

"Bidim" or "Kaymat" or equivalent geotextile will be acceptable.

PSDB 4 PLANT

PSDB 4.2 Control of Water

It can be expected that the existing pipelines may lie below the water table. These conditions will necessitate that the Contractor will have to adopt appropriate techniques or provide plant as set out in sub clause 4.2 to control the water. The Contractor's attention is drawn to sub clause 5.1.2 of SANS 1200DB and PSDB 5.1.2 in connection with the control of water.

The Contractor shall protect all excavations against any water ingress whether by seepage, rains, storms, floods or any other means.

The Contractor must provide all the necessary equipment (pumps, piping, etc.) to remove any water found in the excavation by pumping and/or bailing. Water is cleared in such a way that it cannot seep or flow back into the excavations.

Any water present in the excavation must be pumped and/or bailed out before backfilling. Water must be pumped into the Storm water and not into a sewer manhole.

PSDB 5 CONSTRUCTION

PSDB 5.1 PRECAUTIONS

PSDB 5.1.1 General

Trench excavation for new pipelines will be generally by machine after existing services have been exposed by hand. Where excavation by machine are not possible allowances will be made for trench excavation by hand.

Trench excavation for point repairs will be generally by hand after existing services have been exposed.

The trench excavation shall be such that the base width includes sufficient working space.

The existing pipeline may be corroded or damaged and excavation in close proximity to it will have to be performed with care to avoiding collapsing the pipe. The excavation around the existing pipe from 0.5m above its crown shall be by hand.

PSDB 5.1.2 Stormwater, Seepage and Dewatering of Excavations

In addition to the Contractor's responsibilities for dealing with water, the Employer's Agent may order the Contractor to place a crushed stone bedding layer (minimum thickness 150mm) on the trench bottom.

Prior to the provision of the stone layer, grade A2 or equivalent geofabric filter material of minimum mass of 150g/m^2, must be installed on the trench bottom. After the placement of the stone bedding, the geofabric filter material shall be folded over the stone with a minimum overlap of 300mm to form an enclosed drain. The specified bedding material shall then be used to bed the pipe.

The Contractor will only be paid for providing and laying the stone bedding layer and the geofabric filter material after receipt of a written order to do so from the Employer's Agent.

PSDB 5.1.3 Accommodation of traffic and access to properties

Replace the word "and" at the end of sub clause 5.1.3 (a) with a full stop and replace item (b) with the following:

(b) Where necessary to achieve compliance by the Contractor with his obligations in terms of the Scope of Works to provide and maintain pedestrian and vehicular access to properties affected by the works, the Contractor shall construct and maintain to the satisfaction of the Employer's Agent, such temporary access roads around, and/or steel or timber bridges over excavations in roads, pavements, entrances or accesses to properties.

Temporary pedestrian access bridges shall be at least 1,2 m wide and temporary access bridges for vehicles shall be at least 3,6 m wide. All temporary access bridges shall be fitted with handrails as well as protective mesh fencing on both sides.

On completion of the work, the Contractor shall dismantle and remove all such temporary constructions and reinstate these areas to their former condition.

Add the following new sub clauses to sub clause 5.1:

PSDB 5.1.5 Stability of trench excavations

The precautions for excavations as specified in Clause 5.1.1 of SANS 1200 D, and the relevant amendments to the Standard Specification's clauses, shall also apply to all trench excavations.

The Contractor shall take all the steps necessary to ensure that no person is required or allowed to work in a trench or any other unsupported overhanging excavation which is more than 1,5m deep, and any excavation which has not been adequately supported, shored or braced if there is any danger whatsoever of the sides of the excavation collapsing. The support, shoring or bracing to be designed and constructed by the Contractor, shall be strong and sturdy enough to support the sides of the excavation in question. The temporary works structures to be signed off by a qualified and competent engineer.

Add the following items:

PSDB 5.1.6 Protection of Existing Services

The Contractor shall exercise all the necessary care to prevent damage to known services during construction operations. Major excavating equipment and other plant shall not be operated in dangerously close proximity to these services. Where necessary, excavation in close proximity to these services shall be carefully carried out by means of suitable hand tools, excluding picks wherever their use could cause damage to the services. No additional payment will apply to such more difficult work.

Services left exposed shall be suitably protected from damage and/or theft.

PSDB 5.1.7 Liability for Damage and Insurance

The Contractor's attention is drawn to the relevant clauses of the General Conditions of Contract and Contract Specific Data regarding liability for damage to the Works, or property, or injury to persons arising from the construction of the Works. His attention is also drawn to the General Conditions of Contract regarding insurance to be effected by the Contractor. Special attention is drawn to the exclusions in this insurance policy and particularly to the exclusions regarding consequential damage.

PSDB 5.1.8 Alterations and Repairs to Existing Services

Unless the contrary is clearly specified or ordered, the Contractor shall not carry out any alterations to existing services. Where this may be necessary, the Contractor shall inform the Employer's Agent, who will either make arrangements for such work to be executed by the owner of the service, or instruct the Contractor to make such arrangements himself.

Where existing services are damaged by the Contractor, he shall immediately inform the Employer's Agent, or when this is not possible, the relevant authority, and shall obtain instructions as to who should carry out repairs. In urgent cases, the Contractor shall take all necessary steps to minimize damage to and the interruption of the service. No repairs shall be attempted to telecommunication cables, or electric power lines and cables.

No liability for damages arising from any delay in having such alterations or repairs effected will be accepted by the Employer. The Contractor shall provide all reasonable opportunity, access and assistance to persons doing alterations or repairs to existing services.

PSDB 5.1.9 Access to Services

The Contractor shall allow all reasonable access to any Authority for the purpose of maintaining, laying and/or relaying any service, cables or mains during the period of this Contract.

The Contractor shall co-operate with other Contractors or Authorities responsible for the installation of water reticulation, electricity cables and telephone cables and shall arrange his programme accordingly.

PSDB 5.3 Site Clearance

Delete the first sentence and replace with the following:

The Contractor shall clear an area along the pipe route as designated by the Employer's Agent.

PSDB 5.4 Excavation

Add the following:

All excavated material shall be placed in such a way and in such positions as not to endanger or interfere with the works, pedestrians, traffic or property and the Employer's Agent may order the Contractor to remove any material that is considered liable to endanger or interfere with the works, pedestrians, property or traffic and to place such material in another position as indicated by the Employer's Agent.

The toe of the stockpile shall be trimmed well back from the edge of the trench so as to leave a minimum 1,0 m clearance between the edge of the stockpile and the edge of the trench. The Contractor shall keep this strip clear of excavated material at all times and take all necessary steps to prevent mixing with material set aside for backfill.

The Employer's Agent may, in terms of Subclauses 5.6.3 and 5.6.4, order the Contractor to remove any material which he considers liable to endanger or interfere with the Works, private property, traffic, or pedestrians, and to place such material at some other approved position. If the necessity for such removal is, in the opinion of the Employer's Agent, a result of some default on the part of the Contractor, the cost thereof shall be borne by the Contractor, otherwise the cost will be borne by the Employer at a sum pre-agreed with the Employer's Agent or measured as Daywork, whichever is the more appropriate in the opinion of the Employer's Agent.

Add the following:

PSDB 5.4.1 Shoring of Pipe Trenches

The Contractor shall take full responsibility for the safety of excavation, and shall carry out all measures necessary to make secure, by timbering and strutting or sheet piling or any other suitable method, the excavated face or by side sloping where it is not required to act as a mould to concrete work. All timbering and strutting must be of sufficient strength and capable of being removed readily as the work proceeds.

The Contractor shall further take all precautions to safeguard existing services and structures near or next to excavations carried out by him and shall provide and erect all temporary support measures that may be necessary.

The timbering, strutting and sheet piling of the pipe trenches shall not relieve the Contractor of any responsibility and all claims for the compensation for damages or injury caused or aggregated by the Contractor not taking all precautions to safeguard persons or property, shall be met entirely by the Contractor.

PSDB 5.5 Trench Bottom

Where waterlogged trench bottom conditions exist after the Contractor has, in the Employer's Agent's opinion, carried out all possible dewatering operations, the Employer's Agent may order that unsuitable material be excavated and replaced with crushed stone. A layer of 19 mm crushed stone shall be placed over the full width of the trench bottom, in increments of 200 mm thick or such other thickness as may be ordered by the Employer's Agent. The crushed stone shall be placed and rammed into the trench bottom to create a firm platform and shall be finished off to the required trench formation level.

As an alternative, the Employer's Agent may order that a suitable selected fill material, obtained from the site, be placed in the trench bottom to the same dimensions as specified for the crushed stone. The selected fill material shall be compacted to the specified density for trench bottoms.

Where the Contractor's method of working results in quagmire conditions in the trench bottom, the Contractor shall excavate and stabilize the trench at his own cost.

PSDB 5.6 BACKFILLING

PSDB 5.6.3 Disposal of Soft Excavation Material

Surplus excavated material shall be taken off the Site and disposed of at a site arranged by the Contractor, and approved by the Employer's Agent. No payment for overhaul will be made.

PSDB 5.6.4 Disposal of Intermediate and Hard Rock Material

Surplus excavated material shall be taken off the Site and disposed of at a site arranged by the Contractor, and approved by the Employer's Agent. No payment for overhaul will be made.

PSDB 5.7 COMPACTION

PSDB 5.7.1 Areas Not Subject to Traffic Loads

Add the following sentence:

All non-cohesive material shall be compacted to 100% Modified AASHTO maximum density.

PSDB 5.7.2 Areas Subject to Traffic Loads

Delete "98%" and substitute with "100%".

Add the following:

All trenches backfilled under this contract shall be backfilled with a suitable material (G7 or better) or sand, where instructed by the Employer's Agent, placed in layers a maximum of 200 mm thick and compacted to 95% Modified AASHTO (100% for sand) maximum density. All pipe trenches that fall within the road reserves shall be regarded as areas subject to traffic loads.

PSDB 5.9 REINSTATEMENT OF SURFACES

PSDB 5.9.4 Bitumen Roads: Subbase and Base

Add the following sentence:

Any additional imported material required for the reinstatement of selected layers, subbase or base shall comply with the requirements of the relevant standardised and/or specification data for this contract.

PSDB 5.9.5 Bitumen Roads: Surfacing

Add the following sentence:

Trench excavations crossing existing roads must be completed, reinstated and reopened to traffic outside of peak-hours.

Add the following new sub clause in clause 5:

PSDB 5.11 RESTRICTED LENGTH OF TRENCH EXCAVATION

The Contractor shall ensure that under all circumstances the maximum open trench length is less than 100 m, but that open trench lengths are sufficient to lay the pipeline at the gradients shown on the drawings. i.e. localised high and low points shall not be permitted if not shown on the drawings.

For the sections with high water tables, the Contractor shall dewater the ground, excavate and support the trench and lay, bed and backfill the pipe up to the original ground level, including removal of the trench support and stopping dewatering. A detailed method statement covering the complete operation shall be submitted to the Employer's Agent for approval.

PSDB 5.12 CLEANING UP AS WORK PROCEEDS

The Contractor shall complete all backfilling, trimming, levelling and cleaning up of the Site as work proceeds.

PSDB 5.13 REINSTATEMENT OF EXISTING STORMWATER DRAINAGE INFRASTRUCTURE

The existing furrows and subsurface drainage shall be reconstructed to the same dimensions and standards as the existing, unless otherwise ordered or approved by the Employer's Agent. The work shall be carried out as soon as the pipeline (or appurtenant works) has been laid, tested and backfilled.

PSDB 5.14 REINSTATEMENT OF CLEARED AND GRUBBED AREAS

Once backfilling of the pipe trench and any disposal of surplus material over the cleared area (see PSDB 5.6.3 and PSDB 5.6.4) has been completed, the Contractor shall spread and lightly compact the topsoil layer where removed (see PSC 5.5 and PSC 5.6)."

PSDB 5.15 TRENCH WALL STABILITY

Notwithstanding the requirements of PSDB 5.11, the Contractor shall take responsibility for the length of trench open at any time and if collapse of the side walls occurs for any reason, the responsibility will be the Contractor's and he will reinstate and make good at his own cost."

PSDB 7 TESTING

Add the following to the clause:

The Contractor shall carry out density tests as specified in TMH1, in the positions indicated by the Employer's Agent, to determine the compaction of the backfill material in the trenches and the material used for reinstating the road construction layers. No single test result which is below the specified density, will be accepted.

In the case of trenches in areas subject to traffic loads, the Contractor shall, notwithstanding the terms of the second sentence of Subclause 7.1, bear the cost of all density tests carried out except as follows. Where the test results are equal to or exceed the specified density, the Employer will bear the cost of that number of those tests ordered by the Employer's Agent in excess of one test per 20 m3 of compacted material, based on the total volume of backfill and reinstated road layers, including the replacement of any over-excavation, in areas subject to traffic loads.

In the case of trenches not in areas subject to traffic loads, the Contractor shall undertake one density test per 50 m³ of compacted material, based on the total volume of bedding and backfill, including the replacement of any over-excavation. The Contractor shall bear the cost of these density tests, unless additional density tests are ordered by the Employer's Agent.

The Contractor shall also bear the cost of those density tests, carried out by the Employer's Agent, of which the test results are below the specified density.

PSDB 8 MEASUREMENT AND PAYMENT

PSDB 8.3 SCHEDULED ITEMS

PSDB 8.3.2 Excavation

a) Excavate in all materials by machine for trenches, backfill, compact and dispose of surplus material
Unit: m

Payment for pipeline excavations by machine will be measured in linear meters to a depth of between 0.0 to 1.0 meters (one meter) thereafter in depth increments of 1.0 meters. If replacing an existing pipeline, the excavation around the existing pipe from 0.5m above its crown shall be by hand and shall be included in the rate. Distinction will be provided for sections of excavation without shoring and sections of excavation with shoring.

b) Extra-over item (a) above for:

i) Intermediate material Unit: m³

ii) Hard rock or material Unit: m³

iii) using pneumatic tools or other techniques where blasting is not permitted Unit: m³
This payment item shall be for hard rock excavation by methods other than blasting.

c) Excavate and dispose of unsuitable material from trench bottom Unit: m³

No payment for overhaul will be made.

d) Excavate in all materials by hand for trenches, backfill, compact and dispose of surplus material
Unit: m

Payment for pipeline excavations by hand will be measured in linear meters to a depth of between 0.0 to 1.0 meters (one meter) thereafter in depth increments of 1.0 meters.

e) Excavations for point repairs and valve chambers / structures installation Unit: m³

Payment will include excavation in all materials, backfill, compaction of all layers and dispose of surplus material. The depth shall be measured to the actual bottom of the trench. Payment for the

excavations will be measured in cubic meters to a depth of between 0.0 to 1.0 meters (one meter) thereafter in depth increments of 1.0 meters. The rates are not accumulative.

Any deviation in this regard must be approved by the Employer's Agent.

PSDB 8.3.3 Excavation Ancillaries

PSDB 8.3.3.1 Make up Deficiency in Backfill Material

The rate for placing and compacting bedding and blanket material shall be included in the items for excavation and backfilling. No additional payment will be made for placing and compacting bedding and blanket using material from trench excavations.

Where material excavated from trenches is unsuitable for backfill, bedding or blanket material and cannot be reasonably selected from adjacent trench excavations, the Employer's Agent will order the use of material from commercial sources.

PSDB 8.3.4 Particular Items

a) Shoring trench for pipeline excavations Unit: m

Shoring on both sides of the trench shall be measured per meter of excavation increment depth for each respective type of shoring billed. Should sheet piling be used it shall be cut off 1,0 m below ground level and the remainder left in-situ. The use of shoring however, does not in any way relieve the Contractor of his responsibilities in terms of the Occupational Health and Safety Act No. 85 of 1993.

Where shoring is specified or ordered, it shall be installed on both sides of the trench and shall be measured per metre of excavation increment depth. Payment will be categorised in depth increments of 1,0 meters. The tendered rate shall include full compensation for shoring of the trench as specified.

Payment will be categorized into the following classes: (The rates are not accumulative)

i) Shoring for depths 1 – 2m Unit: m
ii) Shoring for depths 2 – 3m Unit: m
iii) Shoring for depths 3 – 4m Unit: m
iv) Shoring for depths 4 – 5m Unit: m

b) Shoring for point repairs and valve chambers / structures installation Unit: m²

The use of shoring however, does not in any way relieve the Contractor of his responsibilities in terms of the Occupational Health and Safety Act No. 85 of 1993.

Where shoring for point repairs are specified or ordered, it shall be measured per square metre of actual pit face shored. The tendered rate shall include full compensation for shoring of the trench as specified. In the case of timber shoring, the rate should make provision for double boxing if required. Should sheet piling be used it shall be cut off 1,0 m below ground level and the remainder left in-situ (if practical).

Payment will be categorised in depth increments of 1,0 meters. The tendered rate shall include full compensation for shoring of the trench as specified.

Payment will be categorized into the following classes: (The rates are not accumulative)

i) Shoring for depths 1 – 2m Unit: m²
ii) Shoring for depths 2 – 3m Unit: m²
iii) Shoring for depths 3 – 4m Unit: m²
iv) Shoring for depths 4 – 5m Unit: m²

c) Shoring design and approval costs as approved by the Employers Agent Unit: h

Where the design and approval by a qualified and competent Engineer or Engineering Technologist are required, the tendered rate shall include for all costs to comply with the requirements. The use of this payment

item shall be subject to the Employers Agent approval. The Engineer or Engineering Technologist shall be registered with the Engineering Council of South Africa (ECSA) and have at least minimum 5 years relevant experience.

The Contractor to adequately provide health and safety measures, competencies and resources for temporary works activities in his rates.

Temporary Works: Control of Water

Where specialist dewatering measures are required for a project and are to be undertaken by the Contractor, the payment will be in terms of the items provided in the Schedule of Rates.

PSDB 8.3.6 Finishing (Reinstatement of surfaces)

PSDB 8.3.6.1 Reinstate road surfaces complete with all courses Unit: m^3/m^2

The layerworks to be allowed for under this item are as follows below. The costs of the imported material to be used in terms of DB 3.6.1 and DB 5.9.4, and for surfacing to be included in this rate are:

Roads:
Asphalt surfacing 40mm thick (CCC medium / COLTO medium continuously graded to 93% Rice)
Prime coat (Cut-back bitumen type MC-30) at a nominal application rate of 0,7 ℓ/ m^2
Tack coat at a nominal application rate of 0,2 ℓ of residual bitumen per m^2
G4 Base in 150 mm thick layers to 98% Mod AASHTO, to roadways
G5 Subbase in 150 mm thick layers to 95% Mod AASHTO, to roadways

Industrial Roads:
Asphalt surfacing 50mm thick (CCC medium / COLTO medium continuously graded to 93% Rice)
Prime coat (Cut-back bitumen type MC-30) at a nominal application rate of 0,7 ℓ/ m^2
Tack coat at a nominal application rate of 0,2 ℓ of residual bitumen per m^2
80mm thick layer of Bitumen Treated Base (BTB) to 93% Rice
G4 Base in 150 mm thick layers to 98% Mod AASHTO, to roadways
G5 Subbase in 150 mm thick layers to 95% Mod AASHTO, to roadways

Sidewalks:
G5 Subbase 100mm thick G5 subbase to 95% Mod AASHTO on 150mm thick G7 subgrade to 93% Mod AASHTO or 100% for sand
Existing paving to sidewalks and footways
30mm thick premix to sidewalks (pavement mix / township mix)

Concrete: 25 MPa strength to 150, 200 and 250mm thickness

Brick Paving, Cobble pavers and Interlocking: To match existing or equivalent approved by the Employer's Agent. Minimum compressive strength of 25MPa.

The tendered rate shall be for reinstating the road layers as well as for the cost of cutting back of existing layers to provide stepped joints. The benching of each layer shall be at least 150mm and may be as wide as 200mm in some areas as per Employers Agent instruction. The rate shall also include material, labour and equipment for cutting back the damaged premix layer to form a neat straight line. The rate shall also include the removing of the old premix by hand and replacing it with new premix.

The area and volume will be computed from the authorised dimensions measured for each layer after compaction. Payment for finishing will be additional to that for excavation covered by Clause 8.3.2.
The tendered rate shall cover the costs involved as specified in SANS Clause 8.3.6.1.

PSDM EARTHWORKS (ROAD, SUBGRADE)

PSDM 2.3 DEFINITIONS

PSDM 2.3.1 Sand

Sand is defined as non-plastic material that conforms to the following grading analysis:

% passing	4,750 mm sieve	95% min
	0,425 mm sieve	50% min
	0,075 mm sieve	10% max

and having a maximum swell of 1.5% at 100% Modified AASHTO density.

PSDM 3.2 CLASSIFICATION FOR PLACING PURPOSES

PSDM 3.2.3 Selected Layer

The upper selected layer shall consist of a material which complies with the requirements of a G7 material as described in Table 3B in SANS 1200 M.
The lower selected layer shall consist of a material which complies with the requirements of a G9 material.

PSDM 5 CONSTRUCTION

PSDM 5.1 Precautions

PSDM 5.1.1 Dust Nuisance

The Contractor's attention is drawn to Clause 5.1.4.1 of specification SANS 1200 D. During construction, the Contractor is to make every effort to prevent sand and dust blowing from the Site, including haul roads and stockpiles, onto the adjacent roads or properties.

PSDM 5.2 Methods and Procedures

PSDM 5.2.4.2 Placing and Compaction

All fill materials shall be compacted in layers less than 300 mm thick unless approved by the Employer's Agent. The degree of compaction shall be as follows:

(a) Sand: 100% of Modified AASHTO density
(b) all other fill materials: 93% of Modified AASHTO density

The Contractor shall so organise his work that excavated material is placed directly and no additional payment shall be made for stockpiling unless instructed by the Employer's Agent in writing.

PSDM 5.2.5 Selected Layer

The upper selected layer shall be compacted to 95% of Mod. AASHTO maximum density in the case of a non-sand material. Non-sand middle and lower selected layers shall be compacted to 93% and 90% of Mod. AASHTO maximum density respectively.

All sand selected layers shall be compacted to 100% of Mod. AASHTO maximum density.

PSDM 5.2.8 Transport

There is no overhaul.

Add the following item:

PSDM 5.2.9 Tie in to Existing Pavement Layers

Where the roadworks tie in to the existing roads, the Contractor shall cut each existing layer back to form a stepped joint. Each layer shall be stepped back at least 150 mm from the underlying layer. No separate payment will be made for this work and will be deemed to be included in PSDB 8.3.6.1.

PSDM 8 MEASUREMENT AND PAYMENT

PSDM 8.2 Computation of Quantities

Earthworks quantities shall be measured in compacted fill using cross-sections measured after clearing and roadbed compaction. The rates shall include all costs for the various items as scheduled including all survey costs.

PSDM 8.3.5 Selected layer compacted to 93% of modified AASHTO maximum density

Substitute "93 % of MAASHTO density" in the heading of DM 8.3.5 with "93 % (100 % for sand) of MAASHTO density".

Add the following to DM 8.3.5:

Separate items will be scheduled for lower and upper selected layers as well as for material from the site of works and from commercial sources. The rate for selected layers from commercial sources shall, in addition to the provisions of DM 8.3.5, allow for locating the source, complying with all the applicable precautions as set out in DM 5.1, obtaining the material, selection and transport from the source to the point on the road where it is going to be used. No payment shall be made for the removal and replacement of unsuitable imported material.

PSL MEDIUM PRESSURE PIPELINES

PSL 2 INTERPRETATIONS

PSL 2.4 ABBREVIATIONS

Add the following:
uPVC – Unplasticised Polyvinyl Chloride
PVC-O – Molecularly Oriented Polyvinyl Chloride
HDPE - High Density Polyethylene
DI - Ductile Iron
BS - British Standards
EN - European Standards
ISO - International Standards"

PSL 3 MATERIALS

PSL 3.1 GENERAL

Substitute the first sentence with the following:
The water supply pipelines shall have a minimum working pressure of either 12 bar or 16 bar and be either uPVC complying with the requirements of SANS 966, PVC-O with a minimum working pressure of either 12.5, 16, 20 or 25 bar complying with the requirements of SANS 16422, HDPE PE100 with a minimum working pressure 16 bar.

The temporary reinstatement of the potable water pipeline shall be carried out using HDPE PE100 pipelines. Refer to PSA 5.12

All steel pipes, pipe specials, and other steel fittings as required by the Employer's Agent shall be type 1: mild steel hot dipped galvanized with Plascoat or Carboline coating, type 2: Corrocoat Polyglass VE corrosion protection or type 3, cement lining and concreate sheating as per PS-TC 3.6.

The materials and construction of all pipes, fittings, valves and specials shall comply with the appropriate SANS Specification whether stated or not and shall be approved by the Employer's Agent. Cut pipes shall only be used at pipe junctions to position valves and specials as shown on the drawings, and at connections to structures. When laying the pipes the markings shall be visible from above.

Add the following:

The Contractor shall provide adequate storage facilities for pipes, couplings and specials to conform to the following:

(a) Couplings and specials

Until required for use the rubber rings shall be stored in a cool dark place, away from grease, oil or harmful chemicals. If rubber rings have been tied they shall be separated a few days before they are required for use in order to eliminate minor impressions which the ties may have caused.

Couplings into which rubber rings have been fitted, ready for use, shall be stored under cover. All couplings and specials shall be stacked off the ground to ensure that the protective coatings are not damaged.

(b) Stacking and transportation of pipes

The transportation and stacking of pipes shall be strictly in accordance with the manufacturer's requirements.

Add the following subclause:

PSL 3.1.1 Local Conditions

The pipes will be subjected to the following:

a) Before being placed in the pipe trench and filled with water the pipes may be subjected to ambient temperatures ranging from a minimum of about 5°C in winter to a maximum of 40°C in summer.

b) The pipes will convey drinking water.

c) Some of the pipes will be laid in clay soils which is likely to be classified as “very corrosive” or “extremely corrosive” in terms of resistivity.

PSL 3.3 CI PIPES, FITTINGS AND SPECIALS

In the second sentence:
Change “AC pipes” to “PVC, HDPE and DI pipes”.

PSL 3.4 STEEL PIPES, FITTINGS AND SPECIALS

PSL 3.4.3 Pipes of nominal bore over 150 mm

Add the following:

Steel pipes shall comply with SANS 719 Grade B and have a minimum thickness of 4.5 mm or unless otherwise stated by the Employers Agent.

The steel pipes shall be manufactured exclusively at the works of such manufacturers as may be approved by the Employer’s Agent and at only one works unless otherwise agreed by the Employer’s Agent.

PSL 3.4.4 Fittings and Specials

Add the following:

All specials shall be designed and manufactured to comply with the applicable specifications for uPVC pipes.

Where mild steel specials are specified, it shall be mild steel type 1, 2 or 3 as indicated in PS-TC 3.6. The wall thickness for specials with diameters up to and including 300 mm shall be 4.5 mm.

PSL 3.7 OTHER TYPES OF PIPES

PSL 3.7.1 uPVC Pipes

Replace the clause with the following:

uPVC pipes shall comply with SANS 966 Part 1 and be Class 12 and 16, unless otherwise specified on the drawings, and shall be produced in a factory of a registered member of the South African Plastic Pipe Manufacturers Association (SAPPMA). The uPVC pipe manufacturer shall be ISO 9001:2000 accredited and shall be a certified markholder of SANS 966 Part 1 and must be in possession of a permit to apply the SANS certification mark.

PSL 3.7.2 Polyethylene Pipes

Replace the clause with the following:

Polyethylene pipes shall be HDPE PE100 and comply with SANS 4427-1 and be Class 16, unless otherwise specified on the drawings, and shall be produced in a factory of a registered member of the South African Plastic Pipe Manufacturers Association (SAPPMA). The HDPE pipe manufacturer shall be ISO 9001:2000 accredited and shall be a certified markholder of SANS 4427-1 and must be in possession of a permit to apply the SANS certification mark.

All HDPE bends, reducers and fittings shall be injection moulded (continuous) to the ASTM F2206 Standard Specification for Fabricated Fittings of Butt-Fused Polyethylene (PE) Plastic Pipe, Fittings, Sheet Stock, Plate Stock or Block Stock. All bends on the HDPE pipes shall comply with SANS 6269.

All HDPE pipe connections shall be butt-welded connections to ASTM F2620 unless otherwise specified on the drawings. The external and internal beads shall not be removed.

In terms of slow crack growth (SCG) considerations any HDPE pipe or pipe special with a notch or scratch damage of 10% or more of the pipe wall thickness, shall be rejected and replaced by the Contractor at his costs.

Add the following item:

PSL 3.7.3 PVC-O Pipes

PVC-O pipes shall comply with SANS 16422 and be Class 12.5, Class 16, Class 20 and Class 25, unless otherwise specified on the drawings, and shall be produced in a factory of a registered member of the South African Plastic Pipe Manufacturers Association (SAPPMA). The PVC-O pipe manufacturer shall be ISO 9001:2000 accredited and shall be a certified markholder of SANS 16422 and must be in possession of a permit to apply the SANS certification mark.

PSL 3.8 JOINTING MATERIALS

PSL 3.8.2 Flexible Couplings

Add the following subclause:

PSL 3.8.2.5 Pipe Couplings

uPVC or PVC-O pipes shall use push in joints. The pipe end shall be spigot and socket with integral socket and locked-in rubber ring seal.

HDPE pipelines shall be joined by means of electrofusion couplings or butt welding where specified.

Slip-on couplings and slip-on flange adaptors shall mean Ranger or equivalent couplings. All steel slip-on couplings shall have a harness arrangement to prevent pipe separation. The end flange (compression flange) shall be such that the tie bolts clear the end flange. Bending of tie bolts will not be allowed. The couplings shall be mild steel and coated as per manufactuerers / supplier specification unless otherwise indicated by the Employers Agent.

For clamps and couplings, the use of a torque wrench will be required to prevent overtightening of the bolts. Torque stiffness will be according to the manufaturers specification.

PSL 3.8.2.6 Couplings between pipe materials and specials

Ductile Iron flanged adaptor with one end spigot or socket and the other end flanged.

Alternatively, the steel special shall be fitted with a machined collar to suit the outside diameter of the uPVC or PVC-O pipe. The connection shall be made by using a flexible steel coupling (e.g. Arpol, Straub, etc. or equivalent) or a long barrel mechanical steel coupling (e.g. Klamflex or equivalent) subject to approval by the pipe manufacturer and the Employer's Agent.

A HDPE pipe shall be fitted with a HDPE flanged stub with a stainless steel backing ring to suit the connecting flange.

PSL 3.8.3 Flanges and accessories

Add the following:

The dimensions of all flanges and their drilling shall conform to the dimensions of SANS 1123, Table 1600/3.

Any item of pipework or special or valve, of which the flanges are incorrectly drilled, will be rejected. The reaming of bolt-holes to oversized dimensions to enable a particular item to fit will not be allowed.

Nitrile Rubber gaskets not less than 1,5 mm thick and complying with BS 2815, Grade B, shall be supplied for flanges.

All bolts, nuts and washers shall be stainless steel and be "denso" tape wrapped where installed below ground. Insulated nuts, bolts and washers should be provided where bi-metallic corrosion could occur.

PSL 3.8.4 Loose Flanges

Add the following:

Loose flanges shall be manufactured from stainless steel unless otherwise shown on drawings.

Add the following item:

PSL 3.8.8 Ductile Iron fittings for PVC pipes

All bends, reducers, T-pieces, flange adaptors, couplings and other fittings for PVC pipe shall be socketed ductile iron (spheroidal graphite iron) fittings complying with the requirements of EN 12842 and have a minimum working pressure of 16 bar.

PSL 3.9 CORROSION PROTECTION

PSL-3.9.2 Steel Pipes

Add the following:

Where mild steel specials are specified, it shall be mild steel type 1, 2 or 3 as indicated in PS-TC 3.6. The applicator of the corrosion protection system shall be ISO 9001 accredited.

Lined and coated pipes and specials shall be protected against damage at all stages from manufacture to construction. Mechanical damages at any stage to the corrosion protection shall be repaired to the manufacturer's specifications.

The Contractor shall appoint an independent coating inspector to:

- carry out random checks at different stages of the application of the corrosion protection in terms of preparation before application (sand blasting), humidity checks during application, proper use of application equipment, etc;
- take DFT measurements of all the steel pipes, specials and fittings during the different stages of application of the corrosion protection;
- to carry out pinhole testing of all the steel pipes and specials; and
- on completion of the inspection of all the steel pipes, specials and fittings, a Certificate of Conformance has to be issued to the Employer's Agent for approval.

All underground fittings and flexible and flanged joints shall be treated with an approved priming solution, packed with an approved mastic, and wrapped with an approved petrolatum tape with finishing layer by means of clingwrapping.

Payment for corrosion protection and the independent coating inspection shall be included in the rates for the scheduled pipes, fittings and specials.

PSL 3.9.5 Joints, Bolts, Nuts and Washers

Substitute the clause with the following:

All couplings, flanges, bolts, specials and saddles shall be new and stainless steel Grade 316 and protected against corrosion with an approved petrolatum tape with finishing layer by means of cling wrapping.

PSL 3.9.6 Corrosive Soil

Substitute the clause with the following:

All underground connections of valves, steel or ductile iron fittings shall be treated with an approved priming solution, packed with an approved mastic, and wrapped with an approved petrolatum tape with finishing layer by means of cling wrapping.

PSL 3.10 VALVES

Add the following:

All isolating valves up to and including 300mm diameter shall be of the sluice valve type and all isolating valves greater than 300mm diameter shall be of the butterfly type.

PSL 3.10.1 Gate Valves

All isolating valves of size up to and including 500 mm shall be suitable for working pressure of 1.6 MPa (i.e.

Class 16) and shall be double flanged cast iron, cast steel or spheroidal graphite iron wedge gate or RSV type according to the latest SANS 664. The valves shall have a brass gate and non-rising 316 stainless steel spindle and brass or bronze guides.

For RSV gate valves the body and bonnet shall be Ductile Iron GGG-50 to DIN 1693. The wedge shall be Ductile Iron GGG-50, fully encapsulated internally and externally so as to prevent corrosion and rubber failure. The wedge nut must be of the "fixed nut" concept, press fit into the wedge, allowing no movement and manufactured from dezincification resistant high tensile navy brass. The wedge shall be supported by guides in the side of the valve body, and no metal to metal contact between the gate and guides shall be accepted.

All rubber shall be ozone stabilised and UV-resistant. The valve stem shall be Stainless Steel to DIN X 20 Cr 13. The primary seal must be a NBR rubber hydraulic U seal (Manchette type), and the secondary seal at least two NBR O-rings inside and two outside of Nylon Bush for galvanic corrosion protection. The stem sealing arrangement shall include a wiper ring to prevent dirt ingress from the outside, and it shall be housed so as to protect it from UV radiation.

The thrust collar shall be dezincification resistant brass CZ 132 to BS 2874. The bonnet bolts shall be entirely sunk into the body casting, sealed and protected by hot wax melt. The bolts shall be grade 8.8 high tensile bolts and hot dip galvanised.

Gate valves shall be anti-clockwise closing with direction of opening clearly marked on the valve body and be fitted with a square spindle nut, suitable to be used with a valve key in the vertical position and secured with retaining bolts. All gate valves shall be drip tight when tested in accordance with the requirements of BS 5163. Pipes shall not be tested against a closed valve. Thrust blocks for test sections shall be approved by the Engineer prior to testing of pipes.

Valves shall be grit blast cleaned to S15 standard and a solvent-free sintered epoxy powder applied in one coat by the use of arc-spray machines to provide a dry film thickness of not less than 250 micron.

These valves shall meet the requirements under Particular Specification PS-TC – COCT WATER SPECIFICATION FOR GATE VALVES, AIR VALVES, FIRE HYDRANTS AND FITTINGS included under Part C3.4 – Construction.

PSL 3.10.2 Butterfly Valves

Isolating valves of size greater than 300mm shall be double flanged cast carbon steel or spheroidal graphite iron butterfly valves (or equivalent approved), anti-clockwise closing and shall conform to the requirements of BS EN 593 and previous BS 5155. The valve shall be suitable for flow in either direction, and shall shut off tight in either direction against the full maximum working pressure.

The valve shall have an easily removable stainless steel or bronze seat mechanically held in place respectively by either stainless steel or bronze studs screwed into the body.

An adjustable seal of approved resilient material shall be fixed to the edge of the disc by means of a solid stainless steel or bronze ring held in place respectively by either stainless steel or bronze screws. The seal shall have an O-ring, dovetail, music note, wedge, tadpole, dumb-bell or other cross-sectional shape to the approval of the Employers Agent to ensure that it is firmly locked in between the disc and retaining ring. It shall not be flat or require adhesives for bond.

The valve shall be for installation with the main shaft horizontal. The main shaft shall be of stainless steel and shall be offset from the centre-line of the disc so as not to pass through the seal.

The operating shafts shall be vertical and they shall be capable of being closed by one man against the maximum unbalanced pressure.

The gearbox shall not be an integral part of the main body, but shall be a separate unit bolted to the main body in such a manner as to prevent any water leaking past the main shaft seal from entering the gearbox. Seal retaining rings shall be of stainless steel. A torque slip device shall be fitted such that the handwheel slips automatically in positive steps to limit the maximum possible torque to the gearbox. A shear pin is not acceptable.

The handwheel shall be of an appropriate diameter and fitted horizontally above the top of the end flanges.

Each valve shall have a brass plate firmly affixed to the body with the following information stamped or engraved thereon: Manufacturer, Order Number, Date of Order, Size, Pressure Rating and Body and Disc Material.

Robust, rigid position indicators must be provided on the gearbox to show clearly the fully open, fully closed and intermediate positions.

All exposed internal and external surfaces of the valve body and disc shall be protected with a water resistant, non-toxic and non-tainting fusion bonded, powder epoxy coating to a minimum thickness of 250 micron in accordance with SANS 1217 and SANS 1274.

Each valve shall be hydraulically tested in accordance with BS 5155 in both directions and a test certificate certifying that it complies with all the requirements of this Specification shall be forwarded to the Employers Agent before delivery. Provision shall be made in the tender price for a one day visit of a representative of the Employers Agent to witness the test.

The cost of all inspections and certification shall be included in the tender price. Both the test certificate and the corrosion protection inspection report shall be forwarded to the Employers Agent before delivery.

PSL 3.10.3 Air Valves

All Combination Air Valves (air release and vacuum breaker) valves for water pipework shall be of the non-slamming type, as approved by the Employers Agent.

PSL 3.10.4 Fire Hydrants

Fire hydrants shall be of the screw-down underground type and shall be suitable for a working pressure of 1.6 MPa with a 65 mm inlet. The outlet shall be 65 mm diameter gun-metal with London Round screw thread with cap top and chain. It shall be anti-clockwise closing with a square spindle nut similar to the gate valves. Hydrant covers shall be painted signal red and shall protrude at least 50 mm above final ground level. Hydrant valves shall be positioned opposite boundary pegs wherever possible."

These valves shall meet the requirements under Particular Specification PS-TC – COCT WATER SPECIFICATION FOR GATE VALVES, AIR VALVES, FIRE HYDRANTS AND FITTINGS included under Part C3.4 – Construction.

PSL 4 PLANT

PSL 4.3 TESTING

Add the following:

The Contractor must ensure that the test equipment is calibrated every six months, with proof of certificate and remain in good working order.

PSL 5 CONSTRUCTION

PSL 5.1 LAYING

PSL 5.1.1 General

Add the following to the first paragraph:

Pipes and specials shall be lifted only by means of broad band slings.

Replace the last paragraph with the following:

Control of laying and bedding shall be by means of an acceptable laser beam instrument.

Add the following item:

PSL 5.1.5 Connection to Existing Pipelines

Where connections to existing pipelines are required, the Contractor shall excavate well in advance of work being undertaken to expose the connection point to verify that the assumed fittings are available on site and that the connection as proposed can be made. It should be noted that it may be necessary to expose a full pipe length to verify the size and class of pipe in the ground or to locate an existing fitting.
The following will apply:

1. Water supply disruption must be kept to a minimum. (6 hours maximum)

2. Tie-ins to the existing network will be allowed only on Tuesdays, Wednesdays and Thursdays. No tie-ins will be done on Mondays, Fridays and Weekends unless approved by the Employers Agent.

3. Connections will take place after the testing of the new pipeline(s) has/ have been completed.

PSL 5.2 JOINTING METHODS

Add the following subclause:

PSL5.2.5 Welding of the HDPE pipe

The HDPE pipes and specials shall be joined by means of butt fusion using approved, butt welding equipment and fully accredited, trained plastic welders in accordance with the manufacturer's code of practice. The Contractor shall undertake the following steps prior to the commencement of welding on site:

a) Provide welding tables applicable specifically to pipe diameters to be welded and the welding equipment used.

b) Provide a certificate of calibration for the welding machine to be used. The certificate shall bear the model number of the welding machine, the name and the address of the certifying agent, the date of the test and a statement as to the accuracy of the temperature and pressure gauges on the machine in question.

   A certificate of calibration dated more than 12-months from the Commencement Date is not acceptable.

c) Provide certification that the welder/operator has successfully completed an approved training course and is qualified to weld the sizes and classes of HDPE pipe to be used on this Contract.

d) A test weld is to be undertaken on site in the presence of the Employer's Agent's for approval prior to the commencement of welding the pipes.

Under no circumstances will welding be permitted to commence prior to the provisions of the above mentioned certificates and the weld test, and the cost of delays resulting from failure to timeously undertake the abovementioned steps shall be borne by the Contractor.

Each joint is to be uniquely numbered. Once welding of a joint has been completed, the details of the weld shall be logged and the information forwarded to the Employer's Agent.

PSL 5.5 THRUST BLOCKS

Add the subclause with the following:

Thrust blocks are required for all bends where flexible joints are used. Thrust blocks are also incorporated into valve chambers. These thrust blocks are not necessarily required for pipelines where locked joints are used.

Where locked joints are used in lieu of thrust blocks, the Contractor shall submit to the Employer's Agent the relevant calculations of the anchored lengths for all relevant bends.

The concrete in the thrust blocks shall be at least Grade 25 MPa/19mm. The minimum cover to the steel shall be 40 mm. Where no reinforcement is shown allow 80 kg/m^3 of concrete.

PSL 5.10 DISINFECTION OF POTABLE WATER PIPELINES

After the installation of all new potable water pipelines, the Contractor will be responsible for the disinfection of the newly installed pipelines in accordance with SANS 1200 L subclause 5.10, whereafter the disinfection shall be certified by the Employer's Agent. The costs are to be included in the tendered rates.

PSL 5.12 CLEANING PIPE INTERNALS, VALVES AND FITTINGS

The Contractor shall ensure that all pipework is installed internally free of any contaminants. All traces of dirty water, cuttings, dirt and other debris are to be removed from the inside of the pipe as it is installed.

PSL 7 TESTING

PSL 7.1 GENERAL

Add the following:

After a section of water main has been completed, the Contractor shall pressurize the water main to allow for all fittings to be inspected by the Employer's Agent for leaks or defective workmanship. For this purpose all couplings, bends, saddles, house leadings, valves and hydrants shall remain open until the main is pressurised for inspection by the Employer's Agent.

If the section to be tested is only a repair to an existing main the pressure test will be equal to the working pressure of the existing main.

If the section to be tested is a new installation of a main, the pressure test will be equal to the pressure test specified under SANS 1200 L.

Any defective workmanship shall be repaired at the contractor's cost.

PSL 8 MEASUREMENT AND PAYMENT

PSL 8.1 GENERAL

Add the following:

The supply of all pipes will be measured as specified in Subclause 8.2.1.

The tendered rate shall include the corrosion protection (lining and coating) where applicable. No extra payment will be made for the removing and repairing of the coating and lining where pipes are cut or damaged.

No extra payment will be made for any cutting, etc., required for permanent closure pipes or for the creation of flexible connections at structures.

No extra payment will be made for testing, nor for temporary water supply connections, temporary thrust blocks, blank flanges and plugs for testing, which will be held to be included in the price for the laying of pipes, valves and specials.

The price tendered and paid for laying and coupling of pipes and fittings shall include for the provision of corrossion protection as specified in subclause PSL 3.9.

PSL 8.2 SCHEDULED ITEMS

PSL 8.2.1 Supply, Lay and Bed Pipes Complete with Couplings

Change the heading to:

a) Supply of Pipes only Unit: m

b) Handle, Lay and Bed Pipes with Spigot and Socket Joints, Test and Disinfect Unit: m

The rate shall also cover the cost for handling of the pipes, testing, disinfecting and cutting of the pipe and the supplying and fixing of the extra coupling where required.

Notwithstanding Subclauses 8.2.7 and 8.2.15, the rates for pipes, valves, specials and couplings shall also cover the cost of corrosion protection as specified, including wrapping of flanges and couplings with "denso" tape or equivalent.

PSL 8.2.2 Extra-over 8.2.1 for the supplying, laying and bedding of specials complete with couplings

Add the following:

Tees
Specials will be measured by number, extra over the cost of the installation of pipes.
The tendered rate shall include the supply, lay, bedding, jointing and testing of the specials.

The tendered rate for specials shall be held to include machined collars on the specials and the couplings/welds necessary to fit the special to the associated pipeline and one set of bolts, nuts and gaskets per flanged special.

Mechanical couplings shall be measured separately by number.
The tendered rate shall also include for petroleum mastic and tape wrapping where mechanical couplings and flanges are buried.

Bends
Bends will be measured by number, extra over the cost of the installation of pipes. The tendered rate shall include the supply, lay, bedding, jointing and testing of the bends The tendered rate shall also include the cutting of pipes, preparation of pipe ends, repair of corrosion protection (where required) and the couplings required.

PSL 8.2.11 Anchor blocks/Thrust blocks and pedestals Unit: m³

Add the following:

Anchor and thrust blocks shall be measured in cubic metre concrete and the tendered rate shall cover the cost of excavation and backfill, concrete, formwork, and steel reinforcement (including 0,08 t high tensile steel per cubic metre of concrete where the amount of steel is not indicated on the drawings) as well as labour, etc., to complete the thrust blocks as shown on the drawings in addition to the operations and materials specified in Subclause 8.2.11.

The tendered rates shall also include the wrapping of pipes and fittings where the pipes and fittings come into contact with concrete.

Add the following items:

PSL 8.2.16 Connection to existing main supply pipe Unit: No.

The tendered rate shall include full compensation for the cost of locating, exposing, excavation, backfill and connection to existing the existing supply pipe, removal of surplus material, all labour, material and equipment necessary to make the connection and all liaison with the local authorities.

PSL 8.2.17 Markers

The pipe markers will be measured per number.

The rate shall cover the supply, all labour, equipment and paint to place the markers at the end of pipes.

PSLB BEDDING (PIPES)

PSLB 3 MATERIALS

PSLB 3.1 SELECTED GRANULAR MATERIAL

Selected granular material shall be of a granular, non-plastic nature and shall conform to the following grading:

% passing 4,750 mm sieve 95% min
0,425 mm sieve 50% min
0,075 mm sieve 10% max

and shall have a compactibility factor (as determined by the test given in Section LB, Part 3 of SANS 0120) not exceeding 0,4.

PSLB 3.3 CLASS OF BEDDING

Watermains shall all be laid on Class B bedding, unless otherwise shown on the Drawings, or instructed by the Employer's Agent.

PSLB 3.4 SELECTION

Suitable selected bedding material will be available from the trench excavations along the route. Should additional selected granular material be required, it shall be obtained from other excavations on the site, or imported from commercial source.

PSLB 3.4.1 Contractor to Excavate Selectively for Bedding Materials

Notwithstanding the requirements of Subclause 3.7 of SANS 1200 DB and Subclause 3.4.1 of SANS 1200 LB regarding the use of selective methods of excavating, the Contractor shall use selective methods of excavating and shall provide and use plant that will enable him to avoid burying or contaminating material that is suitable and is required for bedding.

PSLB 5 CONSTRUCTION

PSLB 5.1.4 Compacting

The degree of compaction of the bedding shall be 100% of Modified AASHTO in sand and not less than 93% in the case of non-sand materials.

PSLB 8 MEASUREMENT AND PAYMENT

PSLB 8.1 SCHEDULED ITEMS

PSLB 8.2.1 Provision of bedding and selected fill material from trench excavations

a) Selected granular material — Unit: m³

b) Selected fill material — Unit: m³

PSLB 8.2.2 Supply only of bedding material by importation

PSLB 8.2.2.3 From commercial sources (Provisional)

a) Selected granular material — Unit: m³

b) Selected fill material — Unit: m³

Add the following item:

c) 13mm stone — Unit: m³

d) 19mm stone — Unit: m³

Where the use of a crushed stone bedding layer in the trench bottom has been authorised by the Employer's Agent, it will be measured by the volume calculated according to the length multiplied by the minimum base width and specified thickness.

The tendered rate shall cover the cost of preparation of the trench bottom to accommodate the crushed stone layer in order to produce a stable platform for the pipes.

Add the following item:

PSLB 8.2.6 Geotextile / Geomembrane wrapped around a crushed stone bedding with 300mm overlay

A2 or equivalent approved Unit: m^2

The filter fabric will be measured separately by area based on the specified trench width, a stone bedding thickness of minimum 150 mm, unless a greater depth has been specified by the Employer's Agent, and an overlap of 300 mm. The tendered rate shall include full compensation for procuring, supplying, cutting, overlapping, jointing, placing and protecting the Geotextile / Geomembrane as specified as well as for wastage.

PSMK KERBING AND CHANNELLING

PSMK 3 MATERIALS

PSMK 3.1 CONCRETE

Add the following:

The Contractor shall timeously submit the concrete mix design for cast-in-situ kerbing to the Employer's Agent for approval and no kerbing shall be placed before the mix design has been approved.

PSMK 3.2 PRECAST KERBING AND CHANNELLING

PSMK 3.2.1 General

Add the following:

The profile/dimensions of precast kerbs and channels must be in accordance with the details shown on the drawing.

PSMK 3.2.2 Nominal Lengths of Precast Units

Units laid to a radius of 1,0 m or greater shall be precast and shall have the following nominal lengths:

Radius in Plan	Nominal Length
1,0 m to 20,0 m	0,3 m
Greater than 20 m and straight	1,0 m

PSMK 3.3 Cast-In-Situ Concrete

Cast-in-situ concrete for curves less than 1 m and for transitions shall be 25 MPa / 19 mm.

PSMK 3.9 BEDDING MATERIAL

Replace the contents with the following:

Bedding and backing for precast kerbs and channels shall be 15MPa / 13 mm concrete to SANS 1200 GA, to the dimensions indicated on the Drawings.

PSMK 5 CONSTRUCTION

PSMK 5.1 EXCAVATION AND BEDDING

Replace "90%" with "93% (100% for sand)

PSMK 5.2 KERBING AND CHANNELING OF PRECAST CONCRETE

Replace the first sentence with:

Kerbing and Channelling of precast concrete must be placed on a concrete bedding as required in PSMK 3.9.

Add the following sub clauses:

PSMK 5.12 EXISTING KERBING

The kerbs to be removed shall be inspected by the Employer's Agent in the presence of the contractor prior to their removal to determine the number of kerbs suitable for re-use.

The contractor is advised to use the greatest care when removing those kerbs earmarked for re-use, for should the kerbs be damaged and be subsequently rejected, he shall replace them with new kerbs at his own cost.

PSMK 5.13 STREETNAME KERBING

Street names must be cast into a full length barrier kerb. The street name must be painted white on a green background and positioned as indicated by the Employer's Agent.

PSMK 5.14 WATERTESTING OF KERBS

After the kerbs, channels inlets etc. have been constructed the kerbs, channels, etc must be cleaned and tested with water to ensure that no water is standing in any channel. This test must be done after the base has been completed but before the placing of the surface seal. Any adjustments to kerbs, channels etc must be completed before the surface seal is applied.

PSMK 5.15 EXPANSION JOINTS

These joints shall be provided at 10 m intervals, through both the kerb and channels. These joints shall be 12 mm wide, filled with a compound and sealed with a polysulphide sealant. Costs of furnishing the materials and construction of the joint are deemed to be included in the laying rate.

PSMK 7 TESTING

PSMK 7.2 CAST-IN-SITU AND EXTRUDED KERBING AND CHANNELLING

PSMK 7.2.1 General tests

Delete this sub clause.

PSMK 7.2.2 Alternative tests

Replace the heading and contents of this sub clause with the following:

PSMK 7.2.2 Tests

The Contractor shall carry out a minimum of three cube crushing tests per 1 000 m of kerbing placed. The cost of such tests shall be deemed included in the rates tendered for kerbing.

One cube crushing test shall consist of a set of six cubes made with concrete taken from the mixer, the kerbing machine or from any part of the work as ordered.

If, after three cubes of any set of six cubes have been tested after 28 days in an approved laboratory, the average crushing strength is found to be more than 3 MPa below the specified strength, the kerbing represented by the cubes will be rejected.

The Contractor may apply for resubmission of the rejected section on the basis of cores drilled from this section and tested for the estimated actual crushing strength in accordance with SABS method 865 (excluding appendix A). The cost of drilling and testing the cores is for the Contractor's account, regardless of the outcome of the tests on the cores. The number of cores required will be determined by the Employer's Agent and the criterion for rejection or acceptance of the section represented by the cores shall be as specified above for cubes.

PSMM ANCILLARY ROADWORKS

PSMM 8 MEASUREMENT AND PAYMENT

PSMM 8.4 SCHEDULED ITEMS FOR ROAD MARKINGS

Add the following to MH 8.4.1:

PSMM 8.4.1 Non-reflectorised Paint Applied At Nominal Rate Of 0,42 ℓ /m^2 Unit: km or m^2

Markings for parking bays shall be measured and paid for as "characters and symbols". No additional measurement and payment shall be made for "(e) Traffic island markings" and payment shall be made under the appropriate rates of payment item MM 8.4.1.

Add the following to MM 8.4.4:

PSMM 8.4.4 Setting Out And Premarking

No additional payment shall be made for the premarking and/or dotting of lines or special markings and all relevant costs are deemed as covered by the tendered rates for MM 8.4.1.

3.4.2.2 PARTICULAR SPECIFICATIONS

CONTENTS

PS-TA REPAIR OF WATERMAIN (POINT REPAIRS)
PS-TB SPECIFICATION FOR THE SUPPLY AND INSTALLATION OF WATER METERS AND FIRE HYDRANTS
PS-TC SPECIFICATION FOR GATE VALVES, AIR VALVES, FIRE HYDRANTS AND FITTINGS
PS-TD SPECIFICATION FOR THE REMOVAL AND REPLACEMENT OF VALVES
PS-TE GENERAL SPECIFICATIONS
PS-TF HDPE PIPES FOR HORIZONTAL DRILLING
PS-TH SLIPLINING
PS-TI SAFETY AND SECURITY SPECIFICATIONS

ACCOMMODATION OF TRAFFIC SPECIFICATIONS

PS-TA REPAIR OF WATERMAIN (POINT REPAIRS)

PS-TA 1 Scope

This particular specification covers the general requirements regarding the repair of pipelines by trench dig methods either by machine or hand and reinstatement of road and sidewalk after completion of the repair.

PS-TA 2 General

This specification is aimed at those pipelines that must be repaired by means of point excavation.

The proposed method of work is to expose the existing damaged pipe, valve or hydrant for the purpose of making repairs.

The trench excavation shall be such that the base width includes sufficient working space.

The excavation around the existing pipe will have to be done by hand. The work involved with point repair shall be in accordance with SANS 1200 Specifications and will be measured separately. The depth will be measured to the actual bottom of the trench.

Measurement and payment for excavation of point repairs will be per m^3 in the different depth categories as per the Schedule of Rates.

PS-TA 3 Plant

Mechanical excavating equipment is expected to be used. Hand excavation will form part of the works, especially in close proximity of pipes, valves, hydrant or structures and possible existing services.

Mechanical compaction equipment shall be used. Water pumps will be necessary to deal with water inflow.

PS-TA 4 Material

PS-TA 4.1 uPVC Pipe Repair

Pipework to be Class 12 uPVC pipes and will be measured and paid for in short lengths for different pipe sizes under SANS 1200 L: Pipework in the Schedule of Rates. The entire section of the pipe must be removed (collar to collar or joint to joint).

All repair couplings to be ductile iron with stainless steel bolts and nuts Grade 316 wrapped with an approved petrolatum tape with finishing layer by means of cling wrapping.

PS-TA 4.2 Other material

If required the Employer's Agent may prescribe other materials depending on the circumstances and will be paid for in terms of items in the Schedule of Rates or from Material Charges (in the Preliminary and General Schedule).

PS-TA 5 Excavation and Backfilling for Point Repairs

The Contractor will have to excavate down from the surface to reach the damaged pipe for repairs by replacing with new material.

This Contractor must take precautionary measures not to discharge or spill excavated material into the existing pipeline after it has been opened and cut.

Any material that does spill into the existing pipe will have to be cleaned out at the Contractor's expense. The excavation shall be backfilled after the repair is complete and inspected by the Employer's Agent or his representative. Backfill shall be done in layers not exceeding 300mm with selected backfill material after a selected granular bedding cradle has been placed and compacted around the repaired pipe.

Excavations for any necessary repairs to pipes, valves, hydrants, bends, tees, etc shall be measured and paid for under short trench excavations in m^3. If the repair was done in the roadway, the road shall be reinstated. Payment for this work is as per items provided in the Schedule of Rates.

PS-TA 6 Disposal of Material

All excess material, excavated road layers and damaged pipework shall be spoiled off site.

PS-TB SPECIFICATION FOR THE SUPPLY AND INSTALLATION OF WATER METERS AND FIRE HYDRANTS

PS-TB 1 Installation of new meter into an above ground setting (Change meter only)

The scheduled price for the installation of a new meter into an existing meter box.

The price shall include the labour, removing of the existing meter, installing the new meter and any fittings that may be replaced to facilitate the installation of the new meter, and any incidentals required to complete the work. The new meter will be provided by the Employer and the rate should include the collection of the new meter and delivery of the old meter at the Depot of the Employer.
Payment will be made per meter size.

PS-TB 2 Installation of new meter into an existing meter box belowground (Change meter only)

The scheduled price for the installation of a new meter into an existing meter box.

The price shall include the labour, removing of the existing meter, installing the new meter and any fittings that may be replaced to facilitate the installation of the new meter, and any incidentals required to complete the work. The new meter will be provided by the Employer and the rate should include the collection of the new meter and delivery of the old meter at the Depot of the Employer.
Payment will be made per meter size.

PS-TB 3 Remove below ground meter and box and set above ground

The scheduled price for the removal of the below ground meter and meter box and set above ground must include the removal of the existing meter and meter box and the fittings of couplings to install the meter above ground. The site must be back filled, the surface must be reinstated, removal of scrap material, removal and disposal of spoil, the clearing of site and any incidentals necessary for the completion of the work.

PS-TB 4 Installation of new meter and meter box

Installing a new meter box with meter, or the removal of the existing meter from the existing meter box and installing the meter into the new meter box, connecting the communication pipe, backfilling, reinstating the surface, removal of scrap material, removing and disposal of spoil, the clearing of site and any incidentals necessary for the completion of the work.

The replacement length shall be 1.5 meters on either side of the meter. The total length of pipe to be removed and replaced including the meter box shall be 3 (three) meters measured from cut to cut. The type of pipe up to and including 75 mm will be of HDPE and over 75 mm will be uPVC or steel.

a) The replacement of the meter box shall be accordance with Drawing No: W4

b) The existing meter box must be demolished, and the existing communication pipe must be cut-out 1.5 meters on either side of the meter with a total cut-out length of 3 meters.

c) The existing meter must be removed from the old meter box and reinstalled into the new meter box. A new meter box with meter can only be installed with the written permission of the Employer's Agent.

PS-TB 5 Removal and replacement of hydrants

The Contractor will be required to cut-out and replace defective hydrants.

The schedule price for the replacement of hydrants shall cover the cost of breaking out the hydrant box, excavation to expose the hydrant, two pipe cuts, removal of hydrant, installation of a new hydrant (supply of hydrant will be measured separately), fitting of two couplings, construct the hydrant chamber, backfill, making good the surrounding surface area, removal and disposal of surplus spoil and any incidentals required to complete the work.

A hydrant cap shall only be fitted as a temporary repair. This must be clearly indicated on the Job Card. A permanent repair must be carried out on the first Normal Working Day.

PS-TB 6 Installation of a new below ground hydrant

The schedule price for the installation of a below ground hydrant on a existing pipe line must include the excavation, cutting into existing pipe line or welding on of a socket, fitting of the new hydrant according to Drawing No. W4-F-002 or W2 (supply of hydrant will be measured separately), in the box according to Drawing

No. W4-F-001 or W2 and making good the surrounding surface area, and any incidentals required to complete the work.

70% of the material and manufacturing cost of the valves must be from within South Africa, according to the applicable clauses for Local Content as described in the tender. Failure to purchase valves according to this requirement could result in the tender being non-responsive.

PS-TB 7 Removal of below ground hydrant

The schedule price for the removal of a below ground hydrant on a existing pipe line must include the excavation, all existing hydrant fittings, removal of existing concrete or thrust blocks, and making good the surrounding surface area, and any incidentals required to complete the work. The reinstatement of the surface area will be measured and paid for separtely.

PS-TB 8 Installation of a new above ground hydrant

The schedule price for the installation of an above ground hydrant on an existing pipe line must include the excavation, cutting into the existing pipe, fitting of tee piece, welding the joints, fitting of couplings or cutting and welding of a socket on the pipe, installation of the new hydrant (supply of hydrant will be measured separately), and making good the surrounding surface area, and any incidentals to required to complete the work.

70% of the material and manufacturing cost of the valves must be from within South Africa, according to the applicable clauses for Local Content as described in the tender. Failure to purchase valves according to this requirement could result in the tender being non-responsive.

PS-TB 9 Removal of above ground hydrant

The schedule price for the removal of an above ground hydrant includes the removal of all existing hydrant fittings, removal of existing concrete or thrust blocks, and making good the surrounding surface area, and any incidentals required to complete the work. The reinstatement of the surface area will be measured and paid for separtely.

PS-TB 10 Construction of hydrant boxes

In addition to the existing clauses the following shall apply:
On completion and testing of the work the lower part of each hydrant body must be surrounded by a properly consolidated granular fill.

Chamber walls shall consist of brickwork or precast concrete tongued and grooved components as indicated on Drawings No. W4-F-001 and W2.

Each chamber is to be closed with the appropriate ductile iron surface box or manhole cover as specified, set in cement mortar to the correct line and slope of the surrounding surface, except where otherwise indicated.

PS-TB 11 Repair leak at underground hydrant

Leaks from hydrants are generally derived from two sources, either from the stuffing box or from the outlet, and shall be repaired as follows:

a) Leak from the stuffing box, shall be repacked in accordance with TB11 b) below.

b) Leak from the outlet, the bonnet must be removed and the jumper and washer inspected for wear, distortion and deformity. If the jumper and washer are defective, a new jumper with washer must be installed. If the jumper and seat is in order a new washer must be fitted and the stuffing box must be repacked.

PS-TC SPECIFICATION FOR GATE VALVES, AIR VALVES, FIRE HYDRANTS AND FITTINGS

PS-TC 1 Scope

This specification covers the criteria and requirements for water reticulation manufacture of cast-iron, cast steel, mild steel and spheroidal graphite gate valves from 80mm to 300mm nominal diameter with flanged joints systems.

70% of the material and manufacturing cost of the valves must be from within South Africa, according to the applicable tender clauses for Local Content. Failure to purchase valves according to this requirement could result in the tender being non-responsive.

PS-TC 2 Material

Pipework to be as listed in the Schedule of Rates and will be measured and paid for different pipe sizes under SANS 1200 L Pipework in the Schedule of Rates.

All repair couplings to be ductile iron with stainless steel bolts and nuts Grade 316 wrapped in wrapped with an approved petrolatum tape with finishing layer by means of cling wrapping.

The valve shall have a straight, unobstructed body passage and the gate shall be completely clear of the waterway in the fully open position.

a) A double O-ring spindle seal with dirt cover shall be provided.

b) An O-ring seal shall be provided between the body and the bonnet.

c) A back seal shall be provided to permit replacement of the spindle seal with the valve under pressure.

d) The seal shall totally cover the gate and be firmly bonded such that it does not become torn, loose or detached and that there is no leakage past the gate during tests or normal operation.

e) The valve shall be capable of withstanding a torque of 700Nm applied to the spindle in both opening and closing directions without damage to any of the components.

f) Detailed drawings as well as certification by an independent body of mechanical properties and chemical analysis of components shall be made available on request.

PS-TC 2 Working Pressures

The valves shall be suitable for working pressures of 1.6 MPa (i.e. Class 16) as specified on the Schedule.

PS-TC 3 Design

PS-TC 3.1 General – Gate Valves

The valves shall comply with the requirements of the latest SANS 664.

Scour and air valves to be installed as required. Scour valves may not discharge into underground drainage systems, only into open surface drains.

- All valves shall be SANS 664 and be approved by the Employer's Agent.
- Valves to be of the resilient seal or wedge-gate type. Resilient seal valves shall be used for general applications, and wedge-gate valves shall be used for valves dividing zones, or similar key applications
- Valves shall be clockwise opening / left hand closing.
- Direction of opening to be clearly marked on valve body or spindle cap.
- Valves shall be heavy duty; class 16 minimum.
- Valves shall have non-rising spindles.
- Valves shall be fitted with cast iron cap tops, secured with retaining bolts.

- Valve chambers shall be constructed in accordance with Drawing No. W4-V-001.
- Valve bell tobies shall be shall be ductile iron conforming to EN 124. The covers are to be secured to the frame with a galvanized chain or cable.
- All flanged gate valves shall be drilled according to SANS 1123 Table 1600/3.
- Pipes shall not be tested against a closed valve.
- Thrust blocks for test sections shall be approved by the Engineer prior to testing of pipes.
- Valve covers for general purpose valves shall be painted blue and shall protrude about 25mm above ground level in non paved areas.
- Valve covers for zonal valves and valves which generally remain closed, shall be painted red and shall protrude about 25mm above ground level.

PS-TC 3.5 Fire Hydrants

- Fire hydrants shall be installed in accordance with SANS 1200, comply with the local Fire Department standard regulations, and approved by the City's Nominated Employer's Agent.
- All Fire Hydrants shall be 65 mm diameter (internal).
- Outlets shall be London round thread with loose cap and securing chain.
- Hydrant spindles shall be provided with cast iron caps, secured with retaining bolts.
- Hydrants shall be clockwise opening / left hand closing.
- Only hydrants supplied with minimum thickness of 250 micron epoxy paint applied to all internal and external surfaces after it has been thoroughly cleaned by grit blastings to SA 2 ½ finish in compliance with the requirements of SIS 05 09 00 or hydrants with equivalent approved coatings, will be acceptable.
- Hydrants shall be supplied and installed complete with a flanged CI extension piece complete with stainless steel nuts and bolts to ensure depth not greater than 400mm.
- Fire hydrants shall be bolted to flanged branches of cast-iron hydrant tees.
- Hydrant covers shall be ductile iron conforming to EN 124 and shall be painted with yellow oil paint. The covers are to be secured to the frame with a galvanized chain.
- Hydrants shall be supplied and installed complete with a flanged CI extension piece complete with stainless steel nuts & bolts Grade 316 to ensure depth not greater than 400 mm.
- Hydrant chambers to be constructed in accordance with Drawing No. W4-F-001 or W2.
- Hydrants shall be installed at the end of dead "runs" for charging/bleeding the lines.

PS-TC 3.6 Fittings and Specials

- All bends, tee's reducers etc. to PVC pipes shall be Ductile Iron to EN 12842, fusion bonded thermoplastic coated internally and externally with Plascoat PPA 571 HES, to minimum 0.25 mm coating thickness with EPDM rubber insert seal unless otherwise stated.
- Only stainless steel bolts and nuts Grade 316 shall be used on all fittings such as saddles, flanges, short collar couplings, etc.
- All brass fittings shall be SANS approved on manufactured from DZR brass.
- Mild steel specials and fittings are to comply with type 1, 2 or 3 listed below as specified by the Employers Agent at works package stage:

Type 1: Mild Steel hot dipped galvanized with Plascoat or Carboline coating

Type 1 mild steel specials shall after manufacture be hot dip galvanized and coated internally and externally with Plascoat PPA 571 HES, to minimum 0.25mm coating thickness or Carboline 891 (3 coats, minimum 125 microns/coat) to the manufacturers specification.

Type 2: Mild Steel with Corrocoat Polyglass VE corrosion protection

Type 2 mild steel pipe specials shall be coated internally with average 1500 microns DFT (dry film thickness), minimum 1200 microns DFT, Corrocoat Polyglass VE-series (or equivalent to be approved by the Employer's Agent), and coated externally with 1000 microns nominal DFT Corrocoat Polyglass VE-series (or equivalent to be approved by the Employer's Agent) and be externally finished with Corrothane AP1 (or equivalent to be approved by the Employer's Agent) recoatable polyurethane topcoat, thickness to be fully even cover with no shine through and no ghosting, all applied strictly to the manufacturer's specifications. The applicator of the above corrosion protection system shall be ISO 9001 accredited.

Type 3: Mild Steel with Cement lining and Exterior Concrete sheating

Type 3 mild steel pipes, fittings and specials shall be protected by means of a cement mortar lining and sheathing as per PS-TE 1.2.1. These shall extend over the full effective length of each pipe, fitting or special except for those with plain or spigot ends where the sheathing shall cease 300 mm from the plain or spigot end.

All pipes, fittings and specials shall have a cement mortar lining which shall have a thickness in accordance with the following table:

NOMINAL DIAMETER OF PIPE, FITTING OR SPECIAL IN mm	THICKNESS OF LINING IN mm	TOLERANCE mm	MINIMUM BORE mm
100	5	+3 -0	85
150	5	+3 -0	135
230	6	+3 -0	205
305	7	+3 -0	285
306 to 610	10	+4 -0	

Pipes up to 305 mm nominal diameter shall allow a sphere (with the minimum bore diameter) to roll through under gravity and without hindrance to ensure the minimum bore for the pipe.

The lining of all fittings, specials, make-up pieces (where their length is less than their diameter) and at welded joints of nominal diameter 610 mm and greater shall be reinforced by means of a 50 mm x 50 mm x 2,5 mm diameter wire fabric. All reinforcement shall be tack-welded to the fitting or special in such a manner as to lie within the middle third of the lining.

The cement mortar shall be as specified for lining and sheathing. If the mix is different to that specified, then the proposed mix shall be submitted for approval to the Employers Agent. It shall not be subject to Alkali Aggregate Reaction where the aggregate expands deleteriously (>0,05%). All pipes up to 500mm diameter, fittings and specials shall have an exterior sheathing which shall have a minimum thickness of 20mm.

The exterior sheathing of all pipes, fittings and specials shall be reinforced by 5 mm diameter steel wire wrapped around the circumference. The wire shall extend over the full length of the sheathing with a maximum spacing of 40 mm. The wire shall be tack-welded to the surface at each end. All fittings and specials whose shape precludes this method of reinforcement shall have their sheathing reinforced in a similar manner to that specified above.

PS-TC 3.7 Compression fittings for HDPE Pipes

- All compression fittings included in this specification shall be designed and be suitable for use with potable water distribution systems and be supplied from manufacturer complying with the requirements

of ISO 9002. Fittings bodies may be of various configurations and include male adaptors, female adaptors, couplings, reduced couplings, elbows 90°, elbows 90° with male off take, elbows 90° with female off takes, elbows 45°, elbows 45° with male off take, Tee 90°, Tee 90° reduced / increased, Tee 90° with male off take, Tee 90° with female off take, Flanged joints, end caps and wall plate-elbows. The main size range is from 16 mm diameter up to 110 mm diameter. The fittings must be able to operate at a constant working pressure of 16 bar at an ambient temperature of 20 degree centigrade.

- Suppliers must provide approvals of minimum three internationally recognised authorities, such as DVGW, DS, SVGW etc. for their products.

- All bodies shall be injection moulded from recognised top quality polypropylene (PP) and be coloured black. The bodies must have moulded-in manufacturer identification, material and series information and show the dimensions of the pipe outside diameter and if necessary of the threads. All male and female threads of the bodies shall be injection moulded according to the ISO 7/1 standard.

- All compression fitting nuts shall be injection moulded from recognised top quality polypropylene (PP) and be coloured blue. The nuts must have an UV resistance of grade 8 according to ASTM D2565 and shall have moulded-in manufacturer identification and show the KIWA and Australian standard approval. The outer circumference must be provided with ribs to enhance handgrip or the tightening of the nut with adequate tools.

- All clamp rings shall be injection moulded from recognised top quality Polyacetalic Resin (POM) and be coloured white. Clamp rings shall not be connected to the thrust rings but be able to move freely on them. Thrust rings and clamp rings must be two (2) different components.

- All thrust rings shall be injection moulded from recognised top quality polypropylene (PP) and be coloured black. Thrust rings up to 50 mm diameter shall be secured in the body so that they cannot fall if the fittings are disassembled. Thrust rings must not be connected to the clamp rings. Thrust rings must apply pressure on the gaskets if the nut is tightened. Thrust rings and clamp rings must be two (2) different components.

- All gaskets shall be made of a recognised top quality Nitrile Rubber (NBR) and not contain a plasticiser that when in direct contact, has a harmful effect to either plastic pipes or fittings. Each gasket must have a smooth finish and be free from moulding flashes or similar. Gaskets up to 63 mm diameter must have an average Shore hardness of 70 ± 5 degrees. Gaskets greater than 63 mm diameter must have an average Shore hardness of 60 ± 5 degrees.

- All gaskets shall be coloured black. All gaskets must have a conical shape on the inside of the gasket for an easy insertion of the pipe without disassembling of the fitting. All gaskets are to have a wide flat sealing contact function with the pipe in question. All gaskets must have a cylindrical shape on the outside of the gasket. Gaskets must have two (2) lips on the bottom of the gaskets to guarantee a good sealing in cases of suction and vacuum. Gaskets must be pre – lubricated to facilitate easy installation. The use of O-rings as a pipe to fitting seal is not permitted.

- The compression fittings must conform to the relevant internationally recognised performance requirements:

-Type test Standard Dimensions of the threads		ISO 7/1
- Tightness of the joints	-	ISO 3458
- Tightness of the joints when subjected to bending	-	ISO 3503
- Resistance to pull-out	-	ISO 3501
- Internal under-pressure test	-	ISO 3459
- Long term pressure test	-	ISO/DIS 14236

- Samples to be submitted to the Employer's Agent for approval.

PS-TD SPECIFICATION FOR THE REMOVAL AND REPLACEMENT OF VALVES

PS-TD 1 Installation of new valve — Unit: No

The schedule price for the installation of a valve on an existing pipe line must include the cutting into existing pipe, installation of the valve (valve priced separately), trimming of pipe ends and the fitting of couplings, testing of the valve and making good the surrounding surface area, and any incidentals required to complete the work.

Working with asbestos cement can present hazardous conditions and the Asbestos Regulation 2001 shall apply. See applicable clauses in tender.

PS-TD 2 Installation of new valve (on Steel pipeline) — Unit: No

The schedule price for the installation of a valve on an existing steel pipe line must include the excavation, cutting into existing pipe, installation of the valve (valve priced separately), welding of the joints, fitting of the couplings, testing of the valve and making good the surrounding surface area and any incidentals required to complete the work.

PS-TD 3 Removal of old and replacement of new valve — Unit: No

The Contractor will be required to cut-out and replace the defective valve.

The schedule price for the replacement of a valve shall cover the cost of isolate the water line, to expose the valve, two pipe cuts, removal of old or defective valve, installation of a new valve (valve priced separately), trim pipe ends, fitting of two couplings, backfill, testing of the new valve, removal and disposal of surplus spoil and any incidentals required to complete the work.

Working with asbestos cement can present hazardous conditions and the Asbestos Regulation 2001 shall apply. See applicable clauses in tender.

PS-TD 4 Removal of old and replacement of new valve (on Steel pipeline) — Unit: No

The Contractor will be required to cut-out and replace the defective valve.
The schedule price for the replacement of a valve, and shall cover the cost of isolate the water line, excavation to expose the valve, two pipe cuts, removal of old or defective valve, installation of a new valve (valve priced separately), weld two joints, fit two couplings, test the new valve, backfill, reinstatement of surface, removal and disposal of surplus spoil and any incidentals required to complete the work.

PS-TD 5 Construction of valve chamber boxes

In addition to the existing clauses the following shall apply:
On completion and testing of the work the lower part of each valve body must be surrounded by a properly consolidated granular fill.

Chamber walls shall consist of brickwork or precast concrete tongued and grooved components as indicated on Drawings No. W1, W3-AV-001 and W4-V-001 and building in accordance of the specific drawing as instructed.

Each chamber is to be closed with the appropriate cast iron surface box or manhole cover as specified, set in cement mortar to the correct line and slope of the surrounding surface, except where otherwise indicated.

PS-TD 6 Repack gland and operate valve — Unit: No

The price tendered and the price paid for each valve operated and gland repacked during normal working hours 08:00 hours and 16:30 hours Monday to Friday inclusive, shall include full compensation for transport, supervision, labour, plant and equipment and all incidentals necessary for the completion of the work.

PS-TE GENERAL SPECIFICATIONS

PS-TE 1 SCOPE OF WORK

PS-TE 1.1 Excavation and Backfilling

PS-TE 1.1.1 Depth of Excavation

The minimum cover for communication pipes under roadways and in the verges shall be 500 mm. The minimum cover to all new mains shall be 600 mm except under roadways where the cover shall be 900 mm.

PS-TE 1.1.2 Payment for Excavation and Backfilling

The price Tendered and paid for excavations shall be inclusive of the excavation, backfilling and compaction, including full compensation for the transport and satisfactory disposal of surplus soil, supervision, labour, plant, equipment and any incidentals necessary for the completion of the work.

No payment will be made for over excavation. Any variations in trench depths shall cause the price tendered and paid to vary proportionally, rates are not cumulative.

Payment for water pipeline excavations will be measured in linear meters to a depth of between 0.0 to 1.0 meters (one meter) thereafter in steps of 1.0 meters.
The rates are not accumulative.

Depth to invert not exceeding 0 to 1.0 meters
Depth to invert exceeding 1.0m but not 2.0 meters
Depth to invert exceeding 2.0m but not 3.0 meters
Depth to invert exceeding 3.0m but not 4.0 meters
Depth to invert exceeding 4.0m but not 5.0 meters

PS-TE 1.1.3 Maintaining Excavations in a Safe Condition

The water mains are generally located in a road reserve. The Contractor shall be solely and entirely responsible for maintaining the excavations in a safe condition and this responsibility shall in no way be diminished by any instruction from the Employer's Agent to take additional or improved protection or precautionary measures.

It should be noted by Tenderers that plastic danger tape alone is not regarded as adequate protection around excavations and its sole use for that purpose shall not be approved.

PS-TE 1.1.4 Trenches in Roadway

Trenches in roads shall be backfilled as early as possible after the completion of pipe laying, repairs or any work that necessitates excavations in a road or within a road reserve.

The road surface shall be cut with a diamond tipped saw or other approved method by the Employer's Agent in writing before commencing with the excavation.

PS-TE 1.1.5 Site to be Kept Tidy

The working area shall be kept in a neat and tidy condition by the Contractor and the rates shall include keeping the road gutters clear of excavated material at all times.

Surplus excavated material shall not remain on the work site for more than 48 (forty eight) hours. If the Contractor does not comply with this requirement the Council will remove the surplus material and deduct the cost of removing such surplus material from any monies due to the Contractor.

PS-TE 1.1.6 Excavation in Rock, Intermediate and Soft Material

For the purpose of this Contract excavated material shall be divided into 3 (three) classifications as follows:

(a) "Rock" - will be held to be solid rock and boulders exceeding 0,20 cubic metres in volume, the excavation of which, in the opinion of the Employer's Agent, necessitates the use of explosives.

(b) "Intermediate" - will be held to be all material other than rock, the excavation of which in the opinion of the Employer's Agent, warrants or necessitates the use of machines such as paving breakers, backactor, trenchers etc. and is not freely pickable by hand.

(c) "Soft" - will be held to be all material other than rock or intermediate material which is removable by "ditch with" excavations classified as soft.

The Contractor shall immediately notify the Employer's Agent if he encounters material which he considers should be classified as "rock" or "intermediate" and shall not proceed with the excavation thereof until the Employer's Agent has given a ruling on the classification of the material and until the necessary measurements to compute the quantity of "rock" or "intermediate" material to be excavated have been made and agreed upon.

Any material excavated before the inspection and not measured by the Employer's Agent shall not be classified as "rock" or "intermediate" material.
Where rock is interspersed with other material making accurate measurements thereof impractical the Employer's Agent shall access the proportion of rock in the material to be excavated in consultation with the Contractor.

The Employer's Agents ruling on the classification of the material and his assessment of the proportion of the "rock" or "intermediate" shall be final.

PS-TE 1.2 Cement Mortar and Lime

PS-TE 1.2.1 Cement Mortar

Cement mortar shall be composed of one part cement to three parts sand (1:3) by volume properly mixed together, with water added to give the required consistency and thoroughly worked into condition immediately before use, unless the mix is otherwise stated on the drawings or instructions.. Ordinary Portland Cement shall be used for all mortar and concrete work on watermains unless otherwise stated.

For the application of mild steel pipes, the cement mortar shall be composed of Portland cement in accordance with SABS 471 (as amended), sand in accordance with SABS 1090 (as amended) and water well mixed and of proper consistency to obtain a dense homogeneous lining that will adhere firmly to the pipe surface. The aggregate to cement ratio shall not exceed 1,5:1 and the water content shall be the minimum consistent with workability and the process used.

PS-TE 1.2.2 Lime Mortar

Lime mortar shall be composed of one part of plastic hydrated lime to four parts of sand (1:4) by volume, unless otherwise stated on the drawings or instructions. It shall be thoroughly mixed and sufficient water added to give a stiff consistency. Immediately before use half part cement ($^1/_2$: 1:4) by volume shall be added and thoroughly worked into the mix, adding water if necessary. The mortar shall be placed within 60 minutes from the time when the cement was added to the lime.

PS-TE 1.3 Covers and Frames

It is expected that existing belltobies, covers and frames shall be recovered and re-used. Where they have to be replaced, they shall be replaced with the same or with items and materials approved by the Employer's Agent.

PS-TE 1.3.1 Step Irons

Step irons shall be manufactured from mild steel, encapsulated with polypropylene and shall have anti-slip blocks on the stepping surface (if required).

PS-TE 1.3.2 Watertightness of Repairs

Repairs shall be visually inspected for ingress or egress of water on existing pipelines. All repairs shall be watertight. New installations shall be pressure tested as per SANS 1200 specifications.

PS-TE 1.4 Typical Finishes

PS-TE 1.4.1 Plaster

All work to be plastered shall be clean, free from dirt, dust and oil and shall be sufficiently rough to provide a good bond. The joints in brickwork to be plastered shall be raked out as bricklaying proceeds.

Plaster shall be applied in coats not exceeding 10mm in thickness well worked or otherwise indicated on the drawings to provide a dense impervious product. Plaster which is to be covered by subsequent work (tiling etc.) shall be roughened to provide a good bond. Exposed external plaster shall be finished smooth with a steel float.

PS-TE 1.5 Contractors responsibility to Consumers

PS-TE 1.5.1 Consumer Complaints

The Contractor's responsibility in respect of no water or poor pressure complaints arising out of the execution of the Contract shall be limited to ensuring that an adequate cold water supply exists to the complainant's property.

The Contractor shall not be required to carry out any plumbing work within a private property unless instructed by the Employer's Agent. Under these latter circumstances, the Contractor shall be compensated on a day work basis for any work done.

PS-TE 1.5.2 Advance Warnings to Consumers

The Contractor shall give all consumers affected at least 24 hours notice in writing of his proposals in regard to every planned interruption of the water supply necessary for the execution of his work, and for the systematic cleaning of sewers. Failure to do so could result in the suspension of work for a period as determined by the Employer's Agent.

PS-TE 1.5.3 Work in Servitudes

The Contractor shall give 7 days' advance notice to both the Employer's Agent and the property owner of his intention to commence work in a servitude. The Contractor shall not permit his workmen and labourers to use the servitude as a temporary right-of-way and shall carry out the work expeditiously and with the minimum inconvenience to the occupiers and owners of adjacent properties.

The Contractor shall take all necessary precautions for the protection of persons, livestock, buildings, services and property.

The top soil shall be kept segregated and all gardens, fences, paths, etc. shall be reinstated to their former conditions.

No extra payment will be made to the Contractor should it become necessary to omit sections and return to them later. It is not intended, however, that the Contractor should be called upon to return to the site after all the other sections have been completed and the Contractor has removed his plant and equipment.

Trees removed in servitudes shall remain the property of the stand owners if required by them.

PS-TE 1.6 Material and Storage

PS-TE 1.6.1 Return of Materials

All items removed from the water network i.e., hydrants, hydrant covers, meter boxes,, pavement slabs, blocks etc. shall remain the property of the Council and shall be returned by the Contractor to the Employer's Depot. The Contractor shall obtain the signatures of the appropriate Depot Superintendent, acknowledging receipt. All the material must be itemised i.e. type, size, diameter, make, number, meter number, meter reading, stand number etc. from which the meter has been removed.
The Contractor shall allow in his rate for the return of such material to the Employer's Depot

PS-TF HDPE PIPES FOR HORIZONTAL DRILLING

PS-TF 1 Scope

Horizontal drilling is a trenchless technique for installing a sleeve or pipeline underneath roads, pavement or other above ground obstructions to prevent damage to the upper surfaces.

PS-TF 2 Materials

The raw material to be used in the manufacture of the HDPE pipe shall be a minimum PE100 SABS ISO 4427 pipe. For water mains, Class PN12,5 or Class PN16 HDPE pipe will be used. The pipe required will be finalised before the commencement of any work.

All pipes used in construction must bear marking indicating compliance with SABS ISO 4427.

Pipes with diameters of 100mm or greater must be supplied in straight lengths and not in coils. This shall be done to prevent pipes curling, resulting in improper welding of pipes.

The Contractor shall be responsible for securing construction materials, the cost of which shall be included in the tendered rates. Effective administration measures for taking delivery of material and controlling usage and wastage shall form part of the responsibility of the Contractor, the cost of which shall be included in the rates tendered.

PS-TF 3 Storing and Handling

All HDPE pipes and fittings shall be securely stored in areas to the Employer's Agent approval.

Every precaution shall be taken in the handling of the HDPE pipe and fittings. Scratching of the outer surface may result in the Employer's Agent rejecting them for use in the works. Special precaution must be taken when transporting the HDPE pipe from the site where it is welded to the point where it is to be launched into the existing main. Pipes shall not be dragged along the ground as this will result in scratches on the outer surface of the pipe which could result in the failure of electrofusion fittings welded to the pipe.

PS-TF 4 Plant and Equipment

Plant, equipment and tools to be used by the Contractor in the execution of work shall be of good quality, sound design and modern manufacture. Plant and equipment must be suitable for its required purpose, must be of the proper type to ensure that work is carried out efficiently and to the required standards and must be maintained in a state of efficiency to the satisfaction of the Employer's Agent.

The equipment shall be accurate and be able to operate in varying soil conditions.

The Contractor shall also provide a certificate of calibration for the welding machine to be used. The certificate shall bear the model number of the welding machine, the name and address of the certifying agent, the date of the test and a statement as to the accuracy of the temperature and pressure gauges on the machine in question. A certificate of calibration should be dated no earlier than 30 days prior to the day on which the Contractor is to commence work. The cost of the test must be included in the rates submitted.

Transportation to and from site, maintenance, fuel and lubrication of the plant shall be the responsibility of the Contractor.

The tender price submitted for the work to be executed must include the cost of establishment, furnishing of all materials, plant, plant operations and equipment necessary to do the work during the period of the contract.

PS-TF 5 Construction Method

PS-TF 5.1 Welding of the HDPE pipe

It may be required that the HDPE pipe be welded in a continuous length on site. The HDPE pipes shall be supplied in straight lengths, and not in coils, to avoid the pipe ends from curling and thus hindering the welding process. To reduce the number of welds necessary, pipes should be supplied in the maximum straight lengths available.

The HDPE pipe shall be joined by means of heat fusion using approved butt welding equipment by fully trained operators in accordance with SANS 0268-1 and the pipe manufacturer's specifications. The Contractor shall advise the Employer's Agent of the welding machine and of the welding parameters and tables to be used.

Test welds shall be carried out and shall be tested and approved by the Employer's Agent before welding on site can commence.

Once welding of a joint has been completed and allowed to cool then the external bead shall be removed by an approved means to produce a smooth outer diameter necessary to prevent any snagging during the drilling process.. The beads are to be placed in a transparent plastic bag with the joint number marked on the bag for inspection by the Employer's Agent.

Each joint shall be carefully examined to ensure that the welded joint is capable of withstanding the tensile forces exerted on the joint during the drilling process. All joints shall be watertight.

The contractor shall provide a digital thermometer or similar for the accurate measurement of the weld temperatures.

No separate payment shall be made for the welding of pipes and for the removal of internal and external beading.

PS-TF 5.2 Launching and receiving trenches

The spacing of these launching and receiving excavations shall be dictated by the location of manholes, water valves &,hydrants, house connections, etc.

The position of each launching and receiving excavations shall be sited so as not to interfere with vehicular and pedestrian access either in the roadway or to properties. Disruption to the normal activities which occur in the area surrounding the works shall be kept to a minimum.

The excavation of the launching and receiving trenches shall be measured as a normal excavation. The rate supplied for excavations shall therefore take this into account.

PS-TF 5.3 Installation of the HDPE pipe

The HDPE pipe shall be continuous through the sections where it may have been cut due to the leangth required for the process e.g. in the launching and receiving trenches. For water mains, the HDPE pipe must be joined using appropriate electrofusion couplings.

The new mains must be connected to the existing reticulation if not being used as a sleeve. **The Contractor must submit details of how he intends to connect into the existing mains, at works project stage.**

The finished pipeline shall be free from defects such as foreign inclusions or pinholes. The pipeline shall be totally watertight and free of any leakage into or from the pipe.

Any latent defects which will affect the integrity and strength if the new pipeline shall be repaired at the Contractor's expense in a manner to be mutually agreed to by the Employer's Agent and the Contractor.

The Contractor shall advise the Employer's Agent timeously of the installation of the HDPE pipe so that his representative can be present during the process.

PS-TF 6 Testing

PS-TF 6.1 Water Mains

All new water infrastructure, including new laterals must be pressure tested according to the specified testing pressure as per SANS 1200 L

After a section of water main has been completed, the Contractor shall pressurise the water main to allow for all fittings to be inspected for leaks or defective workmanship by the Employer's Agent. For this purpose all couplings, bends, saddles, house leadings, valves and hydrants shall remain open until the main is pressurised for inspection by the Employer's Agent.

The above test procedure will be measured per test carried out, and the unit rate tendered for each test shall include the supply of water, materials, plant, labour and equipment required to undertake the required testing.

The Contractor shall make allowance in his rates for the supply of any equipment necessary to allow for the air testing of the continuously welded HDPE prior to installation, as well as for the inspection of pressurised water mains once it has installed.

PS-TF 7 Flushing (Sterilize) New Pipes

After all new installations the Contractor will be responsible for disinfection of the newly installed pipelines. This will be done in accordance with the specifications described in SANS 1200 L subclause 5.10.

PS-TF 8 MEASUREMENT AND PAYMENT

PS-TF 8.1 Pay Item

Supply of pipes for horizontal directional drilling	Unit:m
Installation and horizontal directional drilling of pipes	Unit:m

The rate tendered must include full compensation for all costs of drilling the pipe, jointing and installing the new pipe, launch/retrieval pits, testing, safety measures, all supervision, labour, materials, transport, equipment and incidentals required.

PS-TH SLIPLINING

PS-TH 1 Scope

This specification covers the insertion, by sliplining, of continuous liner pipes into existing pipelines with minimal disturbance of the surface, traffic disruption or interruption of service.

The liner pipe is normally pulled into the existing pipeline by cable and winch and the resultant annulus between the host pipeline and the liner pipe is usually filled with grout.

PS-TH 2 Materials

LINER PIPE

The liner pipes for sliplining shall:

a) be High Density Polyethylene (HDPE), complying with the requirements of SANS 4427-1.

b) be butt welded into continuous lengths in accordance with the pipe manufacturer's recommendations and SANS 10268-1.

c) have the internal and external welding beads removed without leaving notches.

d) be able to withstand without damage the longitudinal force to be transmitted by winching (and/or pushing) equipment.

GROUT

The cementitious grout shall:

a) be a low strength annulus filler

b) be of suitable low viscosity to fill the annulus between the host pipeline and the liner pipe, under gravity or minimal pressure.

c) contain only cement, potable water, and possibly additives such as fly ash, silica fume, chemical dispersants or thixotropic agents to enhance flowability, control set time and reduce segregation.

d) contain cement that shall comply with the requirements of SANS 50197-1.

PS-TH 3 Construction

General

1. The liner pipe is usually pulled into the host pipeline using a cable and winch. However the liner pipe can be inserted by pushing with an excavator bucket and a choker strap. In certain circumstances it may be advantageous to use both methods in combination.

2. Cables and winches (and/or pushing equipment) shall be suitable for the particular sliplining operation and shall have sufficient pulling (and/or pushing) capacity. Pulleys and any associated framework installed in the winching points shall be capable of withstanding the substantial forces required. Winches shall be equipped with load gauges and controls to avoid overloading and should be of the capstan type to avoid cable damage and have an immediate stopping facility.

3. The pulling head shall be suitable for attaching to the liner pipe securely. It shall be capable of withstanding the winching forces and guiding the liner pipe into and through the host pipeline. It shall have a rotating eye to avoid the liner pipe twisting the cable. Once the liner pipe has been installed, the pulling head shall be capable of being removed from the host pipeline.

Preliminary

1. The internal diameters and lengths of the existing pipelines to be lined shall be measured and verified on site prior to the liner pipe being ordered.

2. The pipelines to be lined shall be inspected by CCTV to identify any obstructions, protruding connections, defects, infiltration, ovality and any joint offsets, separations and misalignments. All connections onto the

existing pipeline shall be measured and noted.

3. The pipelines shall be cleared of any obstructions including silt, debris, roots, foreign objects or encrustations.

4. Any necessary point repairs shall be made to the existing pipeline.

PS-TH 4 GENERAL PREPARATION

All insertion pits and winching points shall be of suitable size to accommodate the necessary sliplining operations and equipment.

There shall be a contingency plan to remove the liner pipe in the event that it cannot be completely inserted due to unforeseen problems. This should include a means of pulling the liner pipe back out of the host pipeline and a means of cutting the liner pipe off in the insertion pit should it jam in the host pipeline.

PS-TH 4.1 EXISTING PIPELINE

To ensure the bore of the existing pipeline is of adequate size to accommodate the liner pipe, any excessive hard deposits on the pipe walls shall be removed using a pipe scraper, cutter, borer or pig to ream the pipeline.

The pulling head with a section of liner pipe of length at least twice the liner pipe diameter or a proving ring shall be pulled through the pipeline to demonstrate that the liner pipe can negotiate the host pipeline. Cables shall be attached to both ends to allow it to be retrieved should it be obstructed.

The existing pipeline shall be given a final clean immediately prior to lining to remove any remaining silt or debris.

The pipeline shall be inspected by CCTV camera to confirm all debris and silt has been removed.

PS-TH 4.2 SLIPLINING

Care shall be exercised to avoid overstressing the liner pipe. The maximum allowable winching forces shall be calculated for the liner pipe (limited by the cross-sectional area and maximum safe permissible short term tensile stress of the liner pipe material). The winch load gauge shall be monitored during the winching process.

The whole length of liner pipe shall be continuously supported on rollers to minimise friction and avoid damaging the liner pipe. It may be necessary to put guards over the edges of the existing pipe to prevent gouging of the liner pipe during insertion. The liner pipe shall be winched through in one continuous operation.

A lubricant may be used to reduce friction between the liner pipe and the host pipeline during installation. The lubricant shall be a nontoxic, oil-based product that has no detrimental effect on the liner pipe or host pipeline, does not support bacterial growth or affect the general characteristics of the flow.

Allowance should be made for the liner pipe stretching during insertion then shortening after completion of the installation. A 24 hour relaxation period should be allowed.

PS-TH 4.3 GROUTING THE ANNULUS

If ordered by the employer's agent the annulus between the liner pipe and the host pipeline shall be grouted up. The grout shall be mixed in a paddle, high shear or colloidal grout mixer to a homogenous consistency.

The grout shall be delivered to the injection point at a steady pressure with a suitable grout pump at the mixing tank and suitable grout hoses. The distance the grout travels, whether in the hose or the annulus, should not exceed 100 m. All grout should be used within one hour of being mixed. Means of accurately measuring grout component quantities, pumping pressures and volumes shall be provided. Pressure gauges shall be provided at the grout pump and at the injection point. The pressure gauges shall be equipped with diaphragm seals and shall have a working range between 1,5 and 2,0 times the planned grout pressure with an accuracy of no more than 2% error.

The grout mixture and installation procedures shall be such that the annulus is completely filled. Adequate grouting points shall be used to ensure this. The calculated volume of the annulus and the actual volume of grout used shall be monitored. Should the volume of grout being used exceed the estimated volume, this would be an indication that grout is penetrating through the existing host pipeline and into surrounding cavities.

Precautions shall be made to prevent the liner pipe from floating when grouting. To prevent floating the liner pipe should be held down or filled with water and the grouting should take place in stages. Flotation forces may not only float the liner pipe in the host pipeline but may cause the liner pipe to deform or buckle.

PS-TH 5 SERVICE CONNECTIONS

After the liner pipe has been installed the existing connections shall be re-established through the liner pipe.

PS-TH 6 TESTING

PS-TH 6.1 Water Mains

All new water infrastructure, including new laterals must be pressure tested according to the specified testing pressure as per SANS 1200 L.

After a section of water main has been completed, the Contractor shall pressurise the water main to allow for all fittings to be inspected for leaks or defective workmanship by the Employer's Agent. For this purpose all couplings, bends, saddles, house leadings, valves and hydrants shall remain open until the main is pressurised for inspection by the Employer's Agent.

PS-TH 7 FLUSHING (STERILIZE) NEW PIPES

After all new installations the Contractor will be responsible for disinfection of the newly installed pipelines. This will be done in accordance with the specifications described in SANS 1200 L subclause 5.10.

PS-TH 8 MEASUREMENT AND PAYMENT

PS-TH 8.1 SUPPLY AND INSTALL BY SLIPLINING SOLID WALL HIGH DENSITY POLYETHYLENE (HDPE) LINER PIPES

Supply of pipes for sliplining Unit: m

Installation and sliplining of pipes Unit: m

The price tendered and paid shall include full compensation for the cost of installing the liner, butt welding, testing of welds, pipe fittings, joints and couplings, liner pipe supports, final cleaning of pipelines, CCTV inspections, testing, safety measures, all supervision, labour, materials, transport, equipment and incidentals required to reline the host pipeline.

PS-TH 8.2 GROUTING OF ANNULUS

Grouting of annulus Unit: m^3

Grouting the annulus shall be measured and paid for separately.

The price tendered and paid shall include full compensation for mixing and pumping of materials, testing, safety measures, all supervision, labour, materials, transport, equipment and incidentals required to grout the annular space between the liner pipe and the host pipeline including any grout that penetrates through the host pipeline and fills any surrounding cavities.

PS-TI SAFETY AND SECURITY SPECIFICATIONS

Contents

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PS-TI 6 CONTRACTORS BUILDING
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PS-TI 1 INTRODUCTION

Ensuring the safety and security of the workforce and surrounding communities is central to the Contract between the Client or Employer (GCC) and the Contractors. This ethos will be adopted and applied by the Contractor. This particular specification describes the Security Operating Conditions (SOC) for Contractors, which underpins this approach. These conditions shall be understood and implemented as part of the Contractor's security risk mitigation strategy.

The Contractor shall ensure that a multi-layer and multi-stakeholder approach is applied when implementing security risk mitigation measures. This approach shall also be conveyed to, and practised by all sub-contractors engaged by the Contractor. The Contractor has the sole responsibility for ensuring the adequacy of its own security arrangements, mitigating all security risks identified in their own Security Threat and Risk Assessment for each operation.

The SOC detailed in this particular specification is relevant to all aspects of security operations in support of the Contract, which may be raised but never lowered. Any deviation shall require prior approval from the Employer's Agent. Neither the Employer, nor the Employer's Agent, gives any assurance that the requirements set out in this particular specification are sufficient or complete, such as to ensure the security and safety of Contractor operations or personnel. The Contractor is fully responsible for ensuring the adequacy of its security arrangements.

PS-TI 1.1 Aim

The aim of this particular specification is to set out the SOC in a format that can be clearly understood and implemented by the Contractor and any selected Private Security Company (PSC), in order to ensure a secure and safe working environment in executing the works. It provides guidance on security related matters and stipulates the security requirements which shall be adhered to during the delivery of the Contract.

The information contained within this particular specification will enable the Contractor to prepare Security Plans and deploy security resources for the Contract.

PS-TI 1.2 Scope

The standards and requirements in this SOC shall apply to all Contractor security activities conducted for the Contract. Failure to adhere to obligations within this particular specification may be considered a material breach of Contract. Provision will be made for the different Risk Categories as below:

High Risk	High risk project where serious security threats may exist at the construction site.
Medium Risk	Medium risk project where some security threats may exist at the construction site.
Low Risk	Low risk project where standard security threats can be at the construction site. This does not pertain to a very low / no-security risk site for small projects or sites inside an already secure area.

PS-TI 2 STANDARDS

All security systems and security measures shall comply with South African laws, regulations and standards including the following:

- RICA: Regulation of Interception of Communications and Provision of Communication-

related Information Act 70 of 2002
- POPI: Protection of Personal Information Act 4 of 2013
- OHSA: Occupational Health and Safety Act 85 of 1993
- PSIRA: Private Security Industry Regulatory Authority
- SANS 10222-1: Electrical Security Installations: General
- SANS 10222-2: Electrical Security Installations: Access control
- SANS 10222-3: Electrical Security Installations: Electric security fences
- SANS 10222-5: Electrical Security Installations: CCTV installations
- SANS 10142: The Wiring of Premises
- SAIDSA bylaws:
  - Bylaw 1 - Requirements for a Central Station
  - Bylaw 2 - Requirements for an Un-manned Central Station
  - Bylaw 3 - Requirements for an Armed Reaction Service
  - Bylaw 5 - Minimum Installation Standard for Intruder Alarms
  - Bylaw 6 - Requirements for an Off-Site CCTV Central Station
  - Bylaw 7 - Specialised Security Service
  - Bylaw 8 - Electric Fence Installer
  - Bylaw 9 - Standard Installation - CCTV
  - Bylaw 10 - Communications Standard
  - Bylaw A - Administrative Bylaw

PS-TI 3 GUARDING REQUIREMENTS

The guarding requirements are informed by the Private Security Industry Regulatory Authority (PSIRA) security grades (https://psiraguide.co.za/psira-grades).

The four grades are described as follows:

- Grade C security guard's main function is access control of a higher risk area and supervision of lower grade security guards.
- Grade B security guard's main function is access control in high-risk areas where documentation and basic computer skills might be required. This includes a site or shift commander, managing of lower grade security grading officers and possible inspector doing site visits.
- Grade A security guard's main function is a site manager or commander that has the following responsibilities:
  - Controlling and managing a number of functions
  - Managing the security workforce
  - Conducting risk assessments and evaluations on site daily
  - Basic investigative skills
  - Problem solving
  - Designing security solutions

The following guarding requirements may be considered. All guards shall be issued with standard guarding equipment such as radios, identification, baton, torch, etc. Refer to PS-TI 4 for site definitions.

Table 1: Guarding requirements for enclosed sites

	Low Risk	Medium Risk	High Risk
Entrance guards	2 x Grade C	2 x Grade C	2 x Grade C 1 x Grade B
Site guards		1 x Grade C	2 x Grade C
On-site supervisor			Yes, Grade A
Equipment: Body cameras			Yes
Equipment: Emergency panic buttons		Yes	Yes

Table 2: Guarding requirement for open sites

	Low Risk	Medium Risk	High Risk
Site Guards	Grade C	Grade C	Grade C
Armed response		Yes	Yes
Equipment: Body cameras			Yes
Equipment: Emergency panic buttons		Yes	Yes

By ensuring that guards are aligned and qualified as per the PSIRA grades, it is assumed that these individuals have received the necessary training and experience accordingly.

PS-TI 4 CONSTRUCTION SITE LAYOUT AND RELATED REQUIREMENTS

Two types of site layouts are typically present:

- **Fully enclosed construction site:**
  The construction activities happen inside an area which can be closed off from public spaces with a perimeter fence or wall. Such a site should have a personnel entrance and a vehicle entrance (sometimes combined).

- **Open construction site:**
  The construction activities are close or exposed to public spaces e.g., the installation of water pipes next to a public road. An open site is typically demarcated with danger tape and notice boards. Only guards are recommended for open sites.

The following diagrams show typical site layouts. The actual site layout shall be determined by the project team according to the project requirements, but with consideration of these layouts.

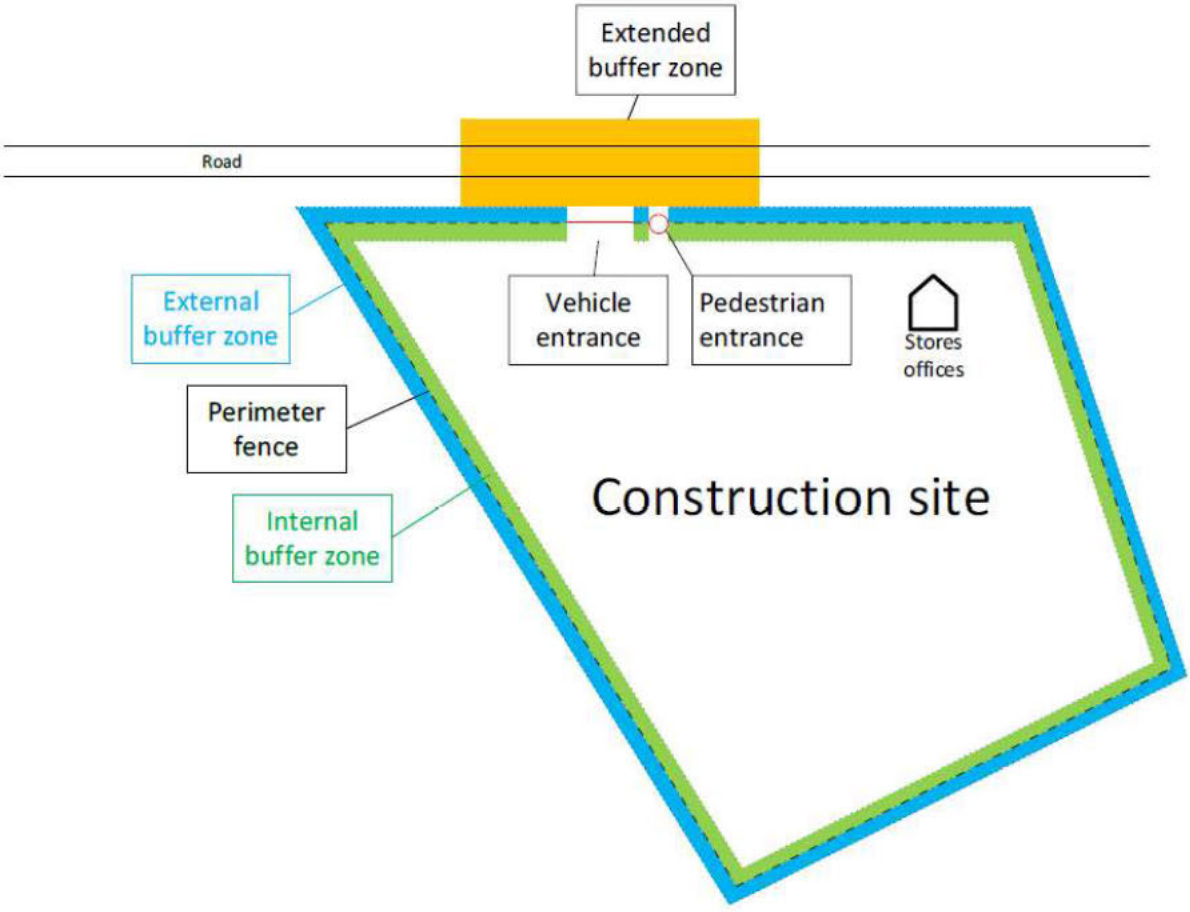


Figure 1:Typical enclosed construction site layout

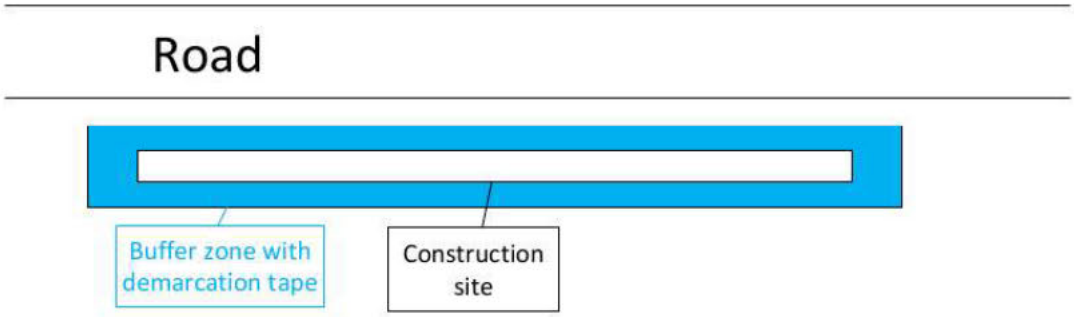


Figure 2: Typical open construction site layout

PS-TI 5 PERIMETER FENCE

All site camps shall have an external perimeter fence that demarcates the site, and deter and delay access to the site through unofficial entrances. The internal perimeter fence is not a security fence but a fence to limit access into the space between the two fences.

The area between the internal and external fence shall be kept clear of all vegetation, large rocks and other obstructions that may limit visibility. Soil treatment and a gravel layer may be required to provide an accessible platform for security services and to limit the growth of vegetation.

A buffer of at least 1m outside of the external fence shall be kept clear of vegetation, large rocks, and other obstructions. Soil treatment and a gravel layer may be required.

The perimeter and internal fences shall comply with the requirements as listed in Table 3.

Table 3: Fencing requirements

	Low Risk	Medium Risk	High Risk
External perimeter fence:			
Height above ground level	2.4m	2.4m	3m
Anti-digging protection	Optional	Required	Required
Electric fence	Optional	Minimum 6 strand electric fence on top of the security fence	Minimum 8 strand electric fence on top of the security fence
Internal fence:			
Height above ground level	2m	2m	2m
Spacing from external fence			5m
Anti-digging protection			No
Electric fence			No

PS-TI 6 CONTRACTOR'S BUILDINGS

The distance between office buildings, stores, plant, etc. from risk areas such as the site perimeter and access gates shall be at least the following:

Low risk category: 5m
Medium risk category: 10m
High risk category: 25m

The areas between the perimeter and gates shall be clear so that cameras can have a clear view of the areas. Trees, shrubs, grass, and other obstructions shall be removed to allow clear views.

Gate houses shall be located inside the security area.

PS-TI 7 SITE ACCESS POINTS

Site access points allow access to the site and shall consist of pedestrian and vehicle gates. Additional gates may be required for emergency or delivery purposes. Gates shall be stronger and of a higher standard that the external perimeter fence. Anti-digging, electric fences, etc. shall be provided in a similar fashion to the external perimeter fence. The size and number of gates shall be suitable for the type and size of the construction site.

The in- and out-vehicle directions may be changed to suite the identification (ID) reader positions. Site access points shall follow specifications per risk category as per Table 4.

Table 4: Site access points requirements

	Low Risk	Medium Risk	High Risk
Supervised pedestrian gate	3-arm full height turnstile	3-arm full height turnstile	3-arm full height turnstile
Unsupervised pedestrian gate	4-arm full height turnstile	4-arm full height turnstile	4-arm full height turnstile
Vehicle gate	Sliding gate	Sliding gate	Sliding gate
Vehicle barrier	Manual booms	Motorized booms	Motorized booms with boom fence and spikes interlocked with internal booms
Internal vehicle barrier for anti-tailgating	No	No	Internal booms with motorized booms with boom fence interlocked with external booms

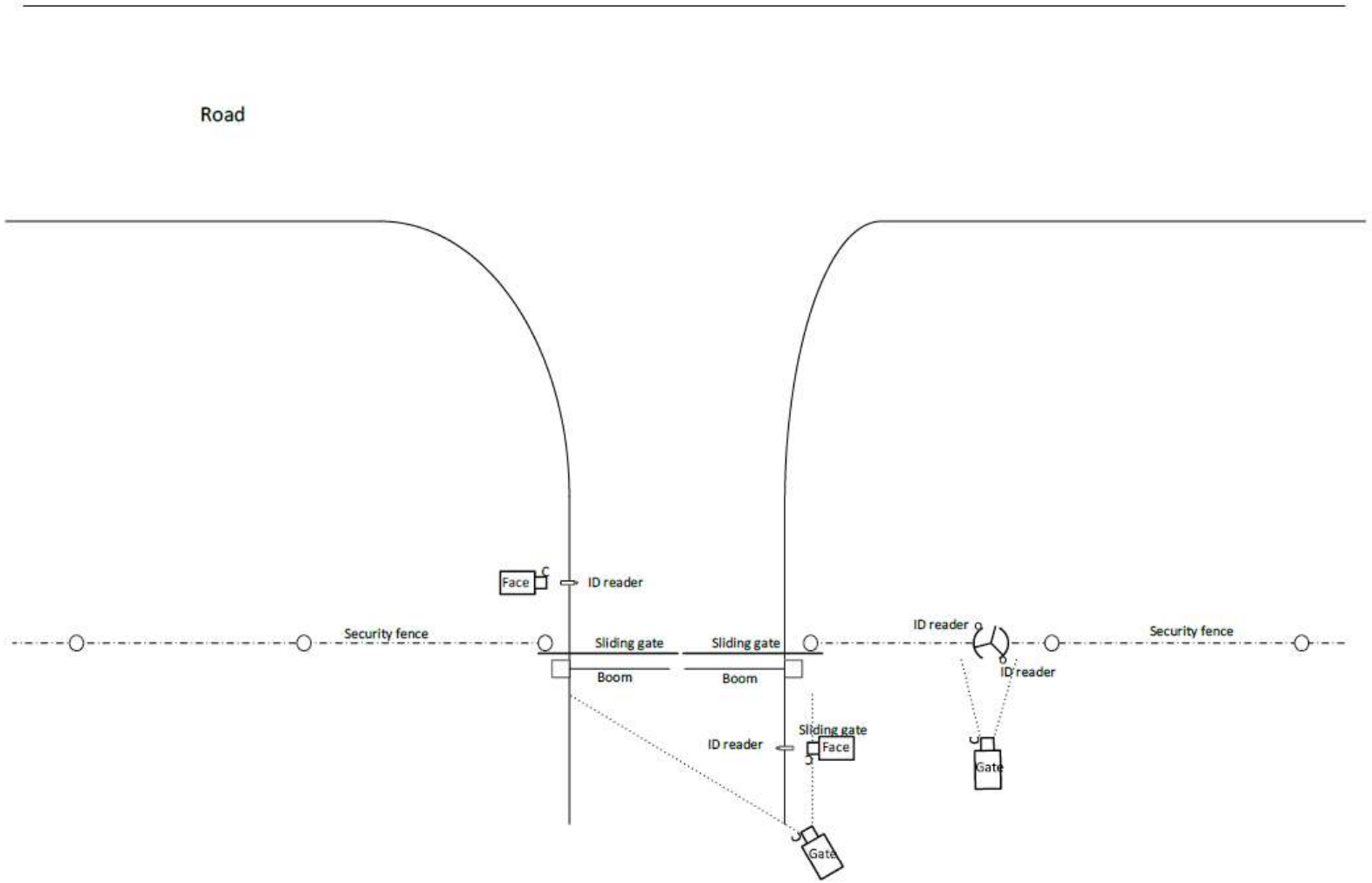


Figure 3: Low Risk Category security entrance (the site specific layouts may not always resemble ideal layout perfectly, based on the dynamics of the site)

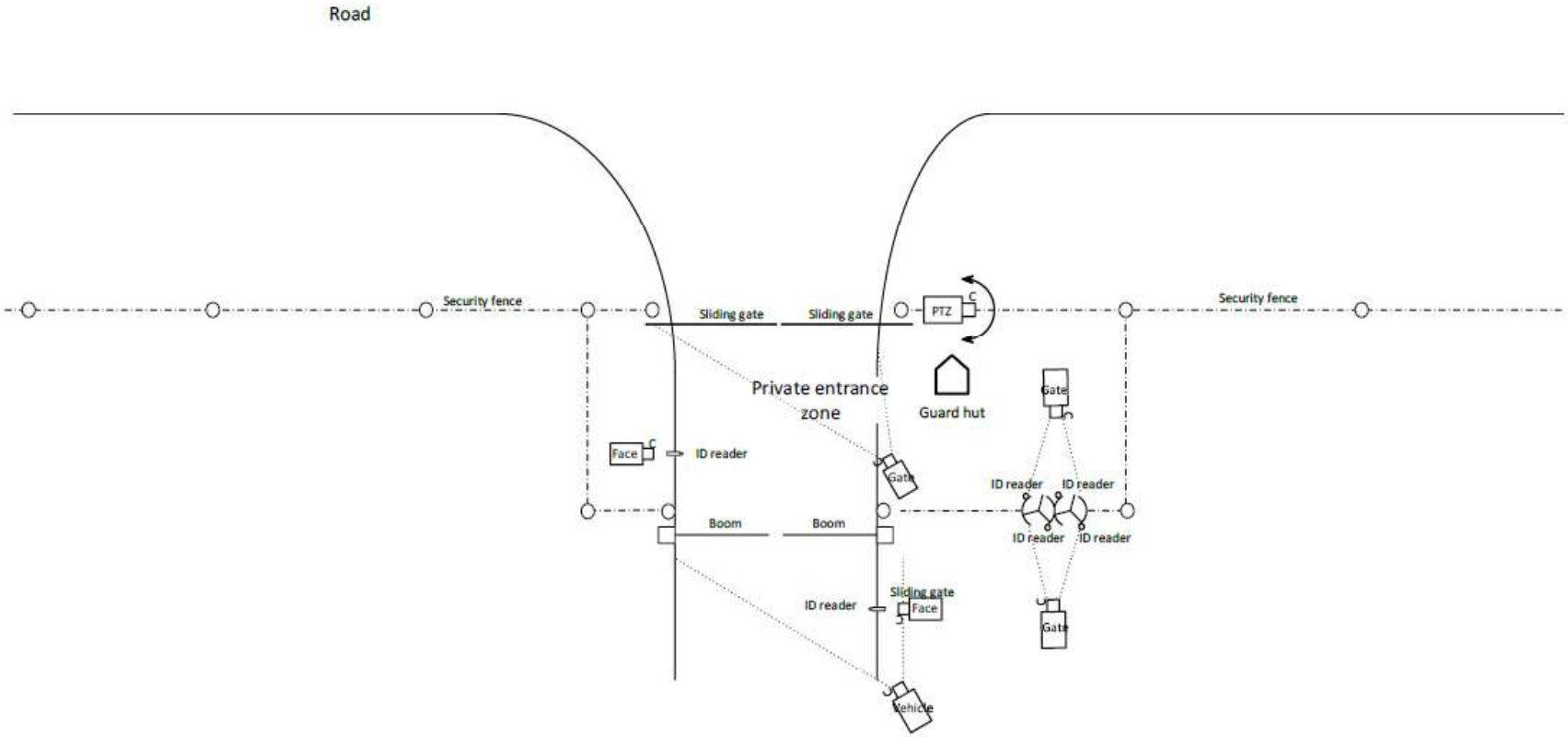


Figure 4: Medium Risk Category security entrance (the site specific layouts may not always resemble ideal layout perfectly, based on the dynamics of the site)

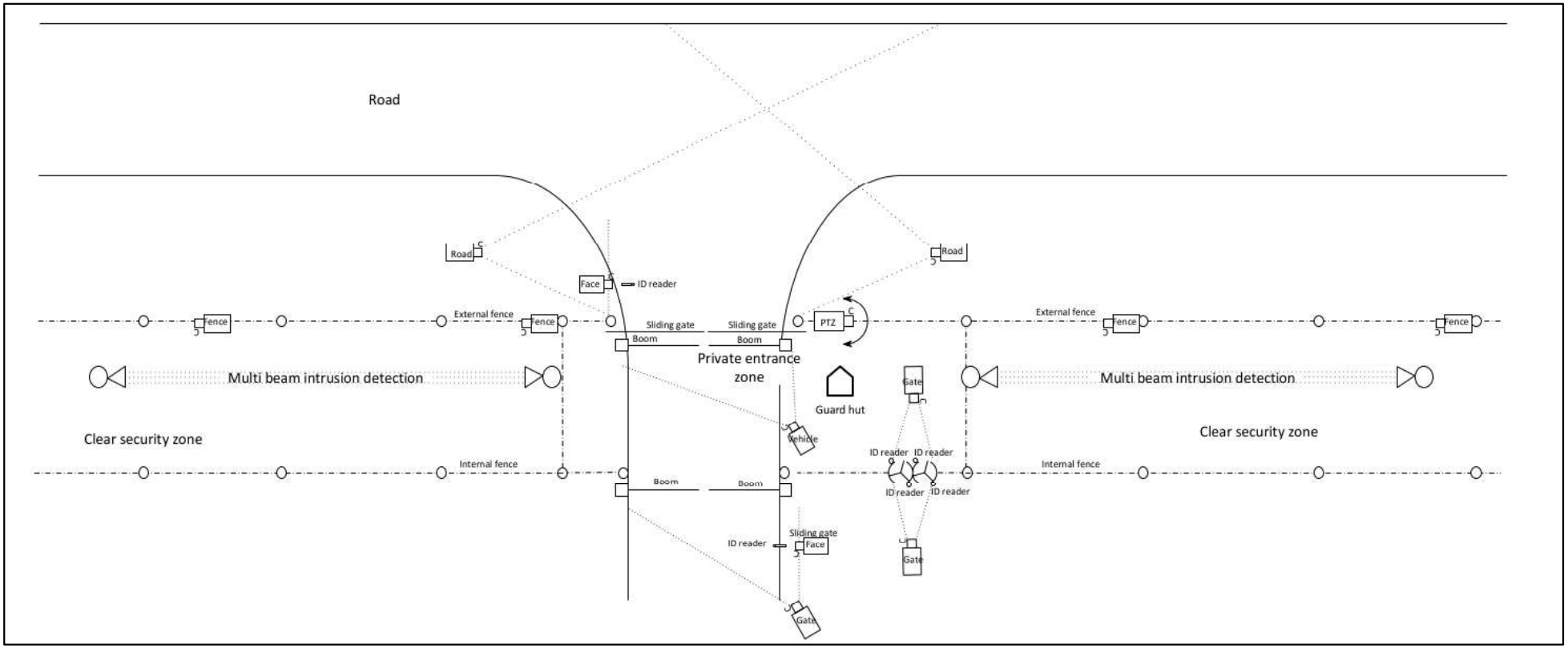


Figure 5: High Risk Category security entrance (the site specific layouts may not always resemble ideal layout perfectly, based on the dynamics of the site)

PS-TI 8 TECHNICAL SPECIFICATIONS

PS-TI 8.1 Installation

All equipment, cabling support, etc. shall be suitable and rated for the specific site conditions. Factors such as corrosion, lightning, soil conditions, temperature, winds, humidity, rain, etc. shall be considered.

Cables shall be installed in fully concealed piping. Junction boxes shall be avoided (if possible) but if visible, shall be tamper resistant. Optical fibre cabling shall be used for longer distances.

The equipment enclosures shall be tamper-resistant and mounted in a non-obvious location e.g. in a separate room area with limited access.

PS-TI 8.2 Testing, commissioning, and training

The contractor shall test, commission, and train the users of the systems. This shall typically include the following:

- Test all the equipment for correct installation and functionality and record the results of all tests on testing schedules.
- Commission the system and configure parameters according to the site requirements. Record all parameters and settings.
- Provide operating manuals and train the users, guards, and other relevant persons.

PS-TI 8.3 Repair and maintenance

It is important that all systems be kept in an optimal functioning condition for the duration of the project. All the systems shall be tested at least weekly and maintained in an optimal condition. This shall include repairs and replacement parts. The maximum downtime of any part of any system shall be 8 hours which means that the contractor shall allow for spare parts and emergency repair functions.

Temporary alternative security functionality shall be provided if it is inevitable that a downtime will be longer than 8 hours.

PS-TI 8.4 Cybersecurity

All systems shall follow best practice cybersecurity practices including the following:

- No system shall be linked to the Internet, cloud services, remote servers, other site networks, etc. Systems shall be isolated and only connect to networks via VLANs approved by the City of Cape Town. E.g. a VLAN link to the central control room.
- Default login credentials for all equipment such as cameras, controllers, recorders, switches, etc. shall be changed and shall be specific for the construction site i.e. login credentials shall not be shared between sites. Persons shall not share login credentials.
- Enforce best practice password management.
- Physically separate networks or use VLANs for cameras, alarm systems, access control, other networks, etc.
- Remote access to alarms, video, etc. shall have limited viewing-only functionality i.e. such remote access shall not be able to change any settings.
- Remote access shall be limited and managed and verified on regular basis to ensure that no unauthorised links exist. The credentials of persons that lose their authorisation, shall immediately be terminated.
- Firewalls shall be provided where systems link to other systems or networks.
- Ensure that physical access to equipment is limited and monitored.

PS-TI 8.5 Latest Technology

All equipment and systems shall use the latest technologies suitable for the applications.

Analytics and artificial intelligence (AI) based analytics are critical in video systems and shall be chosen according to the requirements of the applicable i.e. fence cameras shall be able to distinguish between humans, animals, and other movement. The best and most reliable and accurate algorithm based, and AI based analytics shall be chosen.

Only proven and reliable technologies shall be used.

The technology of the systems on the construction site shall allow the CCT Central Control Room to use advanced AI based analytics.

PS-TI 8.6 Cameras

Cameras shall be suitable for the application with the following minimum requirements:

- Minimum resolution: 4Mp
- True wide dynamic range (120dB or better). Digital WDR is not acceptable.
- PoE IP
- Full colour image down to 0.01lux without illuminator on.
- Perform as intended under all lighting and weather conditions.
- Tamper detection
- Cameras shall create metadata allowing further analysis. Cameras shall be mounted in such a way that tampering is difficult.

The main functions of cameras are listed below. Camera functions can be combined but the functionality should not be reduced.

Table 5: Camera Functions

	Gate camera	Vehicle camera	Fence camera	Face camera	Road camera	PTZ camera	Security enclosure camera
Purpose	Full view of a gate or door	Full view of a vehicle including number plate	View both sides of a fence	View the face of a driver	General view of along a road	General surveillance	View the security enclosure and surrounding areas
Audio input microphone				Yes			
Built-in illuminator	Infrared	Infrared	Infrared	White	Infrared	Infrared	Infrared
Analytics	Human & vehicle detection	ANPR & model detection	Human detection Intrusion detection Fence tampering detection	Face detection Enable future face recognition	Human detection Detect cycles, small and large vehicles. Loitering Crowding	Human & Vehicle detection	

The following table summarises typical camera requirements per entrance according to the assessed security risk of a site. The minimum number of cameras are indicated but the actual layout of the entrance may require more cameras.

Table 6: Typical camera requirements per entrance

	Low Risk	Medium Risk	High Risk
Vehicle gate cameras	One	One	One
Vehicle cameras		One	One
Pedestrian gate cameras	One per turnstile group	Two per turnstile group	Two per turnstile group
Fence cameras	None	None	Yes
Face cameras	One per vehicle ID reader	One per vehicle ID reader	One per vehicle ID reader
Road cameras	None	None	Two
PTZ cameras	None	One	Two

Security enclosure camera		One per enclosure	One per enclosure

PS-TI 8.7 Video Recording

A network video recorder (NVR) shall be provided with feature suitable to the types of cameras and equipment connected to it. Full video resolution and 30 fps shall be stored for at least 30 days. The Central Control Room (see PS-TI 8.16) shall have full access to the NVR allowing it real-time views, intelligent searching, analysis and copying of video and other data. The Central Control shall not have permissions to change settings or data.

PS-TI 8.8 Power supply

All the security equipment shall be powered by a lithium battery backed power supply capable of powering all the equipment and communications for more than six (6) hours. The charging system shall charge an empty battery to full in less than three (3) hours. The batteries shall be protected against low voltage and the charger shall automatically reset and charge a discharged battery i.e. no human intervention will be required.

Power to the battery backed power supply shall come from a municipal power supply or if not available, from solar and generator power supply system.

PS-TI 8.9 Access control

All vehicle barriers (booms) and pedestrian turnstiles shall be operated by an intelligent access control system containing a maintainable database of authorised persons. A visitor access control system shall also be provided allowing the enrolment of visitors to the site.

Each authorised person shall receive an ID card with his/ her face, name, number, and other relevant information printed on the ID card. All the information on the card shall also be stored in the access control database.

The access control database shall be linked to the Central Control which shall have permission to view, analyse and copy data but not change data or settings.

Authentication of persons shall be achieved by using non-contact ID cards for low and medium risk sites. High risk category sites shall, in addition to, non-contact ID cards, use non-contact biometric readers like contactless fingerprint scanners or face recognition. Non-contact cards may be used for access to areas inside the construction site.

PS-TI 8.10 Alarm systems

Alarm systems shall be provided as required and linked to the Central Control Room. At least the following alarms shall be provided:

- Opening of the equipment cabinet
- Fence alarm system
- Emergency (panic) alarm button for each guard
- Electric fence alarms
- Mains, solar or generator power failure
- Low battery capacity
- Power supply fault

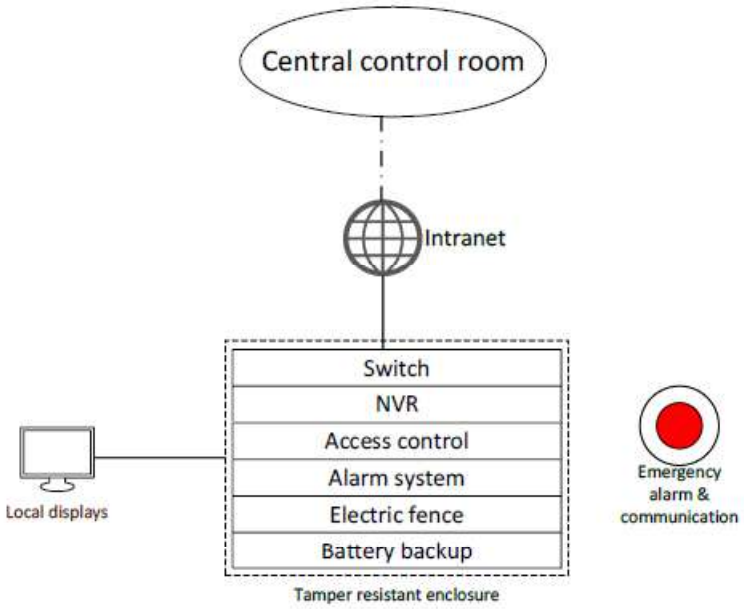
PS-TI 8.11 Equipment enclosure

All central security equipment shall be installed in a lockable, tamper resistant enclosure in the site office. The enclosure shall be monitored by a camera and the enclosure door shall have a door alarm that will alert the Central Control Room if the door of the enclosure is opened.

PS-TI 8.12 Network

All the security systems on the construction site shall be linked with the Central Control Room using the links provided by the CCT. The equipment must be able to establish a VPN link to the Central Control Room. An optical fibre link is preferred but other links such as 5g, radios or Wi-Fi may be provided depending on the location of the site.

The following diagram illustrates a typical security system:



PS-TI 8.13 Intrusion detection

Full perimeter intrusion detection consisting of the following shall be provided for high risk category sites:

- Fence cameras mounted so that intrusion or intrusion attempts can be detected. Each camera shall also see the next camera so that tampering can be detected.
- Multi infrared intrusion detection beams shall be installed between the inner and outer fences. The multi-beam barrier shall have at least eight beams. The fence cameras shall be able to view the intrusion beam detection areas so that the causes of alarms can be easily identified.
- The areas between the fences be kept clear of vegetation and other obstructions to allow good visibility and reliable alarm detection.

PS-TI 8.14 Security lighting

Suitable security lighting shall be provided to allow the cameras and guards to function optimally. Fence cameras may use their built-in illuminators to detect intrusion.

PS-TI 8.15 Electric fence

The energisers for electric fences shall be installed away from manned areas because they are noisy. Energisers shall be installed in tamper resistant enclosures with door alarms in a position that is visible by a camera.

Long fences shall be monitored in fence partitions or sectors of maximum 100m length.

Fence alarms and status shall be relayed to the Central Control Room (see PS-TI 8.17).

PS-TI 8.16 Emergency communication requirements

The emergency communication requirements to interface with the CCT Central Control Room shall be considered. This will describe the verbal communication and emergency alarm systems that will be required to link and communicate with the CCT Central Control Room.

This may include:

- Orbitrax provide tracking, panic and alarm devices
- Online Skype meeting on 2023-10-30
- GPS, voice communication (but start with only monitoring, not two-way), web based
- Voice is recorded
- Formats: Credit card, watch
- WhatsApp (or alternative communication) groups

PS-TI 8.17 Central Control Room functions

In an effort to create seamless safety and security related communication with the construction site, the CCT Central Control Room shall determine the services it will provide, how to link to the Central Control Room and the project site, what communication standards should be followed, etc.

The data generated on the construction site (e.g. video, alarms and other data) shall be managed by systems in the Central Control Room. Unless specified by the CCT, all equipment shall be compatible with Milestone v6. All video recorders, cameras and other related devices shall be supported by Milestone or equivalent approved.

Support shall include the following (as appropriate):

- Audio
- PTZ control
- Events
- I/O
- Multistreams
- Highest resolution of the device
- License plate recognition
- Facial recognition
- Camera settings

The manufacturer and models of equipment installed at the construction site shall be accepted by the CCT Central Control Room as compatible.

All the construction site security systems shall provide real time data (video, alarm, statuses, etc) to the Central Control Room. The Central Control Room shall record and analyse data and take appropriate action. The security personnel at the construction site shall be able to communicate with the Central Control Room to request support and to provide relevant information to the Central Control Room.

The functions of the Central Control Room include the following:

- Monitor alarms and video from the construction site.
- Initiate armed, technical, or other forms of response.
- View and analyse video but only when there are alarms.
- Keep record of events, video, etc.
- Reliable communication to the construction sites e.g., microwave, satellite, 5G or fibre.

The Central Control Room equipment systems must be able to communicate in real time with the construction site equipment and systems.

Each construction site may have cameras, number plate recognition, access control, perimeter protection, alarm systems, etc. as determined by the security risk assessment.

The diagram in Figure 8 illustrates the functions of the Central Control Room (where this Specification only addresses aspects on the left triangle which allows for sensors to gather data that could be fed to the CCT's Central Control Room for further analysis and interpretation).

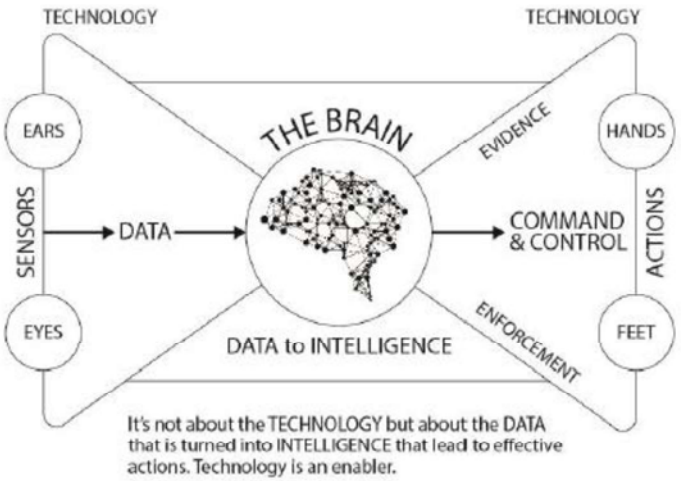


Figure 6: The interfacing functions of the CCT Central Control Room

ACCOMMODATION OF TRAFFIC SPECIFICATIONS

This part of the Works Specifications contains specifications for Accommodation of Traffic not covered by the Standard Specifications.

The number of each clause and each payment item in this part of the Works Specification is prefixed with an E to differentiate these clauses and items.

The following specifications are covered under this part of the Works Specifications:

AMENDMENTS TO SECTION 1500: ACCOMMODATION OF TRAFFIC

SECTION E1500 : ACCOMMODATION OF TRAFFIC

E 1502 GENERAL REQUIREMENTS

(a) Safety

The following shall be added to Clause 1502(a) of the Specifications:

All construction workers shall wear high visibility safety clothing when working alongside public traffic. The safety jackets shall be of an approved Level 2 type, bright/fluorescent orange, red-orange or yellow in colour with retro-reflective strips as indicated in Chapter 13 of Volume 2 of the South African Road Traffic Signs Manual (SARTSM). When work is carried out between the hours of sunset and sunrise, the Level 2 safety jackets shall be replaced by level 3 jackets.

(i) Traffic safety officer

Add the following to sub-subclause (iii):

Should a Traffic Safety Officer be required for the "Works Project", the officer shall patrol and inspect the reference and location of each temporary traffic-control facility on the whole site of works twice each day, to record all irregularities discovered and the remedial action taken, and to sign off as correct for submission to the Employer's Agent on the date / reference / location record sheets. The traffic safety officer shall keep a duplicate book for this specific purpose.
The traffic safety officer shall submit to the Employer's Agent by 10h00 each morning, a record of all matters pertinent to site safety and traffic accommodation throughout the site of works the previous day. He shall also record the daily labour returns of flagmen, stop/go and traffic signal control staff employed.

Add the following:

The Contractor shall provide the traffic safety officer with the necessary resources, inter alia a light delivery vehicle (LDV), a cellular telephone, warning signs and rotating amber flashing warning lights and at least two (2) personnel. The LDV shall be equipped with high visibility front and rear panels. The legend CONTRACTOR'S TRAFFIC CONTROL in visible fluorescent and/or retro-reflective materials of letter height of at least 175 mm shall be displayed prominently on front and rear sign panels on the LDV. The LDV shall be equipped with a rotating amber flashing warning light with a minimum intensity of 100W. The warning light shall be switched on at all times and the front and rear sign panels shall be displayed when the LDV is used on the site. The traffic safety officer, his vehicle, equipment and personnel shall also be available 24 hours per day on all non-working days/hours.

During non-working days or periods, the Contractor's traffic safety officer will be required to patrol and ensure that all temporary traffic-control facilities are in place and functional. The accommodation of traffic team will be required to be on standby.

The provision for the traffic safety officer, his vehicle, equipment, the cost of his cellular telephone and personnel resources shall be deemed to be included in the rate tendered for Item E15.15.

Add the following new subclauses to Clause 1502:

(j) Traffic diversions

Add the following:

The Contractor's attention is drawn to the heavy volume and speed of traffic carried on the affected roads and shall make due allowance therefor in his construction programme.

Traffic accommodation shall be carried out in strict accordance with the requirements of the South African Road Traffic Signs Manual (SARTSM) – Volume 2 – Chapter 13: Roadworks Signing (June

1999). The method of accommodating traffic shall be in accordance with the layouts of the traffic-control facilities for the traffic diversions on the respective roads as shown in the South African Road Traffic Signs Manual (SARTSM) - Volume 2 Chapter 13, on the drawings or as directed by the Employer's Agent.

The Contractor shall submit a drawing showing details concerning each traffic diversion to the Employer's Agent for approval at least 7 days prior to the scheduled commissioning of such diversions to allow him sufficient time to inform and obtain the approval of the traffic officials of the relevant authorities concerned for such diversions.

(k) Parking of construction vehicles and plant

Where there is no working space off the road, construction vehicles may be parked on the shoulder only during working hours in which case flagmen and traffic cones shall be utilised to warn public traffic of the hazard. During non-working hours all obstructions to traffic shall be removed from the road.

The parking of construction plant within the road reserve outside working hours will be permitted. The minimum clearance between the parked vehicles / plant and the edge of any carriageway shoulder shall be 5 metres.

(l) Staging of construction

The work in this Contract may necessitate traffic having to be deviated onto a reduced -width carriageway and chanellised into traffic lanes routed past / through the construction work areas.

Traffic shall be accommodated on the existing surfaced carriageway and shoulders. Temporary deviations are required at certain on-ramps under this contract. Accommodation of traffic will generally be carried out by closing off one lane of traffic at a time and accommodating the traffic on the other lane(s), or in the case of the two-lane carriageway sections, partly onto the temporary-surfaced shoulder.

Temporary closure or occupation of traffic lanes will only be permitted as specified and the Contractor shall ensure that all traffic control facilities no longer applicable to the situation are removed or effectively covered.

Amber flashing warning lights shall be placed on traffic lane deviations at night and when instructed by the Employer's Agent to warn motorists of lane closures and occupation of lanes for work operation areas.

It is a condition of this contract that the Contractor shall programme and arrange for adequate accommodation of traffic within the following operational limitations:

(i) Individual work areas shall be clearly demarcated with traffic signs and delineators / cones as specified. No individual working area shall exceed 1 000 metres in length.

(ii) Only one lane per carriageway may be closed to traffic at a time. A lane may be closed to traffic on two-lane carriageway sections with permission of the Employer's Agent. All lanes must be open to traffic at the following times:

- AM Peak: Monday to Friday inclusive: 06:00 to 09:00.
- PM Peak: Monday to Friday inclusive: 16:00 to 18:30.

There are no lane closure time restrictions over weekends.

(iii) Closure of a single traffic lane or partial lane will only be permitted during non-peak time periods. A minimum trafficable width of 2 x 3,0 m lanes on 2 and 3 traffic lane carriageways and 1 x 3,2 m on the ramps shall be maintained.

(iv) Crossing of the median of dual carriageway roads by Contractor's plant or vehicles shall not be permitted.

(v) Signage which does not apply during construction shall be removed or effectively covered.

(vi) Signage erected for traffic accommodation purposes which is not applicable (e.g. speed limits at weekends etc) shall be effectively covered.

(vii) Signs traffic accommodation devices for closures shall always be placed furthest away from the work area first and then by working inwards in the direction of traffic.

(viii) On completion of the work remove delineators/cones/signs by starting at the work area and work outwards against the flow of traffic.

(ix) Before re-opening a lane to traffic after milling/surfacing operations, temporary road marking as specified shall be applied.

Any costs related to these construction limitations and restrictions will be deemed to be covered in scheduled rates.

Whenever possible, the Contractor shall ensure that the full road width or carriageway shall be open at night and all signs no longer applicable to the situation removed or effectively covered. If the road or carriageway is not in a safe trafficable condition over the full width at the end of each day's work, the Contractor shall provide adequate flagmen, signs, barriers, lights and necessary personnel / staff to ensure a reasonable free flow of traffic on the specified traffic lanes throughout the night and the whole period that the roadway is open to traffic.

(m) Failure to Comply with the Provisions for the Accommodation of Traffic

Failure or refusal on the part of the Contractor to take the necessary steps to ensure the safety and convenience of the public traffic, accommodation of traffic, plant and personnel in accordance with these specifications or as required by statutory authorities or ordered by the Employer's Agent, shall be sufficient cause for the Employer's Agent to deduct penalties as follows:

A fixed penalty of R500,00 per occurrence shall be deducted for each and every occurrence of non-compliance with any of the requirements of Section 1500 of C3.4 Construction: Accommodation of Traffic Specifications.

In addition a time-related penalty of R500,00 per day or part thereof over and above the fixed penalty shall be deducted for non-compliance to rectify any defects in the accommodation of traffic within the allowable time after an instruction to this effect has been given by the Employer's Agent. The Employer's Agent's instruction shall state the allowable time, which shall be the time in hours for reinstatement of the defects. Should the Contractor fail to adhere to this instruction, the time-related penalty shall be applied from the time the instruction was given.

The failure of or refusal by the Contractor to construct and/or maintain diversions, barricades, traffic signs or road markings at the proper time, or to take the necessary precautions for the safety and convenience of public traffic as specified or instructed by the Employer's Agent, shall be sufficient cause to suspend the Works until the required construction or maintenance has been completed to the satisfaction of the Employer's Agent.

E 1503 TEMPORARY TRAFFIC CONTROL FACILITIES

Add the following:

The layouts expected to be most commonly used in the contract are shown on the drawings of the South African Road Traffic Signs Manual (SARTSM) Volume 2 Chapter 13: Roadworks Signing (June 1999).The details shown for spacing and placement of traffic-control facilities may however, be revised at the discretion of the Employer's Agent where deemed necessary to accommodate local site geometry and traffic conditions.

(a) Traffic-control devices

The following shall be added to Clause 1503(a) of the Specifications:

Flagmen shall be provided at all access and exit points to the working areas alongside public traffic. Flagmen equipped with high visibility safety jackets, red flags, STOP/GO-RY signs and two-way radios shall be stationed at each end of the road section to ensure an orderly flow of traffic past the work area. All signals must be clear and the flagmen shall be intelligent and responsible personnel. In areas of high traffic density, the assistance of the relevant traffic authorities officials shall be solicited.

(b) Road signs and barricades

Add the following:

All temporary barricades and delineators shall be mounted on portable supports to facilitate their moving. Only sandbags will be permitted for the ballasting of the supports. The sandbags shall consist of durable material and have adequate mass to prevent signs from being blown over by the wind. Sandbags shall be placed as ballast on the supports in front of and behind the sign so as not to obstruct the traffic path past the sign. The cost of the sandbags shall be included in the tendered rates for the various types of temporary road signs.

All temporary road traffic signs shall, where possible, be mounted on poles planted outside the surfaced shoulders.

(c) Channelisation devices and barricades

Add the following:

Traffic channelisation shall be carried out by means of plastic type delineators (Sign TW401 / TW402) in accordance with SANS 1555. The sign face shall be 200 mm x 800 mm in size and shall be mounted on suitable non-metal bases. Each base shall be suitably ballasted with sandbags.

Traffic cones manufactured in a fluorescent red-orange or red plastic material may be used only for roadmarking operations and other short-term lane deviations during daylight. Cones used on deviations shall be 750 mm high on the freeways and 450 mm high on other roads with suitable heavy bases to prevent the cones from being blown over by wind or turbulence from moving traffic.

Lane closures or traffic diversions that continue into nighttime shall be demarcated by delineators.

Traffic cones and delineators shall be placed at maximum intervals of 10 m on tapers and 20 m on straights unless otherwise authorised by the Employer's Agent.

(e) Warning devices

Add the following after the first paragraph:

At night and when directed by the Employer's Agent, amber flashing warning lights shall be placed at strategic places such as barricades, obstructions, etc. The warning lights shall be "Vama SA" amber flashing lights or an equivalent approved type.

All vehicles and items of mobile plant working on the Site shall be supplied with warning boards and rotating amber flashing lights of robust construction as described in Section 3.1.4 of Part 3 of the South African Road Traffic Signs Manual. The amber lens shall have a minimum height of 200 mm and the beacons shall be of the revolving parabolic reflector mountable type for all construction vehicles and clearly visible to approaching traffic from all directions.

The Contractor shall supply and maintain similar rotating amber flashing lights with a magnetic base, flexible cable and connection suitable for insertion into a standard 12V automobile cigarette lighter socket for the Employer's Agent and his staff.

Rotating amber flashing lights on the Contractor's plant and vehicles shall not be paid for separately but shall be included in the rates covering the use of such plant and vehicles.

The provision and maintenance of rotating amber flashing lights for the use of the Employer's Agent and his staff shall be paid under Item E15.14.

Add the following new subclauses:

(h) Maintenance

All temporary traffic control facilities shall be kept clean and maintained in good order at all times.
If the coefficient of retro-reflection of any of the Contractor's signs falls below 80% of the value given in Table 1 of CKS 191 - 1987 (observation angle 0,33 , entrance angle 5,0) for the grade and colour of the material used, the sign shall be considered defective and shall either be rectified or removed and replaced.

(i) Sufficiency

The Contractor shall determine from his proposed programme, the number of sets of temporary signposts required and shall not commence erecting the signs before all the signs have been delivered to the site.

The Contractor shall replace damaged or missing items within a period of two (2) hours of the deficiency being discovered.

The Contractor shall allow for the replacement of at least five (5) percent of the traffic-control facilities scheduled in his tendered rates. If the tenderer envisages a greater or lesser percentage replacement, this must be stated in his covering letter and a revised schedule of barricades, signs and delineators shall be submitted as an alternative tender with his tender. This percentage replacement is only for traffic-control facilities damaged by the public traffic and/or if their ineffectual performance is beyond the Contractor's control and not the result of his actions or omissions.

E1505 TEMPORARY DRAINAGE WORKS

Add the following:

Within any individual working area, the Contractor shall make adequate provision for drainage where water can pond or be contained against a difference in depth of roadway. No separate payment will be made for the provision and use of standby pumps and dewatering equipment or cutting of drainage slot and/or channels to effectively drain the roadway surface."

The Employer's Agent may instruct the Contractor to carry out additional drainage work in the interest of safety of the travelling public. The Contractor shall make due allowance for all such drainage in the tendered rates.

3.4.4 WAYLEAVES, PERMISSIONS AND PERMITS

The Contractor shall be responsible for obtaining all of the necessary wayleaves, permissions or permits applicable to working near any existing services or other infrastructure on Site, and shall ensure that any wayleaves, permissions or permits obtained by the Employer's Agent prior to the award of the contract are transferred into the Contractor's name.

The Contractor shall abide by any conditions imposed by such wayleaves, permissions or permits.

The Contractor shall ensure that all wayleaves, permissions and permits are kept on site and are available for inspection by the relevant service authorities on demand.

The Contractor shall also ensure that any wayleaves in respect of electricity services are renewed timeously every three months.

3.4.5 LOCAL PRODUCTION AND CONTENT

The Contractor will be required to comply with all requirements as stated in this document.

3.4.6 EMPLOYMENT OF SECURITY PERSONNEL

All security staff employed by the contractor on behalf of the CCT or at any CCT property must be registered with Private Security Industry Regulatory Authority (PSiRA). Proof of such registration must be made available to the employer's agent upon request.

3.4.7 UNIVERSAL ACCESS

In pursuit of becoming a fully accessible city, the City of Cape Town expects all Consultants and Service Providers to design and construct to SANS Standards for accessible Design, and any relevant City of Cape Town documents as may be relevant, and to exhibit a commitment to employing Universal Design Principles in their design, construction, service and product delivery of construction projects. This applies to all projects whether new, temporary, upgrades or rehabilitation works.

The contractor will engage with project representatives and the CCT's Universal Accessibility Department on how Universal Design Principles will enhance accessibility, within this project, that meets a variety of needs and creates a city that is accessible to everyone.

C3.5 Management

CONTENTS

3.5.1. FORMS FOR CONTRACT ADMINISTRATION
3.5.2 PARTICIPATION OF TARGETED LABOUR
3.5.3. COMMUNITY LIAISON OFFICER
3.5.4. PARTICIPATION OF TARGETED ENTERPRISES
3.5.5. ENVIRONMENTAL MANAGEMENT PROGRAMME
3.5.6. HEALTH AND SAFETY

3.5.1 FORMS FOR CONTRACT ADMINISTRATION

The Contractor shall complete, sign and submit with each monthly statement for payment in respect of each Works Project contract, the following updated returns (the format of which are attached in C3.6 Annexes):

a) Monthly Project Labour Report (Annex 1)
b) B-BBEE Sub-Contract Expenditure Report (Annex 2)
c) Joint Venture Expenditure Report (Annex 3)
d) Targeted Labour Contract Participation Expenditure Report (Annex 4)
e) Targeted Enterprises Contract Participation Expenditure Report (Annex 5)

The Monthly Project Labour Report must include details of all labour (including that of sub-contractors) that are South African citizens earning less than R500.00 per day, as adjusted from time to time (excluding any benefits), who are employed on a temporary or contract basis on this contract in the month in question.

In addition to the Monthly Project Labour Report the Contractor shall simultaneously furnish the Employer's Agent with copies of the signed employment contracts entered into with such labour, together with certified copies of identification documents, proof of attendance in the form of attendance register or timesheets, as well as evidence of payments to such labour in the form of copies of payslips or payroll runs. If the worker is paid in cash or by cheque, this information must be recorded on the envelope and the worker must acknowledge receipt of payment by signing for it and proof of such acknowledgement shall be furnished to the Employer's Agent.

The Monthly Project Labour Reports shall be completed and submitted in accordance with the instructions therein and copies of all submitted documents must be kept on site be made available to the employer's agent upon request.

The **B-BBEE Sub-Contract Expenditure Report** is required for monitoring the prime contactor's compliance with the sub-contracting conditions of the **Preference Schedule**.

The Targeted Labour Contract Participation Expenditure Report is required for monitoring the contractor's compliance for achieving the specified minimum targeted labour contract participation goal (CPG_L) and, if applicable, for calculating any penalty in terms thereof.

The Targeted Enterprises Contract Participation Expenditure Report (if applicable) is required for monitoring the contractor's compliance for achieving the specified minimum targeted enterprises contract participation goal (CPG_E) and, if applicable, for calculating any penalty in terms thereof.

The Expenditure Reports shall be verified by the Employer's Agent/Employer's Agent's Representative.

In respect of Annexes 2 and 3, the Employer shall, in addition to any other sanctions available to it, apply the financial penalties applicable to breach of preferencing conditions in the **Preference Schedule** in Part T2.2 Returnable Schedules.

3.5.2 PARTICIPATION OF TARGETED LABOUR

3.5.2.1 Minimum targeted labour contract participation goal

In support of the National Department of Public Works' Expanded Public Works Programme which is aimed at alleviating poverty through the creation of temporary employment opportunities using labour intensive methodologies and practices where possible, the Employer is seeking to increase the intensity of labour, as appropriate, in all of its infrastructure sector projects.

It is a requirement of this term tender contract, therefore, that the work be executed in such a manner so as to maximise the use of labour intensive construction methods in order to provide low and semi-skilled temporary employment opportunities.

To this end, a minimum targeted labour contract participation goal is specified below, which shall be achieved by the Contractor in the performance of each Works Project contract, failing which, penalties as described will be applied. The Contractor is required to provide all skills training where necessary, so as to ensure that a minimum level of competence is achieved and maintained, such that the various activities are carried out safely and to the required standard. The cost of training shall be included in the rates for the various work activities.

The specified minimum targeted labour contract participation goal (CPG_L) is | **0,1 %**

The minimum CPG_L is such that the Contractor will have to carry out some of the work that would normally have been undertaken using mechanised construction methods, by using labour intensive construction methods instead. It is left to the discretion of the Contractor to identify suitable work activities for the intensification of labour. The Contractor shall, within 5 working days of being requested in writing by the Employer's Agent to do so, submit details of his/her plan to achieve the minimum CPG_L in the Works Project. If, due to the selection of items and quantities in any individual Works Project, it is not possible for the Contractor to achieve the specified minimum CPG_L on that particular Works Project, then the Employer's Agent, at his/her sole discretion, may reduce such minimum CPG_L upon motivation by the Contractor.

3.5.2.2 Definitions

For the purposes of the requirements in respect of the participation of targeted labour, the following definitions shall apply:

"**Target area**" means the geographical area described in the Works Project contract document.

"**Targeted labour contract participation goal (CPG_L)"** means the sum of the wages (excluding any benefits), for which the Contractor, or any of his/her sub-contractors contracts targeted labour in the performance of the contract, expressed as a percentage of the value of the contract.

"**Targeted labour**" means low and semi-skilled individuals, whose wages (excluding any benefits) do not exceed the threshold value, who reside in the target area, that are employed by the Contractor, or any of his/her sub-contractors, in the performance of the contract.

"**Threshold value**" is R450.00 per day as adjusted from time to time (excluding any benefits). The threshold value is not to be confused with any industry sector minimum wage determined in accordance with the Basic Conditions of Employment Act, 75 of 1977.

"**Value of the contract**" means the **Works Project** contract sum (accepted contract amount) less provisional sums, contingencies and VAT.

3.5.2.3 The selection and recruitment of targeted labour

Where targeted labour is to be drawn from specific local communities (defined in terms of the target area), such labour shall be identified using the relevant Sub-Council Job-Seekers Database. The Contractor shall request, via a Community Liaison Officer (if required in terms of the contract), a list of suitable candidates from the database, from which the Contractor shall make his/her final selection. The contractor shall enter into written contracts of temporary employment with all targeted labour.

Any difficulty experienced by the Contractor in identifying candidates though the Job-Seekers Database, or as regards any matter relating to the employment of targeted labour, shall be immediately referred to the Employer's Agent.

3.5.2.4 Contract participation goal credits

Credits towards the achieving the minimum CPG_L shall be granted by converting the total monetary value of wages paid to targeted labour (including that of sub-contractors) to a percentage of the value of the contract. No credits shall be accorded should the contractor/sub-contractor fail to enter into written

contracts with the targeted labour. Furthermore, no credits shall be accorded in respect of targeted labour employed on work in respect of provisional sums or prime cost items. Such labour shall nevertheless be recorded on the Monthly Project Labour Report which is required to be furnished by the Contractor.

3.5.2.5 Training of targeted labour

The Contractor is required to provide all informal (on-the-job) skills training so as to ensure that a minimum level of competence is achieved and maintained, such that the various activities are carried out safely and to the required standard. The cost of informal training shall be included in the rates for the various work activities.

3.5.2.6 Penalties

The financial penalty to be applied for failing to meet the specified minimum targeted labour contract participation goal in the performance of the contract (unless proven to be beyond the control of the Contractor), is as follows:

$$\text{Penalty} = (CPG_L{}^S - CPG_L{}^A) \times P^*$$

Where $CPG_L{}^S$ = the specified minimum targeted labour contract participation goal (expressed as a percentage).

$CPG_L{}^A$ = the targeted labour contract participation goal achieved (expressed as a percentage).

P^* = the value of the contract.

3.5.3 COMMUNITY LIAISON OFFICER

Certain Works Projects may require a Community Liaison Officer (CLO) to be appointed by the Contractor. The primary functions of the CLO shall be to assist the Contractor with the selection and recruitment of targeted labour, to represent the local community in matters concerning the use of targeted labour (and/or enterprises) on the works, and to assist with and facilitate communication between the Contractor, the Employer's Agent and the local communities.

The identification of suitable candidates (maximum 5; minimum 3) for the CLO position shall be resolved by the relevant Sub-council Manager through a process of advertising and shortlisting. Should suitable candidates not be identified through this process, the Contractor shall be allowed to seek candidates from the relevant Sub-Council Job-Seekers Database. The final selection and appointment of the CLO in terms of the contract shall be the responsibility of the Contractor.

The period of appointment of the CLO shall be as stated in the Contract for Temporary Employment as a Community Liaison Officer referred to below. The date of commencement of temporary employment of the CLO shall be as agreed with the Employer's Agent.

If it is required, therefore, that the Contractor enter into a contract of temporary employment with the selected CLO, the contracting parties will be the Contractor and the CLO. To this end, a specimen Form of Contract of Temporary Employment as Community Liaison Officer is included in this document (Part C1.9 Community Liaison Officer). This Form of Contract sets out, inter alia, the agreement between the parties, the duties and conditions of employment of the CLO. The rate of remuneration for the CLO, payable by the Contractor, is currently **R460.00** per day). As said contract will be between the Contractor and the CLO, all costs involved shall be borne by the Contractor and items will be provided in the Bills of Quantities in the Works Project contract document therefor.

3.5.4. PARTICIPATION OF TARGETED ENTERPRISES

3.5.4.1 Minimum targeted enterprises contract participation goal

It is a requirement of this contract that enterprises located within the target area, as defined, be engaged by the Contractor for the provision of supplies, services or works necessary for the performance of this contract.

To this end, a minimum targeted enterprises contract participation goal is specified below, which shall be achieved by the Contractor in the performance of the contract, failing which, penalties as described will be applied.

The specified minimum targeted enterprises contract participation goal (CPG_E) is | **0 %**

The Contractor shall engage targeted enterprises directly or indirectly in the performance of the contract to the extent that the total monetary value of such engagements (exclusive of VAT), expressed as a percentage of the value of the contract, is sufficient to achieve the specified minimum CPG_E.

3.5.4.2 Definitions

For the purposes of the requirements in respect of the participation of targeted enterprises, the following definitions shall apply:

"Target area" means the geographical area described in the Works Project contract document.

"Targeted enterprises contract participation goal (CPG_E)" means the value of supplies, services or works (exclusive of VAT), for which the Contractor contracts targeted enterprises, either directly or indirectly, in the performance of the contract, expressed as a percentage of the value of the contract.

"Targeted enterprises" means any sole trader, partnership or legal entity that acts as a supplier, manufacturer, service provider or sub-contractor, and which has its base of operations in the target area.

"Value of the contract" means the contract sum (accepted contract amount) less provisional sums, contingencies and VAT.

3.5.4.3 Achieving the contract participation goal

The contractor may achieve the specified minimum CPG_E as follows:

a) by engaging one or more targeted enterprises to perform commercially useful functions in the performance of the contract;

b) by engaging non-targeted enterprises, who in turn engage one or more targeted enterprises to perform commercially useful functions in the performance of the contract;

c) by a combination of the above.

The Contractor shall, within 5 working days of being requested by the Employer's Agent to do so, submit details of his/her plan to achieve the minimum CPG_E.

3.5.4.4 Contract participation goal credits

Credits towards achieving the minimum CPG_E shall be granted by converting the total monetary value (exclusive of VAT) of the agreements between the Contractor, or Contractor's sub-contractors, and targeted enterprises, to a percentage of the value of the contract.

No credits shall be accorded should the Contractor (or sub-contractors):

a) make direct payment to third parties in connection with the contract on behalf of targeted enterprises, when such payment is recovered by making deductions from payments due to the targeted enterprise;

b) fail to enter into written contractual agreements with the relevant targeted enterprises.

Credits claimed towards the contract participation goal shall be denied where such written contractual agreements contain any of the following:

c) conditions which are more onerous than those that exist in the prime contract (this contract);

d) payment procedures based on a pay when paid system;

e) authoritarian rights given to the employing contractor, with no recourse to independent adjudication in the event of a dispute arising.

No credits may be claimed in respect of targeted enterprises that that do not adhere to statutory labour practices.

No credits shall be accorded in respect of targeted enterprises engaged on work in respect of provisional sums or prime cost items.

In the event that a targeted enterprise sub-contracts to another targeted enterprise, only the value of the higher level sub-contract shall be granted as credit towards achieving the specified minimum CPG_E.

In addition to the form required for contract administration (the Targeted Enterprises Contract Participation Expenditure Report), the Contractor shall furnish the Employer's Agent, upon written request, with

documentary evidence that the targeted enterprises have their base of operations in the target area, copies of the contractual agreements with the various targeted enterprises, as well as documentary proof of payments made to the various targeted enterprises.

3.5.4.5 Penalties

The financial penalty to be applied for failing to meet the specified minimum targeted enterprises contract participation goal in the performance of the contract (unless proven to be beyond the control of the Contractor), is as follows:

$$\text{Penalty} = (CPG_E^S - CPG_E^A) \times P^*$$

Where CPG_E^S = the specified minimum targeted enterprises contract participation goal (expressed as a percentage).

CPG_E^A = the targeted enterprises contract participation goal achieved (expressed as a percentage).

P^* = the value of the contract.

3.5.5 ENVIRONMENTAL MANAGEMENT PROGRAMME

Particular Specification E: Environmental Management Specification and its Annexures are attached hereto.

3.5.6 HEALTH AND SAFETY

Particular Specification H: Health and Safety Specification is attached hereto.

E: ENVIRONMENTAL MANAGEMENT SPECIFICATION

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E: ENVIRONMENTAL MANAGEMENT SPECIFICATION

For use with the General Conditions of Contract for Construction Works, Third Edition, 2015.

E1 SCOPE

The Environmental Management Programme (EMP) for the project is comprised of this Environmental Management (EM) Specification and its Annexures, including the "Additional environmental issues deemed to form part of the Environmental Management Specification" attached as Annexure D hereto, which together cover the requirements for controlling the impact on the environment of construction activities.

E2 INTERPRETATIONS

E2.1 Supporting specifications

The following standardised specification shall, *inter alia*, apply to this Contract:

a) SANS 1200A, as may be varied or added to in the Scope of Work

E2.2 Application

This EM Specification contains clauses that are generally applicable to the undertaking of construction works in areas where it is necessary to impose pro-active controls on the extent to which the construction activities impact on the environment.

In the event of any difference or discrepancy between the provisions of the Standardised Specifications and the provisions of the EM Specification, the latter shall prevail.

E2.3 Definitions and abbreviations

For the purposes of this EM Specification the following definitions and abbreviations shall apply:

E2.3.1 Environment

The surroundings within which humans exist and that are made up of -

a) the land, water and atmosphere of the earth;
b) micro-organisms, plant and animal life;
c) any part or combination of i) and ii) and the interrelationships among and between them; and
d) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.

Potentially hazardous substance

A substance which, in the reasonable opinion of the Employer's Agent, can have a deleterious effect on the environment.

E2.3.2 Method Statement

A written submission by the Contractor to the Employer's Agent in response to the EM Specification or a request by the Employer's Agent, setting out the plant, materials, labour and method the Contractor proposes using to carry out an activity, in such detail that the Employer's Agent is enabled to assess whether the Contractor's proposal is in accordance with the Scope of Work and/or will produce results in accordance with the EM Specification.

E2.3.3 Reasonable

Unless the context indicates otherwise, means reasonable in the opinion of the Employer's Agent after he has consulted with a person suitably experienced in "environmental implementation plans" and "environmental management plans" (both as defined in the National Environmental Management Act, 107 of 1998).

E2.3.4 Solid waste

All solid waste, including construction debris, chemical waste, excess cement/ concrete, wrapping

materials, timber, tins and cans, drums, wire, nails, domestic waste, dead vegetation, asphalt products, etc.

E2.3.5 Contaminated water

Water contaminated by the Contractor's activities containing cements, concrete, lime, paint products, thinners, turpentine, chemicals, fuels, oils washing detergents, etc.

E2.3.6 Working area

Any area within the boundaries of the Site where construction is taking place.

E2.3.7 Contractor's camp or construction camp

The area designated for all temporary site offices, storage areas, construction plant parking areas, staff welfare facilities, etc.

E2.3.8 Employer's Agent

The person/firm so named in the Contract Data, whose function is to administer the Contract as agent of the Employer.

E2.3.9 Employer's Agent's Representative (ER)

The natural person appointed by the Employer's Agent in terms of the Contract, who shall observe the execution of the Works, examine and test materials and workmanship, and deliver and receive communications to/from the Contractor.

E2.3.10 Environmental Officer (EO)

Appointed by the Employer's Agent as his environmental representative on Site, with the mandate to enforce compliance with the EMP. The duties of the EO are stipulated in the City's guideline document for the EO and ER.

E2.3.11 Environmental Control Officer (ECO)

An independent appointment to objectively monitor implementation of relevant environmental legislation, conditions of Environmental Authorisations (EAs), and the EMP for the project.

E2.3.12 Environmental Site Officer (ESO)

Employed by the Contractor as his environmental representative to monitor, review and verify compliance with the EMP by the Contractor. The ESO must ensure that he is involved at all phases of the construction (from site clearance to rehabilitation).

E2.3.13 Abbreviations

The following abbreviations occur in this EM Specification:

EMP - Environmental Management Programme
EM Specification – Environmental Management Specification
EO - Environmental Officer
ECO – Environmental Control Officer
ESO – Environmental Site Officer
ER – Employer's Agent's Representative
MSDS - Material Safety Data Sheets

E2.4 Employer's Agent's authority to delegate

In terms of Clause 3.2.4 of the General Conditions of Contract, Third Edition, 2015 (GCC 2015), the Employer's Agent has the authority to appoint a representative. Other than the Employer's Agent's Representative (ER) in terms of Clause 3.2, this can be in the form of an Environmental Officer (EO), who shall be responsible for monitoring compliance with the EMP. All instructions given by the EO shall go through the ER, who will then convey these to the Contractor, except in the case of an environmental emergency, in which case the EO can issue an instruction directly to the Contractor. An environmental emergency is one which, in the opinion of the EO, would cause serious environmental harm if not addressed immediately.

Depending on the nature/environmental sensitivity of the Contract the following variations in the organisational structure are possible:

a) The ER may work together with an EO; or
b) There may be an ER only (for construction projects with low potential for causing significant environmental impacts). In this case the ER has responsibility for the EO's functions.
c) There may be an independently appointed Environmental Control Officer (ECO) who will fulfil essentially the same functions as the EO. The ECO may work with just the ER (if there is no EO) or may work with both the ER and EO.

The term "Employer's Agent" in this EM Specification refers to the Employer's Agent as defined in Clause E2.3.9 acting through the ER/EO/ECO as delegated.

E3 MATERIALS

E3.1 Materials handling, use and storage

The Contractor shall ensure that any delivery drivers are informed of all procedures and restrictions (including "no go" areas) required to comply with the EM Specification. The Contractor shall ensure that these delivery drivers are supervised during off loading by someone with an adequate understanding of the requirements of the EM Specification.

Materials shall be appropriately secured to ensure safe passage between destinations. Loads, including but not limited to, sand, stone chip, fine vegetation, refuse, paper and cement, shall have appropriate cover to prevent them spilling from the vehicle during transit. The Contractor shall be responsible for any clean-up resulting from the failure by his employees or suppliers to properly secure transported materials.

All manufactured and or imported materials shall, where reasonably possible, be stored within the Contractor's camp and, if so required by the Employer's Agent, out of the rain. The location and method of protection of such materials stored outside of the Contractor's camp and the method of rehabilitation of these areas, shall be subject to the Employer's Agent's approval.

Stockpile areas shall be approved by the Employer's Agent before any stockpiling commences.

E4 Hazardous substances

Hazardous chemical substances (as defined in the Regulations for Hazardous Chemical Substances in GN 1179 (25 August 1995)) stored on Site for use during construction shall be stored in secondary containers which are clearly and appropriately marked/signed. The relevant Material Safety Data Sheets (MSDS) shall be available on Site. Procedures detailed in the MSDSes shall be followed in the event of an emergency situation.

If potentially hazardous substances are to be stored on Site, the Contractor shall inform the Employer's Agent of such substances and provide a Method Statement detailing the substances/ materials to be used, together with the storage, handling and disposal procedures of the materials. Hazardous substances shall be stored out of flood risk areas and disposal of these substances shall be at a licensed waste disposal facility. **PLANT (referring to "Construction Equipment" as defined in GCC 2015, and the Contractor's facilities as used in SANS 1200A)**

E4.1 Fuel (petrol and diesel) and oil

E4.1.1 Storage

If fuel and oil is to be stored on Site, then the Contractor shall submit a Method Statement covering the procedures for dealing with accidental hydrocarbon spillage and leaks, and detailing how these liquids will be stored, handled and disposed of.

The Employer's Agent shall approve the location of all fuel storage areas. All necessary approvals with respect to fuel storage and dispensing shall be obtained from the appropriate authorities. Symbolic safety signs depicting **"No Smoking", "No Naked Lights"** and **"Danger"** conforming to the requirement of SANS 1186 are to be prominently displayed in and around the fuel storage area. There shall be adequate fire-fighting equipment at the fuel storage area.

The Contractor shall ensure that all liquid fuels and oils are stored in tanks with lids, which are kept firmly shut and adequately secured. The capacity of the tank shall be clearly displayed and the product

contained within the tank clearly identified using the emergency information system detailed in SANS 0232 part 1. Fuel storage tanks shall have a capacity not exceeding 9000 litres and shall be kept on site only for as long as fuel is needed for construction activities, on completion of which they shall be removed.

The tanks shall be situated on a smooth impermeable base with an earth bund. The volume inside the bund shall be 110% of the total capacity of the largest storage tank. The base may be constructed of concrete, or of plastic sheeting with impermeable joints, covered by a layer of compacted earth to protect the sheeting. The impermeable lining shall extend to the crest of the bund. The floor of the storage area shall be sloped to enable any spilled fuel and/or fuel-contaminated water to be removed easily.

If any rainwater collects in the bunded areas, it shall be promptly removed and taken off Site to a disposal site approved by the Employer's Agent.

Only empty and externally clean tanks may be stored on the bare ground. Empty and externally dirty tanks shall be sealed and stored on an area where the ground has been protected.

Adequate precautions shall be provided to prevent spillage during the filling of any tank and during the dispensing of the contents. If fuel is dispensed from 200 litre drums, the proper dispensing equipment shall be used, and the drum shall not be tipped in order to dispense fuel. The dispensing mechanism for the fuel storage tanks shall be stored in a waterproof container when not in use.

E4.1.2 Refuelling

Plant shall be refuelled at a designated refuelling area approved by the Employer's Agent. The surface under the temporary refuelling area shall be protected against pollution to the reasonable satisfaction of the Employer's Agent prior to any refuelling activities. The Contractor shall ensure that there is always a supply of absorbent material (e.g. Spill Sorb or Enretech #1 powder or equivalent) readily available that is designed to absorb, break down and encapsulate minor hydrocarbon spillage. The quantity of such material shall be able to handle a minimum of 200 litres of hydrocarbon liquid spill.

E4.1.3 Treatment and remediation

Treatment and remediation of hydrocarbon spill and leak areas shall be undertaken to the satisfaction of the Employer's Agent. In the event of a hydrocarbon spill the source of the spillage shall be isolated and the spillage contained.

E4.2 Ablution and toilet facilities

Washing, whether of the person or of personal effects, defecating and urinating are strictly prohibited other than at the facilities provided.

The Contractor shall provide ablution facilities for all personnel employed on the Site, including shelter, toilets and washing facilities. The Contractor's personnel will not be permitted to use the City's ablution facilities.

Toilet facilities provided by the Contractor shall occur in a ratio of not less than 1 toilet per 30 workers (1:15 is preferred) of each sex. Toilet facilities shall be located within the Contractor's camp, but also at work areas remote from the camp, all to the satisfaction of the Employer's Agent. All portable toilets shall be adequately secured to the ground to prevent them toppling over as a result of wind or any other cause.

The Contractor shall ensure that the entrances to these toilets are adequately screened from view, that they are maintained in a hygienic state, serviced regularly, that no spillage occurs when they are cleaned and that contents are removed from Site. Toilets shall also be emptied before any temporary site closure for a period exceeding one week. Discharge of waste from toilets into the environment and burial of waste is strictly prohibited. The Contractor shall provide toilet paper at all times.

No ablution facilities shall be located closer than 50m to any water body

A Method Statement shall be provided by the Contractor detailing the provision, location, and maintenance of ablution facilities.

E4.3 Eating areas

The Contractor shall designate eating areas within the approved Contractor's camp. The feeding of, or leaving of food for, animals is strictly prohibited. Sufficient bins, as specified in Clause E4.4 below, shall be present in these areas.

Any cooking on Site shall be done on well-maintained gas cookers with fire extinguishers present. No open fires for cooking purposes shall be permitted, unless for occasional use in facilities specifically provided for this purpose and within the confines of the Contractor's camp.

E4.4 Solid waste management

E4.4.1 Litter and refuse

The site shall be kept neat and clean at all times, littering is prohibited.

No on-site burying or dumping of any waste materials, vegetation, litter or refuse shall occur. The Contractor shall provide scavenger and weatherproof bins with lids, of sufficient number and capacity to store the solid waste produced on a daily basis. The lids shall be kept firmly on the bins at all times. Bins shall not be allowed to become overfull and shall be emptied regularly, at least once a week. Waste from bins may be temporarily stored on Site in a central waste area that is weatherproof and scavenger-proof, and which the Employer's Agent has approved. Wherever possible refuse shall be recycled, and containers for glass, paper, metals and plastics shall be provided and the contents delivered to suitable recycling facilities when necessary.

All other litter and refuse shall be disposed of off Site at an approved landfill site. The Contractor shall supply the Employer's Agent with a certificate of disposal.

E4.4.2 Construction waste

Where possible all construction waste or spoil material shall be recycled, either on Site or elsewhere. As a last resort all construction waste shall be disposed of off Site at an approved landfill site. The Contractor shall supply the Employer's Agent with a certificate of disposal.

E4.5 Contaminated water management

Potential pollutants of any kind and in any form shall be kept, stored, and used in such a manner that any spill or escape can be contained and the water table and/or any adjacent water courses or bodies are not endangered. Spill kits which can be used to contain and/or mop up spills shall be available. Water containing such pollutants as cements, concrete, lime, chemicals, oils and fuels shall be discharged into a conservancy tank for removal from the Site to a licensed disposal facility. This particularly applies to water emanating from concrete batching plants and to runoff from fuel storage, refuelling or construction equipment washing areas. Wash down areas shall be placed and constructed in such a manner so as to ensure that the surrounding areas are not polluted.

No paint products, chemical additives and cleaners, such as thinners and turpentine, may be disposed of into the stormwater system or elsewhere on Site. Brush/roller wash facilities shall be established to the satisfaction of the Employer's Agent.

A Method Statement shall be provided by the Contractor detailing the management of contaminated water.

Should contaminated water be released into the environment, specifically into a water course, monitoring thereof shall commence in accordance to the National Water Act, 36 of 1998, Section 21(f) – refer to GN 399 (26 March 2004). Contaminated water must not be released into the environment without authorisation from the relevant authority.

The Contractor shall notify the Employer's Agent immediately of any pollution incidents on Site and, at his own cost, take all reasonable measures to contain and minimise the effects of the pollution.

Any rehabilitation of the environment required as a result of such pollution shall be carried out by the Contractor at his own cost in accordance with a Method Statement approved by the Employer's Agent.

E4.6 Site structures

The type and colour of roofing and cladding materials to the Contractor's temporary structures shall be selected to reduce the visual impact.

E4.7 Lights

The Contractor shall ensure that any lighting installed on the Site for his activities does not cause a reasonably avoidable disturbance to other users of the surrounding area.

Lighting installed shall, as far as practically possible, be energy efficient. Lighting utilised on Site shall be turned off when not in use.

E4.8 Workshop, equipment maintenance and storage

No workshops or plant maintenance facilities shall be constructed on Site for performing major or routine maintenance of equipment and vehicles.

The Contractor shall ensure that in those areas where, after obtaining the Employer's Agent's approval, the Contractor carries out emergency or minor routine plant maintenance, there is no contamination of the soil, water sources or vegetation. Drip trays to collect waste oil and other lubricants shall be provided in any areas of the Site where such maintenance takes place. Drip trays must be emptied regularly and after rain, and the contents disposed of at a licensed disposal facility.

All vehicles and plant shall be kept in good working order. Leaking vehicles and plant shall be repaired immediately or removed from the Site.

The washing of vehicles and plant on Site shall be restricted to emergency or minor routine maintenance requirements only. Washing may only be undertaken in areas designated by the Employer's Agent.

E4.9 Noise

The Contractor shall limit noise levels (for example, by installing and maintaining silencers on plant). The provisions of SANS 1200A Clause 4.1 regarding "built-up areas" shall apply.

Appropriate directional and intensity settings are to be maintained on all hooters and sirens.

No amplified music shall be allowed on Site. The use of audio equipment shall not be permitted, unless the volume is kept sufficiently low so as to be unobtrusive. The Contractor shall not use sound amplification equipment on Site, unless in emergency situations.

Construction activities generating output levels of 85 dB(A) or more in residential areas, shall be confined to the hours 08h00 to 17h00 Mondays to Fridays. Should the Contractor need to do this work outside of the above times, he shall do so only with the approval of the Employer's Agent, and the surrounding communities shall be informed prior to the work taking place.

E5 CONSTRUCTION

E5.1 Method Statements

The Contractor shall submit the environmental method statements required within such reasonable time as the Employer's Agent shall specify or as required by the EM Specification. The Contractor shall not commence any activity until the Method Statement in respect thereof has been approved and shall, except in the case of emergency activities, allow a period of two weeks for consideration of the Method Statement by the Employer's Agent.

The Employer's Agent may require changes to a Method Statement if the proposal does not comply with the specification or if, in the reasonable opinion of the Employer's Agent, the proposal may result in, or carries a greater than reasonable risk of, damage to the environment in excess of that permitted by the EM Specification.

Approved Method Statements shall be readily available on the Site and shall be communicated to all relevant personnel. The Contractor shall carry out the Works in accordance with the approved Method Statement. Approval of the Method Statement shall not absolve the Contractor from any of his obligations or responsibilities in terms of the Contract.

Changes to the way the Works are to be carried out must be reflected by amendments to the original approved Method Statements, and these amendments require the signature of both the Contractor and the Employer's Agent.

Method Statements shall consider all environmental hazards and risks identified by the Contractor and/or Employer's Agent and shall contain sufficient information and detail to enable the Employer's Agent to assess the potential negative environmental impacts associated with the proposed activity and shall cover applicable details with regard to:

a) construction procedures,
b) materials and equipment to be used,
c) getting the equipment to and from Site,
d) how the equipment/material will be moved while on Site,
e) how and where material will be stored,
f) the containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur,
g) the control of fire,
h) timing and location of activities,
i) compliance/non-compliance with the EM Specification,
j) any other information deemed necessary by the Employer's Agent.

The format to be used for the required method statements is bound in Annexure A of this EM Specification. The Contractor (and, where relevant, any sub-contractors) must also sign the Method Statement, thereby indicating that the work will be carried out according to the methodology contained in the approved Method Statement.

E5.1.1 Method Statements to be provided within 14 days from the Commencement Date

a) Layout and Preparation of Contractor's Camp (E5.4).

b) Ablution Facilities: number of, location, cleaning, method of securing to the ground, etc. of portable toilets (E4.2).

c) Solid Waste Management: number of, type, location, cleaning, method of securing to the ground, etc. of bins (E4.4).

d) Environmental Awareness Training: logistics for the environmental awareness courses for all the Contractor's management staff, as well as other employees (E5.2).

e) Emergency Procedures for Accidental Hydrocarbon Leaks and Spillages (E4.1 and E5.8).

f) Asphalt and Bitumen: details of all methods and logistics associated with the use of bitumen and asphalt (E5.11).

E5.2 Environmental Awareness Training

It is a requirement of this Contract that environmental awareness training courses are run for all personnel on Site. Two types of courses shall be run: one for the Contractor's and subcontractors' management, and one for all site staff and labourers. Courses shall be run during normal working hours at a suitable venue provided by the Contractor. All attendees shall remain for the duration of the course and sign an attendance register that clearly indicates participants' names on completion, a copy of which shall be handed to the Employer's Agent. The Contractor shall allow for sufficient sessions to train all personnel. Subsequent sessions shall be run for any new personnel coming onto Site. A Method Statement with respect to the organisation of these courses shall be submitted.

Notwithstanding the specific provisions of this clause, it is incumbent upon the Contractor to convey the spirit of the EM Specification to all personnel involved with the Works.

Training Course for Management and Foremen

The environmental awareness training course for management shall include all management and foremen. The course, which shall be presented by the Employer's Agent or his designated representative, shall be of approximately one hour duration. The course shall be undertaken prior to the commencement of work on Site.

E5.2.1 Training Course for Site Staff and Labour

The environmental awareness training course for site staff and labour shall be presented by the Contractor from material provided by the Employer's Agent. The course shall be approximately one hour long. The course shall be undertaken not later than 3 working days after the commencement of work on Site, with sufficient sessions to accommodate all available personnel.

All the Contractor's employees, sub-contractors' employees and any suppliers' employees that spend more than 1 day a week or four days in a month on Site shall attend the Environmental Awareness Training Course for Site Staff and Labour

E5.3 Contractor's Environmental Representative (ESO)

The Contractor shall appoint an environmental representative, also called an Environmental Site Officer (ESO), who shall be responsible for undertaking a daily site inspection to monitor compliance with this EM Specification. The Contractor shall forward the name of the environmental representative (ESO) to the Employer's Agent for his approval. The environmental representative (ESO) shall complete Environmental Site Inspection Checklists (Annexure B attached hereto) and these shall be submitted to the Employer's Agent once a week.

E5.4 Site division, demarcation and "no go" areas

The Contractor shall restrict all his activities, materials, plant and personnel to within the Site or any particular working areas specified or indicated on the drawings.

The Contractor shall erect and maintain permanent and/or temporary fences of the type and in the locations specified elsewhere in the Scope of Work or on the drawings. Such fences shall, if so specified, be erected before undertaking any construction activities.

Where environmentally sensitive areas are specified as "no go" areas, the Contractor shall ensure that, insofar as he has the authority, no person, plant or material shall enter the "no go" areas at any time.

A Method Statement detailing the layout and method of establishment of the Contractor's camp (including all offices, shelters, eating areas, storage areas, ablution facilities and other infrastructure required for the running of the project) shall be provided.

E5.5 Access routes/ haul roads

On the Site and, if so required, within such distance of the Site as may be stated by the Employer's Agent, the Contractor shall control the movement of all vehicles and construction equipment, including that of his suppliers, so that they remain on designated routes, are distributed so as not to cause an undue concentration of traffic, and that all relevant laws are complied with. In addition, the movement of such vehicles and construction equipment shall be planned and operated so as to minimise disruption to regular users of the routes. As far as possible the Contractor shall use existing access and haul routes. Damage to existing access roads as a result of construction activities shall be repaired to the satisfaction of the Employer's Agent, using material similar to that originally used. The cost of the repairs shall be borne by the Contractor. New temporary access or haul routes may only be established with the prior approval of the Employer's Agent. The rehabilitation of such routes shall be to the Contractor's own cost and to the approval of the Employer's Agent.

Any directional signage required by the Contractor for the purposes of directing the movement of his own vehicles and construction equipment (or that of his subcontractors or suppliers) must be of a design and in a location approved by the Employer's Agent. Directional signage may not be erected in such a manner that it interferes with sight lines or pedestrian movement.

E5.6 Construction personnel information posters

The Contractor shall erect and maintain information posters for the information of his employees, depicting actions to be taken to ensure compliance with aspects of the EM Specification. A2 information posters, printed on white vinyl, shall be erected at the eating areas and any other locations specified by the Employer's Agent.

The specification for the poster is presented in Annexure C of this EM Specification. The symbols shall be black and the circles shall be red lines. The Contractor shall ensure that the construction personnel information posters are not damaged in any way, and shall replace a poster if any part of it becomes illegible.

E5.7 Fire control

Other than for cooking purposes as specified in Clause E4.3, no fires may be lit on Site. Any fires which occur shall be reported to the Employer's Agent immediately.

Smoking shall not be permitted in those areas where it is a fire hazard. Such areas shall include fuel storage and refuelling areas, and any other areas where the vegetation or other materials are susceptible to the start and rapid spread of fire.

In terms of the National Environment Management: Air Quality Act, 39 of 2004 and Community Fire Safety By-law, burning is not permitted as a disposal method.

The Contractor shall appoint a Fire Officer (who may be the ESO) who shall be responsible for ensuring immediate and appropriate actions in the event of a fire and shall ensure that employees are aware of the procedure to be followed. The Contractor shall advise the relevant authority of a fire as soon as one starts and shall not wait until he can no longer control it. The Contractor shall forward the name of the Fire Officer to the Employer's Agent for his approval.

The Contractor shall comply with Clause 27 of the Construction Regulations, 2003 where applicable, and shall ensure that there is suitable and sufficient fire-fighting equipment available on Site at all times.

The Contractor shall be liable for any costs relating to the rehabilitation of burnt areas, should the fire be the result of the Contractor's activities on Site

The Contractor shall submit a Method Statement to the Employer's Agent covering the procedure to be followed in the event of a fire.

E5.8 Emergency procedures

The Contractor's attention is drawn to the Method Statements required in terms of Clauses E4.1 and E5.7 above. Such Method Statements shall include procedures to be followed by the Contractor in the event of an emergency.

Furthermore, in the event of an emergency the Contractor shall contact the City of Cape Town's Emergency Call Centre by telephoning 107 or 021 480 7700 (from a cell phone).Telephone numbers of emergency services, including the local fire fighting service, shall be posted conspicuously in the Contractor's office near the telephone.

E5.9 Health and safety

The Contractor shall comply with requirements of the Occupational Health and Safety Act, 85 of 1993 and Construction Regulations, 2014, the Health and Safety Specification and relevant clauses of GCC 2015, insofar as health and safety is concerned.

E5.10 Community relations

If so required, the Contractor shall erect and maintain information boards in the position, quantity, design and dimensions specified in the Scope of Work or as directed by the Employer's Agent. Such boards shall include contact details for complaints by members of the public in accordance with details provided by the Employer's Agent.

The Contractor shall keep a "Complaints Register" on Site. The Register shall contain all contact details of the person who made the complaint, and information regarding the complaint itself.

E5.11 General protections in terms of the National Heritage Resources Act, 25 of 1999

The Contractor shall take cognisance of the provisions of the National Heritage Resources Act, 25 of 1999 in respect of, *inter alia*, structures older than 60 years; archaeology, palaeontology and meteorites; burial

grounds and graves; and public monuments and memorials.

E5.12 Protection of natural features

The Contractor shall not deface, paint, damage or mark any natural features (e.g. rock formations) situated in or around the Site for survey or other purposes, unless agreed beforehand with the Employer's Agent. Any features affected by the Contractor in contravention of this clause shall be restored/ rehabilitated to the satisfaction of the Employer's Agent. The cost of restoration/rehabilitation shall be borne by the Contractor.

The Contractor shall not permit his employees to make use of any natural water sources (e.g. springs, streams, open water bodies) for the purposes of swimming, personal washing and the washing of machinery or clothes.

E5.13 Protection of flora and fauna

Except to the extent necessary for the carrying out of the Works, as specified by the Employer's Agent, no vegetation shall be removed, damaged or disturbed.

The presence of any wild animals found on Site shall be reported to the Employer's Agent, who shall issue an instruction with regard to their removal or relocation. If a wild animal needs removal from the Site the Cape Nature (Metro Region) Conservation Services Manager may be contacted for assistance (tel 021 955 9132/9121/3122/9130). Trapping poisoning, injuring or shooting animals is strictly forbidden. No domestic pets or livestock are permitted on Site, with the exception of controlled watchdogs approved by the Employer's Agent.

Where the use of herbicides, pesticides and other poisonous substances has been specified, the Contractor shall submit a Method Statement to the Employer's Agent for approval.

E5.14 Erosion and sedimentation control

The Contractor shall take all reasonable measures to limit erosion and sedimentation due to the construction activities and shall, in addition, comply with such detailed measures as may be required by the Scope of Work. Where erosion and/or sedimentation, whether on or off the Site, occurs, rectification shall be carried out in accordance with details specified by the Employer's Agent. Where erosion and/or sedimentation occur due to the fault of the Contractor, rectification shall be carried out to the reasonable requirements of the Employer's Agent, at the Contractor's cost. In particular, the Contractor shall ensure that the City's stormwater system is kept free from sediment arising from the Works.

Any runnels or erosion channels developed during the construction period or during the vegetation establishment period shall be backfilled and compacted, and the areas restored to a proper condition. Stabilisation of cleared areas to prevent and control erosion shall be pro-actively managed by the Contractor. The method of stabilisation shall be determined in consultation with the Employer's Agent.

E5.15 Aesthetics

The Contractor shall take any requisite measures to ensure that construction activities do not have an undue negative impact on the aesthetics of the area.

E5.16 Temporary site closure

In the event of temporary site closure (for a period exceeding one week), the Contractor's ESO shall carry out checks and ensure that, amongst others, the following conditions pertain and report on compliance with this clause:

a) Fire extinguishers are serviced and accessible.
b) There is adequate ventilation in enclosed spaces.
c) All hazardous substance stores are securely locked.
d) Fencing and barriers are in place.
e) Emergency and management contact details are prominently displayed and available.
f) Wind and dust mitigation measures, e.g. straw, brush packs, irrigation, etc. are in place.
g) Excavated and filled slopes and stockpiles are at a stable angle and capable of accommodating normal expected water flows.
h) There are sufficient detention ponds or channels in place.
i) Cement and materials stores are secured.
j) Toilets are empty and secured.
k) Central waste area and all refuse bins are empty and secured.
l) Contaminated water conservancy tank empty.

m) Any bunded areas are clean and treated with an approved product where applicable (e.g. Spill Sorb or Enretech #1 powder or equivalent).
n) Drip trays are empty and secure

E5.17 Asphalt and bitumen

Bitumen drums/products, if stored on Site, shall be stored in an area approved by the Employer's Agent. This area shall be indicated on the Method Statement for the Layout and Preparation of the Contractor's Camp. The storage area shall be constructed with an appropriate base, bunding and sump to the satisfaction of the Employer's Agent. A Method Statement shall be provided in this regard.

When heating bitumen products, the Contractor shall take cognisance of appropriate fire risk controls. Heating shall only be undertaken using LPG or similar zero emission fuels. Appropriate fire fighting equipment shall be readily available on Site.

E5.18 Dust

The Contractors shall be solely responsible, at his cost, for the control of dust arising from his activities on Site, and for any costs involved in damages resulting from the dust. The Contractor shall take all reasonable measures to minimise the generation of dust

E5.19 Contractor's advertising signage

Any advertising on the Site or any part of the Works shall remain at the sole discretion of the Employer, who reserves the right to order, via the Employer's Agent, its removal, covering or re-sizing, wherever placed, at no cost to the Employer.

Apart from at the Contractor's camp, no signage advertising the Contractor, or any of its subcontractors, manufacturers, suppliers or service providers shall be placed, fixed or erected anywhere on the Site or on the Works without the prior approval of the Employer's Agent. No advertising signage will be permitted on any designated scenic route. Notwithstanding any prior approval given, the Employer's Agent may instruct the Contractor to remove, cover or re-size any advertising signage at any time at no cost to the Employer.

Advertising signage at the Contractor's camp shall be appropriately designed and sized with due consideration to the surrounding environment, views and sight lines.

Branding or identification markings on the Contractor's and subcontractor's vehicles and equipment is generally permitted, although the Employer reserves the right to instruct, via the Employer's Agent, the removal, covering or re-sizing of any branding, markings or signage, on any equipment (scaffolding, for example), which it considers inappropriate in the environment in which it is placed.

No third party advertising (that is, in respect of any person, business or product that is not associated with the Works) shall be permitted anywhere on the Site or Works.

E5.20 Clearance of Site on completion

On completion of the Works, and at final completion when all defects have been remedied or corrected, the Contractor shall, in addition to the requirements for clearance of the Site in terms of the Contract, ensure that he has complied with the following requirements in terms of this EM Specification:

E5.20.1 Clause E3.1

Clean-up of improperly secured transported materials, and rehabilitation of storage areas.

E5.20.2 Clause E4.1.3

Remediation of hydrocarbon spill and leak areas.

E5.20.3 Clause E4.4

Disposal of litter, refuse and Contractor's waste.

E5.20.4 Clause E5.4

Removal of temporary fences and Contractor's camp.

E5.20.5 Clause E5.5

Repair of access roads damaged by the Contractor, and rehabilitation of temporary access routes.

E5.20.6 Clause E5.7

Rehabilitation of burnt areas should a fire be the result of Contractor's activities on Site.

E5.20.7 Clauses E5.11 to 5.13

Rehabilitation of heritage and natural features, including vegetation which is damaged or disturbed, which required protection in terms of these clauses.

E5.20.8 Clause E5.14

Rectification where erosion and/or sedimentation has occurred due to the fault of the Contractor .

E5.20.9 Clause E5.19

Removal of Contractor's advertising signage.

E6 TOLERANCES

E6.1 Fines

Environmental management is concerned not only with the final results of the Contractor's operations, but also with the control of how these operations are carried out. Tolerance with respect to environmental matters applies not only to the finished product, but also to the standard of the day-to-day operations required to complete the Works.

It is thus required that the Contractor shall comply with the EM Specification on an on-going basis and any failure on his part to do so will entitle the Employer's Agent to certify the imposition of a fine. Fines may be issued per incident at the discretion of the Employer's Agent. Such fines will be issued in addition to any remedial costs incurred as a result of non-compliance with the environmental specifications. The Employer's Agent will inform the Contractor of the contravention and the amount of the fine, and will deduct the amount from monies due in payment certificates issued under the Contract.

Maximum fines for the following transgressions by either the Contractor and/or his sub-contractors may be imposed by the Employer's Agent, as follows:

		Maximum fine per incident
a)	Vehicles, plant or materials related to the Contractor's operations, parked or stored outside the demarcated boundaries of the Site.	R 2 000
b)	Persons, vehicles, plant or materials related to the Contractor's operations, found within the designated boundaries of a "no go" area.	R 4 000
c)	Persistent and unrepaired oil leaks from machinery/not using a drip tray to collect waste oil and other lubricants/not using specified absorbent material to encapsulate hydrocarbon spillage/using inappropriate methods of refuelling (the use of a funnel rather than a pump).	R 3 000
d)	Refuelling in areas not approved by the Employer's Agent.	R 3 000
e)	Litter on Site.	R 1 000
f)	Deliberate lighting of fires on Site.	R 5 000
g)	Individual not making use of the Site ablution facilities.	R 1 000
h)	Damage to trees not specified to be removed.	R 5 000
i)	Dust or excessive noise emanating from the site	R 1 000
j)	Not containing water contaminated with pollutants such as cement, concrete, fuel, etc.	R 2 000

For each subsequent similar offence the fine shall be doubled in value to a maximum value of R50 000.

E7 TESTING

Not applicable to this tender.

E8 MEASUREMENT AND PAYMENT

E8.1 Basic principles

Except where separate pay items have been measured in the Bills of Quantities, all costs in respect of complying with the EM Specification are deemed to be covered by the sum tendered for complying with the EM Specification.

ANNEXURE A: ENVIRONMENTAL METHOD STATEMENT

LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

COMBINED ENVIRONMENTAL METHOD STATEMENTS

PROJECT NAME:
IMPLEMENTING ENTITY:
DATE:
REVISION:

The following Combined Environmental Method Statements has been developed in conjunction with the Contractor to address and mitigate potential impacts from the proposed development.

ENVIRONMENTAL AWARENESS TRAINING

Describe how environmental awareness and training for senior staff will be addressed:

Describe how environmental awareness and training for general labour will be addressed:

Describe how environmental awareness and training will be incorporated into daily toolbox talks:

* A copy of the training material and attendance register will be kept in the environmental folder.

SITE DEVELOPMENT PLAN AND LAYOUT

Briefly describe where the site camp will be located. Also provide a layout on the next page.
How will you demarcate the site camp?
What will the size of the site camp be?
Are there any sensitive areas, trees, shrubs or landscape features (e.g. a heritage site) that must be avoided to prevent disturbances and/or damage? How will disturbances or damage be prevented?

Is the site camp on a flat area (i.e. slope not exceeding 1:3)?	Y	N
Is the site camp located away from areas of stormwater concentration and areas prone to flooding?	Y	N
Are there any recently disturbed areas close to the site which can be used as a site camp?	Y	N
Is there sufficient space available at the identified site to accommodate all site camp components i.e. ablution facilities, eating areas, laydown areas, stockpile areas, vehicle parking area, concrete wash water settling area?	Y	N
Can the site camp remain at one location? i.e. it does not need to be moved on a regular basis (i.e. every two to four weeks) due to work sites being far apart?	Y	N

If, "No", attach the approval for request for deviation form to the back of this document.

To be provided with assistance from the ECO.

Figure 2: Locality map

To be provided with assistance from the ECO.

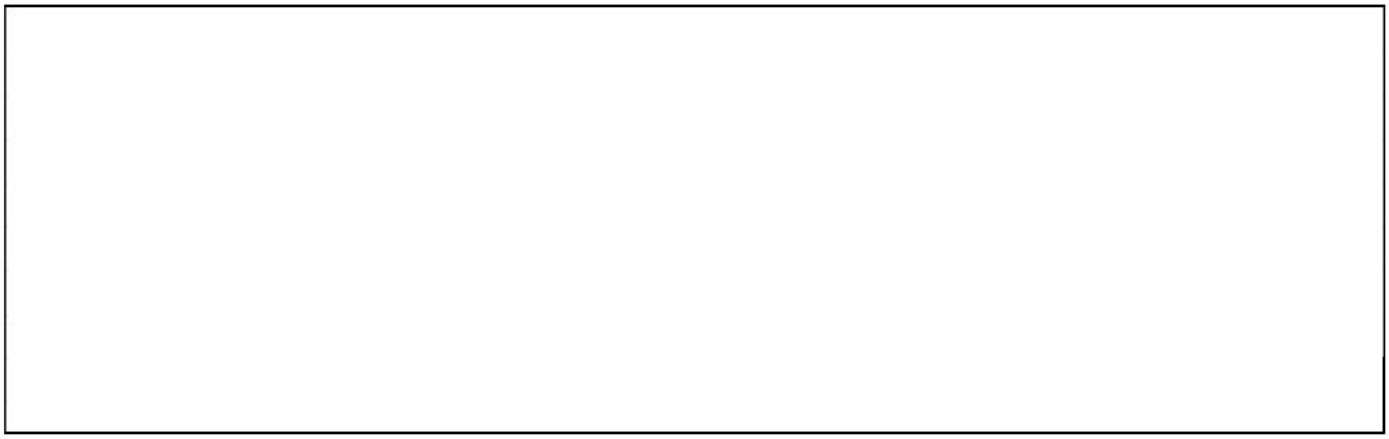


Figure 3: Environmental sensitivity map (terrestrial and aquatic).

To be provided with assistance from the ECO.

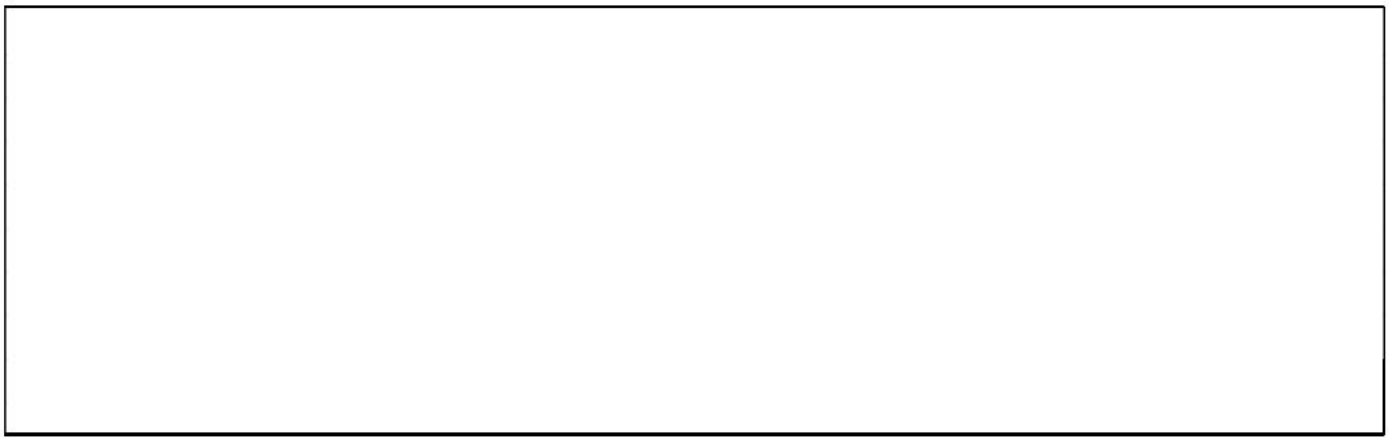
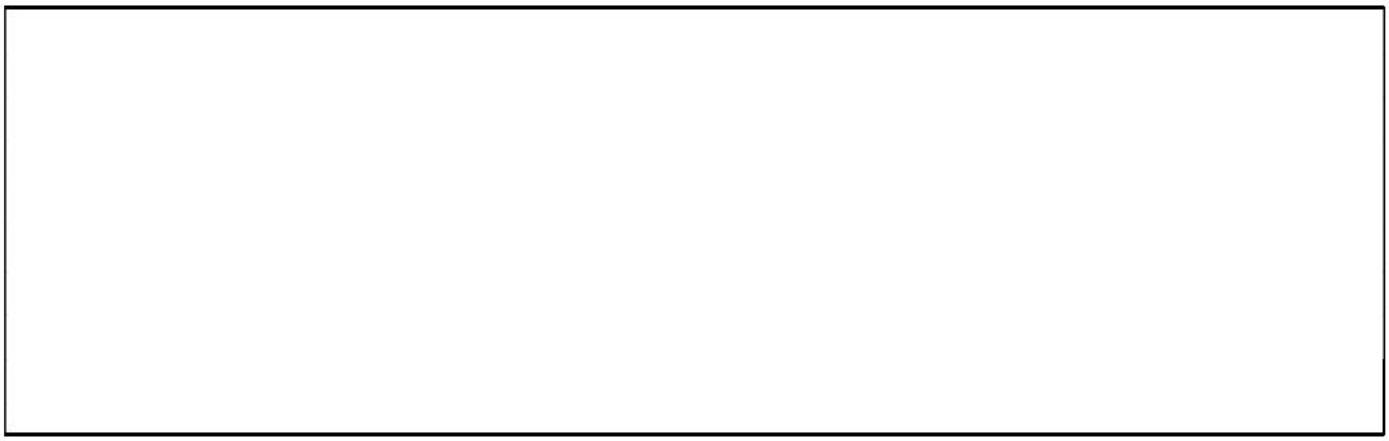


Figure 4: COCT Biodiversity overlaid with the proposed rehabilitation



Indicate the following (ignore if not relevant): Ablution facilities, waste storage area (general and hazardous), eating area, laydown area, stockpile area, concrete/mortar mixing/batching area, concrete wash water settling system, site office, access, vehicle parking area, any stormwater diversion measures required, watercourse or wetland boundary and sensitive features that must be avoided.
Site camp layout (please use multiple layout plans if required).

SITE DEMARCATION

Indicate the working area required.

Working area (incl. temporary laydown and stockpile areas, topsoil stockpiling, equipment etc.)	

How will you demarcate the working area required?

ACCESS ROUTES/HAUL ROADS

Length of new access road required.

Active works area (e.g. site camp, batching area, transmission, pipeline, outlet structures etc)	Existing access (Y/N)?	Length of access road required

Describe how access roads will be made and demarcated (i.e. avoiding unnecessary access roads and the creation of multiple access roads).

*Include a simple layout indicating the proposed access routes as an addendum to this document.

ABLUTION FACILITIES

How many people will be on site?

How many toilets will be required at a ratio of 1 toilet for every 15 people?

What type of toilet will be used and where will it be located?

If chemical toilets are used, specify how and when they'll be serviced.

EATING AREAS

Where will the eating area be located?

How will you prevent littering around the eating area?

* Also clearly indicate the designated eating area(s) on the layout plan.

VEHICLES AND EQUIPMENT

Describe the number and type of vehicles to be used on site.

Where will vehicles be parked or equipment stored overnight, during weekends and during holidays?

Describe the procedure to be implemented for dealing with vehicles or equipment leaking oil or fuel:

Describe emergency equipment maintenance procedures:

Procedure:
Materials:
Person responsible:

VEGETATION CLEARING AND REHABILITATION

Can the site be brush cut in order to undertake the construction activity?		
What are the procedures for clearing vegetated areas?		
What protection measures are being incorporated when encountering protected vegetation (flora)?		
Has opportunity been given to the respective landowner/land management/custodians to undertake a search and rescue or seed collection prior to construction activities?		
Is a substantial quantity of vegetation clearance required?	Y	N
If "yes" indicate how vegetation material not removed as part of topsoil stripping will be dealt with e.g. chipping, brush packing, donate to local community.		
How will areas disturbed by active works with indigenous vegetation be rehabilitated?		

PROTECTION OF FAUNA AND FLORA

Are you working in a conservancy, nature reserve or biosphere? If, yes, what are the precautions to be taken to avoid the accidental or intentional killing and/or trapping of animals?

Are you aware of any nesting or breeding sites close to any of the work areas?

Describe the procedure to be followed pre-construction to check for slow moving animals in the vicinity of the construction area.

Describe the procedure to be followed to check excavations of 0.5m and deeper for trapped animals.

If you are working in an area with potentially dangerous animals, describe the measures to be taken to ensure the safety of staff.

Are there any trees or shrubs that may not be disturbed or damaged? Have these been clearly marked to prevent disturbances and potential damage?

EROSION AND SEDIMENTATION CONTROL

How will you prevent the erosion of access roads and surfaces?

Will there be significant exposed areas (areas exceeding 10m2) during the rainfall season? If "Yes", how will you protect bare soil surfaces exposed for a month or longer (e.g. stormwater diversion, temporary revegetation, geotextile)?

Do you need to work on steep (1:4) slopes? If "Yes", describe the measures to be implemented to avoid the erosion of exposed ground surfaces, excavated material and construction material.

Are there any known stormwater structures discharging towards the site e.g. culverts, stormwater outlets. If "Yes", is the diversion of the stormwater required to protect the site from erosion and how will it be done?

PIPELINE ROUTES INCLUDING LOCATION, CONSTRUCTION AND STABILISATION, DECOMMISSIONING AND REHABILITATION

Describe procedures for laying and stabilisation of pipeline routes:

Describe the procedure for decommissioning of pipeline infrastructure:

Describe the procedure for erecting and maintaining earth stockpiles

How will the rehabilitation of impacted area be undertaken?

CONCRETE BATCHING AND CEMENT HANDLING

List activities where concrete or mortar will be used:

If ready mix is not used, where and how will concrete be mixed and how will it be transported to the active location?

How will cement laden runoff be managed? Specify for the concrete mixing area as well as washing of equipment.

Where and how will cement be stored?

How and where will cement bags be stored until taken off site?

How will excess concrete and concrete remains be disposed of?

DUST

What is the distance to the closest occupied building and what type of building is it (e.g. house, school, clinic, etc.)

List activities and material that might lead to the generation of dust:

If closer than 100m from a sensitive receptor e.g. occupied building, road, orchard, describe the activities to be implemented to limit and mitigate the generation of dust:

FIRE CONTROL

List activities on site with a fire risk e.g. smoking area, generators.

How will fires be prevented?

Describe the procedure to be followed in case of a fire on site:

Process:
Materials:
Responsible person:

HAZARDOUS CHEMICALS AND POTENTIAL HAZARDOUS SUBSTANCES

List potentially hazardous substances to be used on the project. (Hazardous being defined in terms of Hazardous Substances Act (No.187 of 1993) and associated regulations as well as SANS 10234. Examples include, but are not limited to: drums of fuel, grease, oil, brake fluid, hydraulic fluid, paint, batteries and herbicides (for alien plant clearing)).

How and where will these substances be stored?

How will these substances be applied or dispensed?

How will spills be prevented?

In the event of a spill, how will it be mitigated?

Process:
Materials:
Person responsible and contact details:

*Attach the relevant Material Safety Data Sheet (MSDS) of hazardous materials to be stored on site as an addendum to this document.

SETTLING PONDS AND SUMPS

What are the procedures for on-site management of settling ponds and sumps used?

SOLID WASTE MANAGEMENT AND DISPOSAL

What types of waste is expected to be generated during the construction period?
List any wastes that are potentially hazardous1 (e.g. empty sealant containers, materials from spill kit used to clean spillages, batteries, contents from portable toilets, herbicide containers):
Portable loo contents
How will waste be stored on site (i.e. where and in what)?
General:
Hazardous:
Recycling
How often, how and where will waste be disposed of?
General: Recyclable materials:
Hazardous:

* Please remember to clearly indicate waste storage areas on the layout plan.

MATERIALS HANDLING, USE AND STORAGE

Briefly list the materials (including volumes) to be used during construction (e.g. bidim, gabion baskets, stones, gravel, shuttering oil, cement, sand, MacMat-R, geotextile):
Where will the materials be off-loaded?
Where are you sourcing the material from?

1 Refer to National Environmental Management: Waste Amendment Act 26 of 2014 and SANS 10234

If it is not a commercial source, have you written obtained permission from the ECO and any other relevant party e.g. the landowner, provincial roads, Department of Mineral Resources? Please attached a copy of the written permission/consent to the end of this METHOD STATEMENT.	Y	N
Are the areas you've identified for stockpiling of bulk material outside of a water resource? If "No", consult with the ECO.	Y	N
Are the areas you've identified for stockpiling level (i.e. not steeper than 1:30)? If no, explain the measures which will be implemented to prevent materials washing away during rainfall.	Y	N
Have you planned how to get the materials from the stockpile/laydown area to the working area? Please provide details on the proposed methodology below. Differentiate between the various materials where required.	Y	N
Do you have sufficient covered storage space for products such as cement, and shuttering oil? Please provide details of the storage areas to be used and the type of cover e.g. roofed, shade cloth, storage container.	Y	N
Do you need to stockpile bulk materials e.g. rock, sand next to a work area? If "Yes", please provide details on the duration of stockpiling, the volume and the measures to be taken to avoid erosion of material and contamination of topsoil.	Y	N
Test pit holes will be backfilled within the same day to avoid erosion.		
Have you worked out a delivery schedule to avoid materials being stored on site for longer than 4 weeks?	Y	N
Is there any material which will be prone to become windblown e.g. sand? If yes, describe how you will contain the material.	Y	N

FUEL

What is the volume of fuel planned to be stored on site?

How and where will fuel be stored?

How will fuel be dispensed?

What precautions will be taken to prevent accidental spills or fires?

In the event of a spill, how will it be mitigated (i.e. cleaned up)?

Procedures:
Materials:
Person responsible and contact details:

How will hydrocarbon contaminated materials be managed and disposed of? Note hydrocarbon contaminated soil is only allowed to go to a Class A landfill (previously H:H landfill site).

TRAFFIC MANAGEMENT INCLUDING ACCESS ROADS

Has a traffic management plan been developed?

How will construction related traffic on the surrounding road network and environment be managed?

What safety measures will be employed to ensure road user safety?

WATER MANAGEMENT

What source will be used to obtain water for construction purposes?

What source will be used to obtain water for drinking and sanitation purposes?

How will waste water be monitored?

How will water wise techniques be employed?

STORMWATER MANAGEMENT

Is the site located in floodplain or valley? If "Yes", have you verified the typical rainfall patterns in the area and when increased flow/flooding can be expected?

Are you aware of any major dams or impoundments upstream of the site? If yes, do you have the contact details of the entity/responsible person in control of releases from the dam or impoundment and have you notified them of work being undertaken downstream?

Are you doing work in the "seasonal" or "permanent zone" of a wetland i.e. an area that is seasonally or permanently wet? If "Yes", describe the dewatering procedures to be followed (i.e. will pumping be required, where will the pumped water be discharged, how will you reduce sediment loads in pumped water, how will you prevent scouring at the pipe outlet?)

Do you need to divert flow to enable construction/work being undertaken? If "Yes", provide details on the type and duration of the diversion.

N/A

ENVIRONMENTAL MONITORING

How will dust be monitored?

Visually

How will noise be monitored?

No excessive noise envisaged

How will waste water be monitored?

No waste water to be generated

HERITAGE - PROTECTION OF ARCHAEOLOGICAL AND PALAEONTOLOGICAL SITES

Are you aware of any known heritage artefacts (e.g. old buildings, Stone Age sites, shell middens, caves, historic grave sites, monuments) close to the site? If "Yes", describe how you will protect the site.

Describe the procedure to be followed in the event that an object of heritage, archaeological or paleontological is discovered:

NOISE

Are there any houses nearby? Do you need inform the landowners of any noisy activities that will take place? How will this be done?

Describe the measures to be implemented to prevent excessive noise disturbance during construction:

REHABILITATION

What areas have been identified for rehabilitation?

How will reinstatement take place?

TRAINING

How often is periodic training undertaken?

Is there proof of attendance on file with relevant training material and evaluation records?

IMPLEMENTING ENTITY'S SAFETY HEALTH ENVIRONMENT (SHE) OFFICER

Who will be responsible to ensure that Health and Safety and Environmental Requirements are implemented on site? Describe responsibilities of the relevant person: Name:
Responsibilities:
Reporting to:

COMMUNITY RELATIONS

Who is/are the landowner(s) of the property/properties where work will be conducted?

Has the landowner been contacted and notified of construction commencing and are there any specific concerns or requests which need to be taken into account?

Describe how good community relationships will be ensured (e.g. complaints register, contact details of Implementing Entity on site):

SITE CLOSURE

Describe procedures for temporary closure (during holidays)?

Describe procedures for permanent closure i.e removal of site infrastructure and plant?

EMERGENCY PROCEDURES

Describe procedures and reporting for emergency events?

EMERGENCY TELEPHONE NUMBERS:

Designation	Name	Organisation	Cell
ECO			
Contracts Director			
Senior Safety Officer			
Site safety Officer			
Site Agent			
ESO			
CCT Emergency Call Centre			

NON-COMPLIANCE AND PENALTIES

The section captured below details what monitoring is required and the protocols to be followed by the contractor.

Non-Compliance

Non-compliance may occur for several reasons. This may be due to an accident or single incident, in which case corrective measures may provide an effective solution. However, it may occur due to negligence which is unacceptable, and could result in a penalty fine. Penalties will be issued for certain transgressions listed in the Method Statement and Environmental Management Programme (EMPr). Penalties may be issued per incident at the discretion of the Project Manager under advisement of the ECO. Such penalties will be issued in addition to any remedial costs incurred as a result of non-compliance with this EMPr. The Project Manager will inform the Contractor of the contravention and the amount of the penalty, and shall be entitled to deduct the amount from monies due under the Contract.

Should there be any incident on site that affects the environment, the following lines of communication are to be implemented.

All incidents are to be reported immediately to the ESO and ECO (during the construction phase).

Depending on the severity of the incident, the ESO/ECO and/or Employer must make the appropriate contact to notify the relevant authorities and emergency services (if required).

All incidents reported must be included in the ECOs reports.

Any incident or issue of non-compliance is to be reported by the ECO in a format that is to include the following aspects:

Description of the incident/ non-compliance;

Remedial action required, including the deadline for such action;

Relevant/ supporting documentation (i.e. providing evidence of the non-compliance/ issues not complied with;

Relevant diagrams to support the description of the non-compliance and/ or the remedial action to be taken;

Provision for dates and signatures of both the ECO and Risk Manager at issuing of the report, as well as completion and verification of the remedial action, as specified in the report.

Activities that are directly endangering the environment or are resulting in a breach of any Method Statement or EMPr requirement or EA condition, may be stopped by the Project Manager in consultation with the ECO (or temporarily stopped by the ECO) until such compliance issue is rectified.

In all instances where costs are incurred in rectifying a breach of the Method Statement or EMPr, enforcing the provisions of the Method Statement or EMPr, or in taking remedial or preventative action to safeguard the environmental integrity, the costs will be recovered jointly or severally from the Principal Responsible Party, or the Contractor.

Should, however, a breach of the Method Statement or EMPr be as a direct result of negligence, an act, omission or failure to act on the part of the Proponent (or their successor in title), then the Proponent (or their successor in title) may be responsible for the costs related to rectifying such breach.

Penalties

Penalties will be issued for certain transgressions. Penalties may be issued per incident as per the discretion of the ECO. Such penalties will be issued in addition to any remedial cost incurred as a result of the non-compliance with this specification. The ECO will inform the Contractor of the contravention and the amount of the penalty and shall be entitled to deduct the amount from the monies due under the contract.

Penalties for the activities detailed below, will be imposed by the ECO on the Contractor and/or sub-contractors.

Vehicles, plant or materials related to the Contractor's operations, parked or stored outside the demarcated boundaries of the Site.	R 2 000
Persons, vehicles, plant or materials related to the Contractor's operations, found within the designated boundaries of a "no go" area.	R 5 000
Persistent and unrepaired oil leaks from machinery/not using a drip tray to collect waste oil and other lubricants/not using specified absorbent material to encapsulate hydrocarbon spillage/using	R 3 000

	inappropriate methods of refuelling (the use of a funnel rather than a pump).	
	Refuelling in areas not approved.	R 3 000
	Litter on Site per incidence.	R 1 000
	Deliberate lighting of fires on Site.	R 5 000
	Individual not making use of the Site ablution facilities.	R 1 000
	Damage to trees or vegetation not specified to be removed.	R 5 000
	Dust or excessive noise emanating from the site	R 1 000
	Not containing water contaminated with pollutants such as cement, concrete, fuel, etc.	R 2 000
	Uncontained runoff of sediment into indigenous vegetation or a watercourse.	R 5 000
	Failing to mitigate an environmental incident that could have been avoided with preventative measures.	R 2 000

For each subsequent similar offence, the penalty shall be doubled in value to a maximum value of R 500 000. Furthermore, time spent to clear up around the site and undertake the rehabilitation will not be considered drilling time will therefore not be paid. It is therefore advised that the site be kept in a neat and clean manner daily to act proactively.

Record is to be kept of these penalties, and money is to be held in an environmental fund by the Client and/or be allocated towards increasing environmental education in the local community. The Client, in consultation with the ECO, will make a final decision regarding the allocation of penalty funds. These transactions should be kept on record and filed upon completion of the project.

DECLARATIONS

CONTRACTOR

I understand the contents of this Method Statement and the scope of works required of me. I further understand that this Method Statement may be amended on application to other signatories and that the Engineer's Representative/Environmental Officer/Environmental Control Officer will audit my compliance with the contents of this Method Statement. I understand that this method statement does not absolve me from any of my obligations or responsibilities in terms of the contract.

_____

(signed) (print name)

Dated:

ENVIRONMENTAL CONTROL OFFICER

The work described in this Method Statement, is carried out according to the methodology described, appears to be satisfactorily mitigated to prevent avoidable environmental harm:

_____

(signed) (print name)

Dated:

EMPLOYER'S AGENT

The works described in this Method Statement is accepted and shall be implemented as described.

_____

(signed) (print name)

Dated:

ANNEXURE B: ENVIRONMENTAL SITE INSPECTION CHECKLIST

To be submitted to the Employer's Agent once a week

CONTRACT:..... **DATE**:.....

ENVIRONMENTAL ASPECT	YES/ NO (✓ or X)	COMMENTS
• All new personnel on Site are aware of the contents of the EMP and have been through the environmental awareness course.		
• Contractor's camp is neat and tidy and the labourers' facilities are of an acceptable standard.		
• Sufficient and appropriate fire fighting equipment is visible and readily available in the appropriate places.		
• Waste control and removal system is being maintained.		
• Fences are being maintained.		
• Drip trays are being utilised where there is a risk of spillage.		
• Bunded areas/drip trays are being emptied on a regular basis (especially after rain).		
• No leaks are visible from construction vehicles.		
• Refuelling of vehicles and plant occurs within designated areas, and appropriate refuelling apparatus and drip trays are being used.		
• "No go" areas, natural features, vegetation, etc. have not been damaged.		
• Dust control measures (if necessary) are in place and are effectively controlling dust.		
• Noise control measures (if necessary) are in place and are working effectively.		
• Erosion and sedimentation control measures (if necessary) are in place and are controlling effectively.		
• Material stockpiles are located within the boundary of the Site and are protected from erosion.		
• Other		

Completed by:..... Signed:.....

ANNEXURE C: CONSTRUCTION PERSONNEL INFORMATION POSTER

ANNEXURE D: ADDITIONAL ENVIRONMENTAL ISSUES DEEMED TO FORM PART OF THE ENVIRONMENTAL MANAGEMENT PROGRAMME

Listed below are issues pertaining to the environment that form part of the Contract Document. The clause references relate to the **General Conditions of Contract for Construction Works, Third Edition, 2015 (GCC 2015)**. They are listed here to emphasise that they form part of the environmental considerations and requirements for this project. They must be read together with any Contract Specific Data referring thereto in Part C1.2 Contract Data. The comments made below on the various issues are to be taken as explanatory, in so far as environmental matters are concerned, and do not modify the clauses in any way.

1. **Monitoring**

   Clause 3.1.1 makes provision for the Employer's Agent to administer the Contract in accordance with the provisions of the Contract, including the monitoring of any environmental variables.

2. **Health and safety**

   Clauses 3.1.4, 4.3.1, 4.3.2 and 4.10.1 remind the Contractor of his obligations in terms of the Occupational Health and Safety Act (No. 85 of 1993) and Construction Regulations 2003.

   Clause 5.7 of SANS 1200A reinforces these requirements through the observation of proper and adequate safety arrangements.

3. **Employer's Agent's authority to delegate**

   Clause 3.2.4 gives the Employer's Agent the authority to appoint a representative to act as the Environmental Officer (EO) for the Contract. The EO, who shall be responsible for monitoring compliance with the EMP, may be the Employer's Agent's Representative or any other person accountable to the Employer's Agent.

4. **Employer's Agent's instructions**

   Clause 4.2.1 requires that the Contractor comply with the Employer's Agent's instructions on any matter relating to the Works. Moreover, Clause 4.2.2 ensures that the Contractor only takes instructions from the Employer's Agent, the Employer's Agent's Representative or a person authorised by the Employer's Agent in terms of Clause 3.2.4.

5. **Compliance with applicable laws**

   Clause 4.3.1 requires that the Contractor comply with all applicable laws, regulations, etc. in fulfilling the Contract.

6. **Protection of fossils, etc.**

   Clause 4.7.1 requires the Contractor to take reasonable precautions to prevent any person from damaging, *inter alia* anything of geological or archaeological interest, and requires that he inform the Employer's Agent and follows any instructions issued in this regard.

7. **Housing, food and transport**

   Clause 4.10.1 requires the Contractor to make his own arrangements for payment, housing, feeding and transport for his employees, provided that if he uses any part of the Site for such purposes he shall obtain the Employer's Agent's prior approval.

   Clause 4.2 of SANS 1200A further requires that facilities provided comply with local authority regulations and are maintained in a clean and sanitary condition.

8. **Competent employees**

   Clause 4.11.1 requires that all persons employed on Site are careful, competent, and efficient. These attributes embrace knowledge of the environmental matters and issues dealt with in the EMP.

9. **Removal from Site**

   Clause 4.11.2 makes provision for the Employer's Agent to instruct the removal from the Works and Site of any person who is guilty of misconduct, or is incompetent or negligent, or is an undesirable presence on Site.

Clause 7.1.1 requires that all Construction Equipment be in good working order. Accordingly, the Employer's Agent may order that any Construction Equipment not complying with the environmental specifications be removed from Site.

10. **Unacceptable documentation**

Clauses 5.3.1 and 5.3.2 require the Contractor to provide documentation required before commencement with Works execution, failing which the Employer may terminate the Contract. Such documentation includes the Protection of the Environment Declaration provided for in the Contract Document.

11. **Programme and Method Statements**

Clause 5.6.1 makes provision for the Employer's Agent to request the programmes for carrying out the Works.

Clause 5.6.2 makes provision for the Employer's Agent to request statements from the Contractor for the entire scope of the work. In the case of the environmental specifications, these would be submitted as Method Statements.

12. **Hours of operation**

Clause 5.8.1 restricts the Contractors hours of operation to between sunrise and sunset on working days (usually from Monday to Saturday), unless, *inter alia,* permitted by the Employer's Agent in writing.

Clause 5.7.2 further requires that in the event that permission is granted for night work, then such work shall be carried out without excessive noise and disturbance.

13. **Suspension of Works**

Clause 5.11.1 enables the Employer's Agent to suspend the progress of the Works or any part thereof, which may be as a result of some default or breach of the Contract on the part of the Contractor.

14. **Site clean-up**

Clause 5.15.1 requires that, on completion of the Works, the Contractor shall clear away and remove from the Site all Construction Equipment, surplus materials, rubbish and Temporary Works of every kind and leave the whole of the Site and Works clean and in a safe condition. All streams and watercourses shall be restored to the condition as at the commencement of the Works. Should the Contractor fail to do the work upon notice from the Employer's Agent, the Employer may in terms of Clause 7.8.3, employ others to carry out the work and recover the cost of doing so from the Contractor.

15. **Access to the Works**

Clause 7.3.1 makes provision for the Employer's Agent to authorise the Environmental Officer (EO) to have access to the Works and Site.

16. **Pollution prevention and interferences**

Clause 8.1.2 requires that all operations necessary for the execution of the Works be carried out so as not to cause unnecessary noise or pollution, or to interfere unnecessarily or improperly with public services, or the access to, use and occupation of public or private roads and footpaths or properties.

Clause 5.6 of SANS 1200A further requires the Contractor to minimise dust nuisance and pollution of streams and inconvenience to or interference with the public.

17. **Dust**

Clause 8.1.2 requires that all operations necessary for the execution of the Works be carried out so as not to cause unnecessary pollution.

Clause 5.6 of SANS 1200A requires that the Contractor take all reasonable measures to minimise any dust nuisance.

18. **Noise**

Clause 8.1.2 requires that all operations necessary for the execution of the Works be carried out so as not to cause unnecessary noise.

Clause 4.1 of SANS 1200A requires that when working in built-up areas, the Contractor shall provide and use suitable and effective silencing devices for pneumatic tools and other plant that would otherwise cause a noise level exceeding 85dB.

19. **Protection of existing environment**

Clause 8.1.3 requires that the Contractor uses every reasonable means to prevent any roads or bridges to or in the vicinity of the Site being subjected to damage by excessive loads, or disruption due to excessive traffic, occasioned by his transport arrangements.

20. **Reinstatement**

Clauses 8.2 and 8.4 make provision for the Contractor to repair and make good any damage to the Works in his care (other than “excepted risks”), and bear any costs associated with such reinstatement.

21. **Reporting accidents**

Clause 8.5.1 requires the Contractor to report to the Employer’s Agent every occurrence on the Site which causes environmental damage.

ANNEXURE E: ENVIRONMENTAL INCIDENT REPORT FORM

Date of Incident	Time of Incident	Date of notification of ECO

TYPE OF INCIDENT			
Hydrocarbon spill	Chemical spill	Water release (sediment, contaminated, scouring, erosion)	Breach of WUL conditions
Uncontrolled air emission	Management of Wastes	Fire	Excessive vegetation clearance or damage
Damage to cultural heritage items/ area	Excessive noise	Protected vegetation damage	Fauna injury/ death
Near miss	Not using ablutions	Not using approved access roads	Other

Notify ECO	Yes	No
Notify DEADP	Yes	No
Notify external authorities	Yes	No

TYPE OF IMPACT
General environmental and social impacts (utilize if other categories do not apply)
Contamination of land
Controlled and uncontrolled emissions to atmosphere
Noise, dust, vibration and odour
Solids and other wastes
Archaeological, heritage or cultural Issues
Use of land, water, fuels and energy, and other natural resources
Legal
Public/ media
Total Cost – fines, warning, remedial action, lost time, legal costs, liabilities, etc

NUMBER OF PEOPLE AFFECTED BY THE INCIDENT			
Contractor:		General Public:	
Subcontractors: N/A		Adjacent Property Owners:	
Trespassers: N/A		Others:	

DETAILS OF INCIDENT
How it occurred:
Containment:
Cleanup information:
Other details:

Were the Police or Emergency Services Involved?	Yes	No
If yes, give details:		

COST OF INCIDENT	
Investigation costs	

Monitoring costs	
Remediation costs	
Lost time	
Legal costs	
Fines	
Disposal costs	
Training costs	
Other liabilities	
Liaison with Authorities	
Total	

INCIDENT INVESTIGATION DETAILS		
Incident investigation undertaken?	Yes	No
Witness names and contact details provided?	Yes	No
Details of preventative action to be taken:		

COMPLETED BY			
Name	Signature	Position	Date

[redacted]

PROJECT SPECIFIC HEALTH & SAFETY SPECIFICATIONS

BASELINE RISK ASSESSMENT

REV 001 – 27/ 06/ 2024

639-SW-L-DP7149-23-24-Term-Tender-Laying-Water-Mains-Fire-Hydrants

[redacted]

PREPARED FOR:

CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

REVISIONS

Rev No	Issue / Review Date	Description of Revisions Made	Author
001	27 / 06 / 2024	OHS Document Specifications First Development	[redacted]

FOREWORD

These health & safety specifications have been compiled in terms of the Occupational Health & Safety Act no. 85 of 1993 and Regulations as amended (the Act).

It must be clear that this document is a management tool and should be used by the Principal Contractor and Contractors in order to comply with the aforementioned Act and regulations.

Should there be any contradiction between this document and the Act, the Act must take preference except where explicitly stated.

Similarly, where this document is silent on a specific health & safety requirement, the Act must be used as the minimum requirement.

Should you be unclear about anything set out in this document, please contact [redacted] in this regard.

Ensuring you of our best intentions and service at all times.

HEALTH AND SAFETY SPECIFICATIONS FOR 639-SW-L-DP7149-23-24-Term-Tender-Laying-Water-Mains-Fire-Hydrants
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1. INTRODUCTION AND BACKGROUND

1.1 Background to the Health and Safety Specifications (also termed These Specifications)

The Construction Regulations (February 2014) places the onus on the Client prepare health & safety specifications, highlighting all risks not successfully eliminated during design.

1.2 Purpose of the Health and Safety Specifications

The purpose of the H&S specifications document is to assist in achieving compliance with the Occupational Health & Safety Act 85, 1993 (OHS Act) and the promulgated Construction Regulations (February 2014) in order to prevent or as far as possible, reduce incidents and injuries. These specifications should act as the basis for the drafting of the Principal Contractor's and Contractors' construction phase health & safety plans.

The health & safety specifications set out the requirements to be followed by the Principal Contractor and other Contractors so that the health & safety of all persons (including the public) potentially at risk may receive the same priority as other facets of the project e.g. cost, program, environment, quality, etc.

1.3 Implementation of the Health and Safety Specifications (Drafting of Health & Safety Plan)

These health & safety specifications form an integral part of the contract, and the Principal Contractor is required to use it when drawing up its project-specific construction phase health & safety plan. The Principal Contractor must forward a copy of these specifications to all Contractors at their bidding stage so that they can in turn prepare health & safety plans relating to their operations.

1.4 Professional Team

Discipline	Company Name	Name	Abbr.	E-mail
Project Manager	City of Cape Town	[redacted]		
Health and Safety	[redacted]	[redacted]	[redacted]	[redacted]

1.5 Definitions & Abbreviations

Act: means the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)

AIA means an Inspection Authority approved by the chief inspector: Provided that an inspection authority approved by the chief inspector with respect to any particular service shall be an Approved Inspection Authority with respect to that service only.

Client: means any person for whom construction work is being performed

Client's Health and Safety Agent: [redacted]

Competent person: means any person having the knowledge, training, experience, and qualifications specific to the work or task being performed.

Construction work: means any work in connection with—

- the erection, maintenance, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure.
- the installation, erection, dismantling or maintenance of a fixed plant where such work includes the risk of a person falling.
- the moving of earth, clearing of land, the making of an excavation, piling, or any similar type of work.

Contractor: means an employee, as defined in section 1 of the Occupational Health and Safety Act, who performs construction work and includes principal contractors;

Hazard identification: means the identification and documenting of existing or expected hazards to the health and safety of persons, which are normally associated with the type of Laying-Water-Mains-Fire-Hydrants being executed or to be executed;

Health and safety file: means a file or other record in permanent form, containing the information required as contemplated in these regulations;

Health and safety plan: means a documented plan, which addresses hazards identified and includes safe work procedures to mitigate, reduce or control the hazards identified;

Health and safety specification: means a documented specification of all health and safety requirements pertaining to the associated works on a construction site, so as to ensure the health and safety of persons;

HCA: Hazardous Chemical Agents

MSDS: Material Safety Data Sheet

PPE: Personal Protective Equipment

OREP: Occupational Risk Exposure Profile

Medical Certificate of Fitness: means a certificate contemplated in Construction Regulation 7(8);

SWP: Safe Work Procedure

Occupational Health Practitioner means an occupational medicine practitioner or a person who holds a qualification in occupational health recognized as such by the South African Medical and Dental Council as referred to in the Medical, Dental and Supplementary Health Service Professions Act, 1974 (Act No. 56 of 1974), or the South African Nursing Council as referred to in the Nursing Act, 1978 (Act No. 50 of 1978);

Occupational Hygiene Survey: means a Survey or Analysis on Hazardous Environmental Exposure e.g. Noise, Lead, Asbestos, Airborne Pollutants, Thermal Stress, Hazardous Chemical Agents, etc. to Persons conducted by an Inspection Authority Approved by the Department of Labour for the Exposure identified, provided that an inspection authority approved by the chief inspector with respect to any particular service shall be an Approved Inspection Authority with respect to that service only

Occupational Hygiene: means the anticipation, recognition, evaluation and control of conditions

arising in or from the workplace, which may cause illness or adverse health effects to persons;

Principal contractor: means an employer, as defined in section 1 of the Occupational Health and Safety Act who performs construction work and is appointed by the client to be in overall control and management of a part of or the whole of a construction site;

Risk assessment: means a program to determine any risk associated with any hazard at a construction site, in order to identify the steps needed to be taken to remove, reduce or control such hazard;

Structure: means any building, steel or reinforced concrete structure

SACPRINCIPAL CONTRACTORMP means the South African Council for the Project and Construction Management Professions

Designer: means a competent person who

- prepares a design;
- checks and approves a design;
- arranges for a person at work under his or her control to prepare a design, including an employee of that person where he or she is the employer; or
- designs temporary work, including its components;
- an architect or engineer contributing to, or having overall responsibility for a design;
- a building services engineer designing details for fixed plant;
- a surveyor specifying articles or drawing up specifications;
- a contractor carrying out design work as part of a design and building project; or
- an interior designer, shop-fitter or landscape architect;

Disease means a disorder of structure or function in a human, animal, or plant, especially one that produces specific symptoms or that affects a specific location and is not simply a direct result of physical injury.

Construction manager: means a competent person responsible for the management of the physical construction processes and the coordination, administration and management of resources on a construction site;

Construction site: means a workplace where construction work is being performed.

"COVID-19" means Coronavirus Disease 2019;

"Disaster Management Act" means the Disaster Management Act, 2002 (Act No. 57 of 2002);

"OHSA" means the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993);

"Virus" means the SARS-CoV-2 virus;

"Worker" means any person who works in an employer's workplace including an employee of the employer or contractor, a self-employed person or volunteer;

"Workplace" means any premises or place where a person performs work.

"Transmission" or "Transmitting" is the passing of a pathogen causing communicable disease from an infected host individual or group to a particular individual or group, regardless of whether the

other individual was previously infected.

OVERVIEW OF THE WORKS

The nature of the works includes the supply and installation of new water mains or connections, extensions and upgrading of existing water connections and the supply, maintenance and installation of fire hydrants and valves.

Work will be awarded as Works Projects as and when required by the City of Cape Town for the duration of the term tender contract and are to be executed by contractors allocated Works Projects through a secondary selection process out of the panel of contractors. The Works Projects may be located anywhere within the City of Cape Town municipal area.

2. OCCUPATIONAL HEALTH & SAFETY MANAGEMENT SYSTEM ELEMENTS

2.1 Scope of the Specifications and Description of Project

Work items under this term tender contract may include any one or more of the following:

- **General items:**

    - Establishment on site by the Contractor
    - The supply of labour, tools, equipment, materials and supervision to complete the work
    - Setting out of the Works
    - Accommodation of vehicular traffic and pedestrians during all construction work
    - Maintenance of the works during and after construction.
    - Excavations
    - Dewatering of excavations
    - Isolation of Pipelines
    - Temporary water supply if required
    - Installation, repair and or replacement of water mains or connections
    - Replacement of water fittings, valves and fire hydrants
    - Construction of minor structures for water purposes eg. Valve chambers
    - Installation of sleeves by means of horizontal drilling
    - Testing and flushing/ sanitation of water pipes
    - Reinstatements of roads, kerbs, sidewalks and private gardens
    - Providing "As Built" data on completion of the Works Project
    - Compliance with the Environmental Management Plan
    - Compliance with the Health and Safety Specifications

Exposure to Biological Agents

Employees shall be exposed to sewage material. Sewage material may contain biological agents which may give rise to illnesses when contacted. It is therefore imperative that the Principal Contractor ensures that all exposed employees undergo Tetanus vaccinations before commencement on site.

Exposure to noxious gases

The execution of the rehabilitation project shall have potential release of noxious gases from the

sewer lines. Such gases may include Methane; amongst others.

The Principal Contractor shall ensure that employees are not adversely affected by noxious gases.

The following are compulsory preventive measures that must be undertaken as precautionary measures:

a. Manholes where employees shall be working must be opened at least 2 hours before accessing the manholes. This shall ensure that all noxious gases are released to the atmosphere.

b. Before accessing man-holes, the Principal Contractor shall ensure that Confined Space health and safety requirements are adhered to.

c. Before accessing man-holes, the Principal Contractor shall conduct air monitoring test to test for presence of noxious gases. No employee shall be allowed to access manholes without this testing. Where tests reveal presence of noxious gases, employees shall not access the manholes.

d. The Principal Contractor shall further conduct hourly testing where employees are working continuously for more than an hour.

Lifting machines and tackle

The principal contractor and all contractors shall ensure that lifting machinery and tackle is inspected before use and thereafter in accordance with the Driven Machinery Regulations and the Construction Regulations (Section 22). There must be competent lifting machinery and tackle inspector who must inspect the equipment daily or before use, taking into account that:

- All lifting machinery and tackle has a safe working load (SWL) clearly indicated;
- Regular inspections and servicing is carried out;
- Records are kept of inspections and of service certificates;
- There is proper supervision in terms of guiding the loads that includes a trained Rigger/Banks-man to direct lifting operations and check/inspect lifting tackle;
- A record of such inspections must be kept on the site Health and Safety file.
- The operators are competent as well as physically and psychologically fit to work and in possession of a medical certificate of fitness, which shall be available on site.
- Equipment such as slings, ropes, chains an pipe lifting clamps shall be in good condition, with no excessive wear and corrosion being evident. A designated competent person shall examine such equipment on a weekly basis.
- The lifting device shall be fitted with an arresting device, which locks the drum in the event of an engine failure.
- Hooks shall be fitted with a locking device to prevent the rope/sling/chain from being able to slip off the hook.
- Lifting cranes must be fitted with anti-two blocks.

The Works that are to be carried out will be specified in Works Project contract documents as and when required and as provided for in the Bills of Quantities therein. However, if during the course of construction conditions are found to differ from those anticipated, the Employer's Agent may modify the scope of the work to suit the prevailing conditions and circumstances.

Water Mains

The water mains to be replaced comprise mostly fibre-cement pipes, although other types of pipe material eg. cast-iron, HDPE, etc. may be encountered. Pipe sizes range from 75 mm diameter up to 500 mm nominal diameters.

A method statement will be needed where replacement is required for pipe diameters larger than 300mm diameter or for all complex projects and should be approved by the employer's representative before any work commences. A method statement that is not accepted by the Employer's Agent will be rejected and the contractor will be required to amend and re-submit the method statement for approval.

2.2 Interpretations

2.2.1 Application

This specifications document is a legal compliance document drawn up in terms of the OHS Act and are therefore binding. The document must be read in conjunction with other relevant legislation.
A principal contractor shall, as a minimum, comply with:

- The Occupational Health and Safety Act and Regulations (Act 85 of 1993) ("OHS Act")
- The Compensation for Occupational Injuries and Diseases Act (Act 130 of 1993 ("COIDA")
- The National Qualification Framework Act, 2000 (Act No.67 of 2000)
- The National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977), and promulgated by Government Notice No. R. 2378 of 30 July 1990, as amended by Government Notices No's R. 432 of 8 March 1991, R. 919 of 30 July 1999 and R. 547 of 30 May 2008;
- (The Engineering Profession Act, 2000 (Act No. 46 of 2000)
- Road Traffic Management Act (Act No. 20 of 1999)

2.2.2 Definitions

The definitions as listed in Section 1.5 shall apply.

2.3 Minimum Administrative Requirements

2.3.1 Notification of Intention to Commence Construction Work

The Principal Contractor must notify the Provincial Director of the Department of Labour in writing before construction work commences.
A copy of this notification must be held in the Principal Contractor's health & safety file on site. The email transmission will serve as proof of notification.

2.3.2 Assignment of the Principal Contractor's / Contractors' Responsible Persons to Supervise Health and Safety on Site

The Principal Contractor and all Contractors must make supervisory appointments, as per CR 8, as well as other relevant appointments in writing (as stipulated by the OHSA and Construction Regulations 2014).

Client will ensure that the Principal Contractor, is appointed in terms of Construction Regulation 5(1)(k), implements, and maintains the agreed and approved OH&S Plan.

The Chief Executive Officer of the Principal Contractor in terms of Section 16 (1) of the Act, or his delegate in terms of Sect 16(2) of the OHS Act, must ensure that his Employees (as defined in the Act) complies with the Act. Legal Compliance Audits must be used for this purpose.

The Construction Manager, Assistant Construction Manager, Supervisor and Assistant Construction Supervisor/s appointed in terms of Construction Regulation 8. Contractor must provide proof of OHS training and employees must fully understand their duties and responsibilities outlined by the respective appointments. Must be provided in the H&S plan submission by the contractor.

2.3.3 Competence of the Principal Contractor's / Contractors' Appointed Competent Persons

The Principal Contractor's and all Contractors' competent persons for the various risk management portfolios must fulfill the criteria as stipulated under the definition of 'Competent' in accordance with the Construction Regulations (February 2014). Construction Health and Safety Officer (CHSO)

- **The PRINCIPAL CONTRACTOR shall employ at least one Part Time and competent, CHSO for the duration of the contract that is registered with the SACPCMP. The CHSO's CV and SACPCMP registration certificate is to be submitted for approval by the H&S Agent or the Client.**

The PRINCIPAL CONTRACTOR is to ensure adequate resources are provided in order to undertake all responsibilities (i.e. mobile phone, computer and internet access, etc.).

This person may not hold any other position on the site staff. The site supervisor may not act as the CHSO. The CHSO appointed for the project will be held responsible for all H&S on the project.

Senior site staff and supervision, Contractors are to follow systems, instructions etc. given by the CHSO at all times;

No new workers or Contractors may commence work without approval of H&S plan as submitted.

No inductions of any Contractors' staff until the H&S documentation is approved by the CHSO, and The CHSO may not be removed or replaced without the approval of the H&S Agent, nor may the site be left unattended without adequate, competent Supervision.

The appointed CHSO to forward a corrective action report within 3 working days after the OHS Audit. The appointed CHSO shall attend at least one Audit per month.

The appointed CHSO shall forward a Corrective & Preventative Action Report following work stoppage / issuing of a non-compliance Report as soon as possible, but not later than 3 working days from the non-compliance / work stoppage report.

The CHSO will be responsible for collating the H&S documentation at the close out of the project in electronic format, properly labeled and filed.

Failure to do so will be considered a serious offence and penalties applied as per **Penalty Table on page 27 and 28 in the OHS specification.** Failure could also result in retentions or project certification not being issued to the PRINCIPAL CONTRACTOR.

The contractor shall note that the list below it is a generic list only and is intended for use as a guideline to ensure all legal appointments is done as required:

- **An Organogram with all appointed persons names, surnames and telephone numbers is to be included in the Health and Safety plan.**

Appointment	Ref. Section/Regulation in OHS Act
Construction Manager	Construction Regulation 8(1)
Construction Manager (Alternate)	Construction Regulation 8(1)
Assistant Construction Manager	Construction Regulation 8(2)
Construction Supervisors	Construction Regulation 8(7)
Assistant Construction Supervisors	Construction Regulation 8(8)
Construction Vehicle and Mobile Plant Inspector	Construction Regulation 23(1)(k)
Construction Vehicle and Mobile Plant Operator	Construction Regulation 12(1)(d)
Emergency/Fire Coordinator	Construction Regulation 29
First Aider	General Safety Regulation 3(4)
Fire Equipment Inspector	Construction Regulation 29(h)
Hazardous Chemical Agent Supervisor	HCA Regulations
Incident Investigator	General Administrative Regulations 9(2)
Excavation Supervisor	Construction Regulation 13(1)(a)
Ladder Inspector (Designated)	General Safety Regulations 13A
Lifting Machine Operator	Driven Machinery Regulation 18(11)
Lifting Machine and Lifting Tackle Inspectors	Driven Machinery Regulation 18(5)
OH&S Officer (Part time)	Construction Regulation 8(5)
*In terms of Construction Regulation 8(5) and the project's Risk Profile Evaluation, **The Client** requires the Principal Contractor to appoint a **Part Time CHSO** that visits the project **at least four (4 times) per month &** working on the project during each visit and provide the required proof of competency. The CHSO must be registered with and provide a registration letter from the **SACPRINCIPAL CONTRACTORMP** in compliance to the requirements of Construction Regulation 8(6).*	
Traffic Safety Officer (Part time)	Construction Regulation
The client requires that the principal contractor appoint sufficient competent traffic safety officer/s to ensure that there is always at least one responsible person on site that traffic accommodation measures are being managed and controlled. Such appointments shall be in writing and clearly state the responsibilities and period for which the appointment is made. The principal contractor shall submit the details of each appointee in terms of this clause to the employer's agent prior to the appointment.	
Where the Principal Contractor employs more than 20 persons (including the employees of Contractors) he shall appoint one OH&S Representative for every 50 employees or part thereof. OHS Act Sec. 17(2) and GAR 6, requires that the appointment OR election and subsequent designation of OH&S Representatives is executed in consultation with Employee Representatives or Employees. OH&S Representatives to be designated in writing and designation must include the area of responsibility of the appointee and term of the designation. Duties and functions of the OH&S Representatives shall be as contained in Section 18 of the OHS Act.	
Stacking and Storage Supervisor	Construction Regulation 28(a)

2.3.4 Compensation for Occupational Injuries and Diseases Act 130 of 1993 (COIDA)

The Principal Contractor must have in its possession a letter of good standing from its Compensation assuror as proof of registration. Contractors must also hold proof of the workman's compensation

assurance registration in the form of a letter of good standing and forward a copy to the Principal Contractor **before** they begin work on site.

2.3.5 Preliminary Hazard Identification and Risk Assessments and Progress Hazard Identification and Risk Assessments

The Principal Contractor must cause a hazard identification to be performed by a competent person before commencement of Laying-Water-Mains-Fire-Hydrants. The assessed risks, together with written safe work procedures for the 'high-risk' rated activities, must form part of the construction phase health and safety plan submitted for approval by the Client. The risk assessments must include:

a) A list of hazards identified as well as potentially hazardous tasks;

b) Documented risk assessments based on the list of hazards, method statements and tasks;

c) A set of safe work procedures aimed to eliminate, reduce and/or control the risks assessed;

d) A monitoring and review procedure of the risk assessments as they change.

The Principal Contractor must ensure that all Contractors inform, instruct, and train their workers regarding any hazards, associated risks, and related safe work procedures before any work commences and thereafter at regular intervals as the risks change and as new risks develop.
This training should be carried out in the form of toolbox health & safety talks. Contractors must conduct their own toolbox talks and submit proof of these talks in the form of attendance registers to the Principal Contractor at least every two weeks. Every worker on site must undergo such a toolbox safety talk at least once a week with the attendance registers kept in the Principal Contractor's safety file.

2.3.6 General Record Keeping

The Principal Contractor and all Contractors must keep and maintain Health and Safety records to demonstrate compliance with these Specification, with the OHS Act 85/1993, and with the Construction Regulations (February 2014). The Principal Contractor must also ensure that all records of incidents/injuries, emergency procedures, training, planned maintenance inspections, monthly contractor audits, etc. are **kept in the health & safety file(s) held in the site office.**

The Principal Contractor must ensure that every Contractor keeps its own health & safety file, maintains the file, and makes it available on request (the file must include the Contractor's health & safety plan). Such Contractor safety files must be audited by the Principal Contractor on a monthly basis with audit reports kept.

The documentation submitted and approved following the awarding of the contract will be used to form the H&S file. The H&S file is required to be laid out in a logical manner, and documentation filed within the file is to be easily accessible. **NB: Health & Safety File index to be included in HSE Plan**
The following completed information shall be included (but not be limited to) as part of the index
(Does not have to be in the specific sequence)

OHS & COVID 19 MANAGEMENT SYSTEM INDEX

1. Site Visitor Register
2. First aid treatment / Accident Forms
3. Emergency Numbers & Procedures (All Emergencies)
4. Hazardous Chemical Agents
5. Inspection Registers
6. OHS & Induction & Weekly Toolbox Talks
7. Safe Work Procedures & Risk Assessments
8. Client Provided OHS Requirements & Approval Documents
9. Plan Job Observations / DSTI's
10. Legal Appointments
11. OHS Management Plan
12. Traffic Management Plan
13. OHS & Covid 19 Policies
14. OHS Inspection and Audit Reports
15. Contractors
16. Health & Safe & Covid 19 Rules
17. Id's & Medicals
18. Applicable OHS Legislations
19. Notification of Construction

2.3.7 Injury / Incident Reporting and Investigation

Injuries are to be categorised into first aid; medical; disabling (lost day); and reportable. When reporting injuries to the Client, these categories must be used. **The Principal Contractor must investigate all injuries, with an annexure 1 report being completed for each injury. All Contractors must report on the 4 categories of injuries to the Principal Contractor at least monthly.** Contractors must investigate injuries and incidents involving their employees and forward a copy of the annexure 1 investigation report to the Principal Contractor forthwith. The Principal Contractor must report all injuries to the Client in the form of an injury report (spreadsheet), at least monthly.

- **All incidents reportable in terms of the provisions of Section 24 of the OHS Act, 1993 must be reported to the local Dept. of Labour in the prescribed manner. The client needs to receive conformation that this was done.**

2.3.8 Consolidation of Health & Safety Documentation

It is the duty of the Principal Contractor to ensure that all documentation that was required to be kept or generated during the construction process, be consolidated into one set of documents that must be handed over to the Client upon completion.

2.4 Principal Contractors, Contractors, and Contractors

2.4.1 Principal Contractor's and Contractors' Requirements

The Principal Contractor must ensure that all Contractors appointed by them comply with these Specifications as well as the OHS Act, Construction Regulations (February 2014), and other relevant legislation that may relate to the activities directly or indirectly. The Contractor, when appointing other Contractors as 'Contractors', shall mutatis mutandis ensure compliance as if it was the Principal Contractor.

The Principal Contractor may only allow a Contractor to begin work on site after approving the Contractor's health & safety plan. The Principal Contractor must audit each of its contractors on a monthly basis, with audit reports filed in the health & safety file on site. The audit should include an administrative assessment as well as a physical inspection of the contractor's site activities.

- **The Principal Contractor must stop any Contractor from carrying out Laying-Water-Mains-Fire-Hydrants that is not in accordance with the Principal Contractor's and/or Contractor's health & safety plan or if there is an immediate threat to the health and safety of persons.**

    - The Principal Contractor shall take all reasonable steps necessary to ensure co-operation between all contractors to enable each of those contractors to comply with the provisions of these regulations;
    - The Principal Contractor shall take all reasonable steps to ensure that each contractor's health and safety plan is implemented and maintained on the construction site: Provided that the steps taken shall include periodic audits at intervals mutually agreed upon between the Principal Contractor and contractors, but al least once every month;
    - The Principal Contractor must ensure that where changes are brought about to the design and construction, that sufficient health and safety information and appropriate resources are made available to contractors so as to allow them to execute the work safely
    - The Principal Contractor must ensure that every contractor is registered and in good standing with a recognised compensation fund or with a licensed compensation insurer prior to work commencing on site;
    - The Principal Contractor must ensure that potential contractors submitting tenders have made provision for the cost of health and safety measures during the construction process;
    - The Principal Contractor shall discuss and negotiate with the contractor the contents of the health and safety plan and shall finally approve that plan for implementation.
    - The Principal Contractor shall hand over a consolidated health and safety file to the client upon completion of the Laying-Water-Mains-Fire-Hydrants and shall include a record of all drawings, designs, materials used and other similar information concerning the completed structure.
    - The Principal Contractor may only appoint a contractor to perform Laying-Water-Mains-Fire-Hydrants unless the Principal Contractor is reasonably satisfied that the contractor he or she intends to appoint, has the necessary competencies and resources to perform the Laying-Water-Mains-Fire-Hydrants safely.

2.5 Client identified Hazards and Potentially Hazardous Situations

2.5.1 Client identified Hazards.

Please refer to Annexure D for the Client's Baseline Risk Assessment.

2.5.2 Unforeseeable Hazards

The Principal Contractor must immediately notify other Contractors as well as the Client, in writing, of any hazardous or potentially hazardous situations that may arise during the performance of construction activities so that the necessary precautions may be taken.

2.5.3 Visibility Hazards

The Principal Contractor shall ensure that all the following requirements are adhered to when working in low or minor visibility – Mist and rain can influence employee visibility and make it difficult for motor vehicle drivers to see them.

- Employees to wear reflective vests.
- Reflective cones to be used to separate traffic from employees.
- Employees to be trained to be aware of traffic.
- Flag person to control traffic when employees are working close to the road.
- Employees to all have valid Annexure 3 Medicals – To be done by an Occupational Health Practitioner.
- Construction vehicles to have amber lights and the required signage to indicate to public road works ahead and to ensure the vehicles are visible.
- Prevent entering the street when visibility is low due to drivers not seeing employees working in the road due to lack of visibility.

2.6 Site Operational Requirements

2.6.1 Health and Safety Representative(s)

The Principal Contractor and all Contractors must ensure that Health and Safety Representative(s) are appointed under consultation with the employees and trained/informed to carry out their functions. The appointments must be in writing. The Health and Safety Representatives could carry out monthly inspections, keep records and report all findings to the Responsible Person or safety officer forthwith and at monthly health & safety meetings. At least one Health & safety representative is required by all Employers. (Appoint one for the first 20 employees and an additional one for each group of up to 50 employees on site).

2.6.2 Health and Safety Training

2.6.2.1 Induction

The Principal Contractor must ensure that all site personnel undergo a site-specific health &safety induction training session before any worker starts work. A record of attendance shall be kept in the health & safety file. **The Principal Contractor will be required to induct all contractors' employees.**

2.6.2.2 Awareness

The Principal Contractor must ensure that, on site, periodic toolbox health & safety talks take place at least once a week. These talks should deal with risks relevant to the Laying-Water-Mains-Fire-Hydrants

at hand. Records of attendance must be kept in the health & safety file.

2.6.3 Health and Safety Audits, Monitoring and Reporting

The Principal Contractor is obligated to conduct monthly audits on all Contractors appointed by it and keep audit reports in its health & safety file. Contractors have to audit their Contractors and keep records of these audits in their health and safety files, made available on request. The Client/Agent will conduct a minimum of two monthly site visits. One inspection and one audit on the Principal Contractor's safety management plan every month.

2.6.4 Emergency Procedures

The Principal Contractor must prepare a detailed Emergency Procedure/Evacuation Plan prior to commencement on site. The procedure/plan must take into consideration the risks and potential incidents posed by work to be carried out on this project. The Principal Contractor must take into account any emergency contingency requirements as set out in 639-SW-L-DP7149-23-24-Term-Tender-Laying-Water-Mains-Fire-Hydrants evacuation plan**.** The Procedure must detail the response plan including the following key elements:

- List of key competent personnel;
- Details of emergency services;
- Actions or steps to be taken in the event of the specific types of emergencies i.e. fire, possible structural collapse, chemical spill, etc;

Emergency procedure(s) shall include, but shall not be limited to:

- Employees suffering from dehydration, sun stroke or exposure
- Criminal and hostage situations
- Dealing with accidents involving third party vehicles or individuals
- Dealing with spillages or petrochemical, toxic or hazardous materials
- Employees bitten or stung by snakes, spiders, scorpions, insects or animals
- Performing necessary operations under poor visibility conditions
- Employees involved in accidents or incidents requiring medical attention
- Performing necessary operations during fires
- Protest Actions and/or Political/Community unrest

The Principal Contractor must advise the Client in writing forthwith, of any emergency situations, together with a record of action taken/action to be taken. A contact list of all service providers (Fire Department, Ambulance, Police, Medical and Hospital, etc.) must be maintained and posted up on site.

2.6.5 First Aid Boxes and First Aid Equipment

The Principal Contractor must appoint at least one First Aider who must be certificated. Copies of valid certificates are to be kept on site. **The Principal Contractor must provide at least 1 (one) first aid box, adequately always stocked.** All Contractors with more than 5 employees shall supply their own first aid box. Contractors with more than 10 employees must have their own trained, certified first aider on site at all times.

2.6.6 Personal Protective Equipment (PPE) and Clothing

The Principal Contractor and Contractors must ensure that all site workers are issued with and wear the appropriate PPE as indicated in their risk assessments. The Principal Contractor and Contractors must make provision and keep adequate quantities of SABS approved PPE on site at all times according to their risk assessments. The Principal Contractor must supply visitor reflective vest to be held in the site office. The above procedure applies to Contractors and their Contractors, as they are all Employers in their own right and must therefore supply their own PPE.

- Reflective vest to be worn by all people on site without exception.
- Steel to cap shoes to be worn by all employees on site.

Every Contractor is responsible for supplying the necessary PPE to its own employees. **Labour Only Contractors appointed by the Principal Contractor become the responsibility of the Principal Contractor unless otherwise instructed.**

2.6.7 Occupational Health and Safety (OHS) Signage

The Principal Contractor must provide adequate on-site OHS signage. Including but not limited to: 'no unauthorized entry', 'report to site office', direction to site office, 'beware of overhead work', 'hard hat area' – to be posted up at all site entrances.

Certain signs may also be required to be posted up on site in strategic locations e.g. access routes, stairways, entrances to structures and buildings, scaffolding, and other potential risk areas / operations such as **exposed edges and openings and trenches/excavations** where persons are at work.
All signage is to be in accordance with the Traffic Management Plan.

Health & safety signage must be well maintained including Daily inspections, cleaning, replacement, and repair.

2.6.8 Public and Site Visitor Health & Safety

All site personnel must be inducted into the site safety procedures on the day they begin work on site. This includes all contractors. This is the duty of the Principal Contractor.

The road surface of all public and private roadways and pavements/pedestrian walkways must remain in a reasonably clean state, free of excessive sand, stone, water or other construction road resurfacing related materials that may negatively impact such surface.

The principal contractor to take all necessary steps to ensure no entry is possible outside of working hours as well. Therefor make the necessary security arrangements.

The principal contractor shall develop and implement a Method Statement on how the site will be effectively secured from entry by any person from the public & especially, specifically children. Orange Netting to be used as a minimum where there are exposed materials.

The contractor is to also synchronize lunch times when working Infront of the entrances/driveways of the residents and the spaza shops. The Principal Contractor to also have additional flag personnel available. The Client will approve these methods. The Method Statement can form part of the Principal Contractors H&S Plan.

2.6.9 Medical Certificates

All employees to have valid medical certificate of fitness specific to the work activities to be performed and issued by an occupational health practitioner in the form of Annexure 3.

Hepatitis B injections for all employees is needed.

2.7 Physical Requirements

2.7.1 Deliveries, Waste Removal, Stacking/Storage of Materials

The Principal Contractor and other relevant contractors must ensure that there is a designated stacking supervisor and all materials, and all equipment is stacked and stored safely, on level, compact ground, out of access ways and no more than three times the minimum base width in height. No construction materials or equipment may be stacked or stored in public areas unless authorised by the client and fenced off as per the client's requirements. Waste materials must be kept within designated construction zones. The Principal Contractor will be responsible for co-ordinating and managing this function.

2.7.2 Fire Extinguishers and Fire Fighting Equipment

The Principal Contractor and relevant Contractors shall provide adequate, regularly services firefighting equipment located at strategic points on site, specific to the classes of fire likely to occur. The appropriate notices and signs must be posted up as required. A minimum of **one 9kg dry chemical powder fire extinguishers must be available in and around the site office establishment and stores.** Wherever *'hot work' is taking place, additional fire extinguishers must be on hand. Contractors are responsible for ensuring compliance with hot work procedures and must be in possession of method statements detailing the safe working procedures.

***'Hot work'** includes all work that generates a spark or flame and may therefore result in a fire.

There are combustible materials on site - The Principal Contractor to implement a hot works permit system for all hot work activities on site. A fire watch person to be appointed during high fire / explosion Risk activities. Principal Contractor to designate a smoking area away from fire risk areas.

2.7.3 Fall Protection / Working in elevated positions.

Working at heights includes any work that takes place in an elevated position. The Principal Contractor must submit a risk-specific fall protection plan in accordance with the Construction Regulations (February 2014) before this work is undertaken.

Working in elevated positions requires the preparation of a fall protection plan. The plan must include all relevant fall related risk assessment and method statements / safe work procedures. **All persons working in elevated positions must be evaluated for physical and psychological fitness. Principal Contractor must show its methodology in this regard.**

All persons working in elevated positions must be informed of the risks and safety measures (in other words all workers must be trained on the fall protection plan, in the form of a toolbox safety talk) and records of this training/information session must be kept on site.

Work from elevated positions may only be conducted as if it were being conducted from a safe ladder.

2.7.4 Excavations, Earthworks, Sloping, Dewatering or Drainage

The Principal Contractor shall ensure that for all activities involving excavations, sloping, dewatering or drainage, a safe working procedure is submitted to the Engineer for approval prior to work commencing.

The Principal Contractor and relevant contractors shall make provision in its tenders for the shoring of excavations where conditions warrant it or should shoring not be possible or cut back the excavation to a safe angle / termed the safe angle of repose. The consulting civil engineer on this project must specify a safe angle of repose for the bulk excavation. The earthworks contractor must ensure that the necessary drawings/designs are made available to this effect.

Due to the work being an emergency project, there has been no engineer / Geo-technical report for the soil conditions all work order are to be giver in writing by the appointed competent excavation supervisor.

Where uncertainty pertaining to the stability of the ground conditions exists, the decision of a professional engineer or professional technologist competent in excavations shall be decisive. Such permission must be in writing and must be available site.

2.7.5 Confined Space Work

The Principal Contractor shall ensure that for all activities involving confined space work, has a safe working procedure and is submitted for approval prior to work commencing. Note, that all the necessary procedures to be followed & the work is to be done by competent personnel with all available equipment.

What is Confined space: confined space is an enclosed area where there is a risk of death or dangerous injury from hazardous substances or dangerous conditions.

- **It is the duty of the principal contractor to ensure that:**

  - The atmosphere within the confined space is tested before entry to ensure that it is safe to enter.
  - Adequate ventilation is provided to ensure that there is sufficient oxygen within the confined space.
  - The atmosphere within the confined space is tested before entry to ensure that it is safe to enter.
  - Adequate ventilation is provided to ensure that any gases, fumes, or vapours are removed from the confined space.
  - Any drainage systems are checked and cleared before entry.
  - Adequate drainage systems are provided to prevent flooding.
  - Adequate supervision is provided to ensure that workers are not exposed to dangerous conditions.
  - All workers are trained and competent in confined space entry and emergency procedures.
  - Employees have the necessary personal protective equipment (PPE) and have hepatitis B injections.

2.8 Plant, Machinery, and Equipment

2.8.1 Hired Plant and Machinery

The Principal Contractor shall ensure that any hired plant and machinery used on site is safe for use and complies with the minimum legislated requirements.

- The Principal Contractor will ensure that all relevant operators have undergone pre-medical testing and are certified fit.
- The Principal Contractor shall ensure that all construction plants moving parts are adequately protected.
- Pre-start inspections shall be conducted daily on all motorized equipment; deviations of such inspections shall be recorded.
- A trained and authorized operator, who will be appointed accordingly, shall operate the construction plant identified for use.
- Competency Certification and Medical Certification, for both employed and hired operators will be maintained in the H&S File
- All construction plants shall be operated under the direct supervision of a person competent to identify potential hazards in the work being conducted.
- Work involving the use of a construction plant shall be conducted in accordance with an approved Hazard Identification Risk Assessment.
- The Principal Contractor shall ensure all operators are equipped with the necessary PPE.
- Drivers to be vigilant for rainy days and accumulating of mud on the dirt road.
- Competent Flagman to be in front and in the back of the Mobile Plant.

2.8.2 General Machinery

The Principal Contractor and Relevant contractors must ensure compliance with the Driven Machinery Regulations, which include carrying out risk assessments on the machines, inspecting machinery regularly, appointing a competent person to inspect and ensure maintenance, issuing PPE and relevant clothing, and training those who use machinery.

2.8.3 Portable Electrical Tools

All Portable electrical tools to be in a good working condition & inspected daily.

2.8.4 Hand Tools

The contractor to ensure all hand tools is in a good working condition and inspected before and after use.

2.8.5 Existing Services

The Principal Contractor shall take into account the following existing services:

- Existing utility services;
- Existing ground and foundation conditions;
- Overhead services : illegal overhead & underground services are possible;

Where information on location of services on site is not available, The Principal Contractor site management will satisfy themselves as to services layout and condition by making reasonable enquiries of service providers, obtaining way leaves, consulting relevant information and a competent person surveying the work areas before the work starts. The information obtained from this survey will be included in information kept on site and made available to interested parties to the project.

- **Services on Site**

  All existing services should be considered as "live" and treated as such. The Principal Contractor is to ensure that all necessary steps i.e. lock-out/ tag-out protocols, are taken to prevent damages to property or injuries to persons.

- **Existing Services**

  Due to this project being in multiple locations, it is likely that telecommunication services would be present at some locations. Clearance checks will not be required during Initial stages of the contract.

- **Eskom**

  There are definitively overhead power lines present across the city. Clearance checks are to be done prior to commencing work at a specific location. This risk also to be communicated. Construction Vehicles also to take note to drive carefully as this road is in a very poor state currently.

- **Storm Water Lines**

  Storm water lines must be treated as live, and clearance checks to be done before commencing works.

2.8.6 Asbestos Work (if it becomes required)

Due to the uncertainty of knowing if any asbestos can be located during the project. Any "civil" work must be treated as there could be asbestos underground and thus should be carried out as per the requirements as set out in the Asbestos Abatement Regulations 2020.
The Contractors must ascertain with (wayleaves) whether there are any underground services, and any other products contain asbestos fibres in the area of works. The Client must then be notified, and the accepted removal procedures followed, preventing any release of asbestos fibres.
A method statement, detailing the step-by-step approach must be drawn up by the Principal Contractor or other asbestos contractor if asbestos is shown on wayleaves or discovered during excavations and submitted to the Client for approval. The plan of work shall include but not be limited to:

- The provision of safe access while working in excavations.
- The provision of suitable respiratory equipment for all asbestos workers who could be exposed to fibres.
- The control of contaminated water i.e.. Suitable filtration method to be used.
- The prevention of dry cutting or drilling, a suitable wet method must be used.
- The prevention of dry brushing of asbestos products.
- The safe disposal of asbestos waste including contaminated water.

The Principal Contractor must notify the Client immediately when asbestos pipes / material are found. The Principal Contractor must ensure that asbestos work complies with the Asbestos Regulations and the accepted safe work procedures, which must include a full risk assessment of related risks.

2.9 Occupational Health

2.9.1 Industrial Hygiene (exposure to physical and chemical stress factors)

Exposure of workers to occupational health hazards and risks is very common in any work environment, especially in construction. Occupational exposure is a major problem, and all Contractors must ensure that proper health and hygiene measures are put in place to prevent exposure to these hazards. Prevent inhalation, ingestion, and adsorption through the skin of hazardous chemical Agents.

2.9.1.1 **Noise** induced hearing loss is a highly underrated occupational condition. Occupational noise emitted by construction machinery and power tools must be controlled as far as possible by implementing engineering solutions such as noise dampening, regular maintenance, servicing and inspection, screening off the noise, and reducing the number of persons exposed. Personal protective equipment such as earmuffs and earplugs must also be used in conjunction with engineering controls so as to reduce noise exposure to below-acceptable levels.

2.9.1.2 **Ergonomics** is the study of how workers relate to their workstations. We advise the Principal Contractor and Contractors to take this into consideration when conducting risk assessments, thereby improving the worker-task relationship, which will in turn improve productivity and reduce chronic conditions such as back strains, joint problems, and mental fatigue, amongst others.

Hand-arm & whole-body vibration is evident in compaction equipment & employees should rotate &/ use kidney belts.

Ergonomic Assessments, Training material and Medical Surveillance programs to be developed as per Ergonomic Regulations.

2.9.2 Hazardous Chemical Agents (HCA)

The Principal Contractor and other relevant contractors must provide the necessary training and information as far as the use, transport, and storage of HCA. **The Principal Contractor must ensure that the use, transport, and storage of HCA are carried out as prescribed in the HCA Regulations.**

The Principal Contractor and contractors must ensure that all hazardous chemicals on site have Safety Data Sheets (SDS) on site and the users are made aware of the hazards and precautions that need to be taken when using the chemicals. The First Aiders must be made aware of the SDS's and how to treat HCA incidents appropriately. Copies of the SDS's must be kept in the first aid box and in store. All containers must be **clearly labelled**.

Flammable substances must be stored separately, away from other materials, and in a well-ventilated area (appropriate cross-ventilation). A competent person should be appointed to be in control of this portfolio.

Stores must be well-ventilated, preventing the build-up of flammable and toxic gases/vapours. Fuel storage tanks must conform to the general environmental legislation and Environmental Management Plan. The necessary safety signage must be posted up on the tanks – 'no naked flames', 'no smoking'. **One 9kg DCP fire extinguisher must be placed near fuel tanks, but not within 5m of the tanks.** These extinguishers are over and above the minimum four required for the offices and stores.

2.9.3 Transport of Workers

The Principal Contractor shall ensure that whilst working on the contract, all employees will be transported in accordance with the requirements set out in the National Road Transport Regulations, 2001, and National Road Traffic Act, 1996.

The requirements shall include but are not limited to the following:

- Personnel shall not be transported on vehicles that are already conveying other goods or tools.
- Tools, materials, and equipment are secured and separated by means of a physical barrier in order to prevent movement when transported in the same compartment with employees.
- Personnel shall not be transported in open vehicles. An adequate canopy or cover shall be provided; vehicles used to transport employees have seats firmly secured and adequate for the number of employees to be carried.
- No employees shall stand or sit on the edge of the vehicle conveying them.
- Drivers shall be appointed and in possession of a valid public driver's permit.

2.9.4 Traffic Accommodation

- A traffic management plan is to be provided by the principal contractor and agreed to by the employer's agent prior to the commencement of any activity that requires traffic accommodation measures.
- The protection of members of the public as road users, road traffic, and pedestrians must be prioritized.

2.9.5 Night Work (Before and After Normal Hours)

- The Principal Contractor must abide by the working time prescriptions set out by the Client.
- The Principal Contractor must ensure that adequate lighting is provided to allow for work to be carried out safely at all times in all areas.
- First aid facilities and supervision must be present during after-hours work.
- All construction Vehicles to be clearly visible & have adequate lighting.

2.9.6 Welfare Facilities

The Principal Contractor must supply sufficient toilets (1 toilet per 30 workers), clean, lockable changing facilities, and hand washing facilities, soap toilet paper. Waste bins must be strategically placed around site and emptied regularly.

2.9.7 Alcohol and other drugs

No alcohol and/or other drugs will be allowed on site. No person may be under the influence of alcohol or any other drugs while on the construction site. Any person on prescription medication must inform his/her superior, who shall in turn report this to the Principal Contractor forthwith. Any person suffering from any illness/condition that may have a negative effect on his/her/anyone else's health or safety performance must report this to his/her superior, who shall in turn report this to the Principal Contractor forthwith.

Any person suspected of being under the influence of alcohol or other drugs must be sent home immediately, to report back the next day for a preliminary inquiry. The Contractor concerned must follow a full disciplinary procedure and a copy of the disciplinary action must be forwarded to the Principal Contractor for its records.

2.9.8 Corrective Action & Contractor Performance Reports

The Principal Contractor is obligated to immediately attend to the OHS audit & site inspection findings & submit a Corrective Action Report within **three** working days following the report.

2.9.9 Smoking on site

Smoking is only allowed in designated smoking areas, free from any combustible material, with an ashtray available. Regular cleaning of smoking area and ashtray. **NB: No smoking is allowed in confined spaces due to gas fumes and lack of oxygen. No smoking is allowed anywhere near open fields and playgrounds of children.**

2.9.10 Covid 19 Requirements – Corona Virus

Covid-19 Awareness

- An awareness program must be implemented by the Principal Contractor pertaining to transmittable diseases such as COVID-19.
- The awareness program may include aspects such as displaying posters, washing, and personal hygiene, toolbox Talks, etc.
- A COVID19 Prevention & Emergency Response Plan must be compiled by the Principal Contractor including the latest applicable Regulations and minimum control measures as per Legislation and all personnel must be informed of the content.
- COVID-19 management and control procedures must be discussed with all personnel on project.

- **Risk Assessment and Safe Operating Procedure:**

A risk assessment will be compiled for transmittable diseases including the following:

- Identification of hazards pertaining to the disease
- Identifying the risks involved
- Evaluating these risks (evaluating in accordance with risk matrix)
- Control or Mitigation measures

- **2.9.6 Corrective Action, non-conformances & Penalties**

The Principal Contractor is obligated to immediately attend to OHS audit & site inspection findings & submit a Corrective Action Report within 3 (three) working day's following the report.

Failure to act on hazards or attend to findings may result in fees imposed on the principal contractor as set out below. All funds will go towards safety on this specific project.

PENALTY DESCRIPTION	PENALTY AMOUNT (ZAR)
Failure to submit safety documentation / rectify non-conformances by the specified deadline & writing of a corrective action report with items addressed or proof that items are being addressed.	R 500 per workday
Failure to conduct regular safety officer inspections as per schedule.	R 1,000 per inspection
Failure to provide adequate personal protective equipment (PPE) to a staff member.	R 250 per worker
Failure to address identified health or safety hazards within a reasonable timeframe.	R 500 per hazard per day
Failure to maintain valid certifications for specialized tasks.	R 2,500 per worker
Failure to maintain a clean and organized construction site.	R 500 per day
Failure to secure and barricade hazardous areas properly.	R500 per violation
Failure to maintain a clean and organized and remove debris and waste materials in a timely manner that is more than 2 weeks on-site &/ greater than 8 cubes of waste.	R 750 per occurrence
Having contractors commence on-site without the necessary OHS approval letter from the Principal Contractor.	R 1000 per occurrence
Repeat Offense Penalties.	R 1000.00 per offense
No proper signage and cones;	R 750 per occurrence
Un-roadworthy and unlicensed vehicles;	R 2,500 per vehicle
No company name on safety bibs;	R 250 per worker
Material left overnight without permission;	R500 per violation

Littering of the site and surrounds;	R 500 per day

Burying waste on site and surrounds;	R 750 per occurrence
Not using the proper ablution facilities;	R 500 per day
Spillage onto the ground of oil, diesel, etc;	R500 per violation
Illegal dumping of material removed from the sewer pipelines;	R 1000.00 per offense
Washing excessive material downstream.	R 1000.00 per offense

PRIMARY HEALTH AND SAFETY COMPLIANCE

PROJECT: 639-SW-L-DP7149-23-24-Term-Tender-Laying-Water-Mains-Fire-Hydrants

ANNEXURE A

The Principal Contractor and Contractors must comply with but not be limited to the requirements tabled below: Prove compliance with Annexure 'C' at audits conducted by the CHSM.

The Principal Contractor and Contractors must submit compliance with Annexure 'A' **before any works can start** from receiving this Health & Safety Specification. **Compliance with Annexure 'A' must be maintained and proven to the Safety Manager.**

1. Valid letter of good standing with the compensation commissioner
2. Annexure 2 - Notification to Department of Employment & Labour with proof that it was submitted.
3. Site Specific Health & Safety Plan based on Health & Safety Specification
4. Fall Protection Plan (Fall From, Off or Into) with competency of Fall Protection Plan Developer.
5. Signed Risk Assessment and Method Statement
6. Appointment & Competency for the Risk Assessor & H&S Officer (SACPCMP registration certificate to be attached)
7. Appointment & Competency for the Traffic Safety Officer
8. Traffic Management Plan + Signoff by traffic department / Project Manager
9. Signed 37.2 mandatary agreement between Principal Contractor & Client

GENERAL COMPLIANCE REQUIREMENTS

ANNEXURE B

The Principal Contractor and Contractors must comply with but not be limited to the requirements tabled below: Prove compliance with Annexure 'C' at audits conducted by the Client.

Item	What	When	Output
1.	Construction phase Health & Safety Plan	Monthly review	Principal Contractor to indicate the status the status of Contractors' health & safety plans.
2.	Health & Safety File(s)	Open file when construction begins and maintain throughout.	Have a file on hand at audits. Contractors to report on their file at monthly health & safety audits by the Principal Contractor.
3.	Traffic Management Plan	Weekly	Principal Contractor to indicate the status the status of Contractors' traffic management plans.
4.	Induction training	Every worker before he/she starts work.	Attendance registers to be kept.
5.	Awareness Training (Toolbox Talks)	At least weekly.	Attendance registers to be kept.
6.	Audits on Contractors by the Contractors	Monthly or as often as required.	Report covering • H&S File/Plan • WCA status • Appointment letters • Section 37(2) agreements • Risk assessment and method statement • Physical site inspection • Any other contractor specific requirements
7.	Emergency procedures	Monthly evaluation of procedure	Compile written procedure as well as tel. numbers.
8.	Risk assessments & fall protection plan	Updated and signed off at least monthly.	Documented risk assessments to be available
9.	Method statements i.e. demolition work; roof work; etc.	Drawn up and distributed before workers are exposed to the risks.	Documented set of safe work procedures (method statements) reviewed and signed off.
10.	General Inspections	Daily	Report OHS Act compliance: • Portable electrical tools
11.	General Inspections	Weekly	• Scaffolding • Temporary Electrical Installations
12.	General Inspections	Monthly	• Firefighting equipment • Ladders

13.	List of contractors	List to be updated weekly	Compile a list of Contractors: Name, supervisor, company tel. numbers and trade.

ANNEXURE **C**

PROJECT: 639-SW-L-DP7149-23-24-Term-Tender-Laying-Water-Mains-Fire-Hydrants

Acknowledgement of receipt:

I, _____representing

_____Principal Contractor

have received the Health and Safety Specifications in good order and shall ensure that we comply with all requirements in respect thereof. This document is legally binding in terms of Regulation 5(1)(k) of the Construction Regulations (2014).

_____ _____

Signature of Principal Contractor Date

_____ _____

Signature of Client / Client Agent Date

BASELINE RISK ASSESSMENT

ANNEXURE **D**

Item No	Conditions / Activities on site	Hazard / Dangers	Risks to Health or Safety	Control Measures	Risk Rating
1.	Land Survey	• Heat Exhaustion • Snakes • Insects (spiders etc) • Unstable Rock Faces • Construction Hazards	• Employees can get heatstroke • Snake bites • Insect bites • Trip and Fall hazards • Body injuries to feet	• Employees to ensure they hydrate often • Employees to ensure they are aware of the emergency procedure when encountering a snake or insect • Employees to be aware of their surroundings	Medium
2.	Land use Adjacent to project	• Increased foot traffic across or next to the site • Children playing on or close to the site **As seen in inspection & photo's.**	• Injury to children or people from the public	• Proper segregation of Laying-Water-Mains-Fire-Hydrants from other land users • Signage indicating dangers of entering the site • Proper installation of barricades	High
3.	Boundary and access control/public liability exposure	• Members of the public entering the site • Members of public getting injured • Civil claims against Principal Contractor	• Members can walk under overhead work and falling objects can injure members heads or other body part	• The construction site must be suitably and sufficiently fenced off with orange netting standing 1 meter high in an upright position. • Provide a controlled access point to prevent the unauthorized entry of persons • Appoint additional flag personnel for every vehicle. • **Refer to "Public and Site Visitor Health & Safety" in OHS Specification for control measures**	High
4.	Lighting on the site	• Insufficient luminance to work in • Employees difficult see due to low lighting	• Time loss due to lighting • Employee can be stuck by plant due to lack of visibility	• Management to ensure there is sufficient lighting for the employees to work in • Supervisor to ensure employees wear reflective vests.	High

Item No	Conditions / Activities on site	Hazard / Dangers	Risks to Health or Safety	Control Measures	Risk Rating
5.	Night Work	• Traffic & Mobile Plant	• Fatality due to an accident with traffic vehicles or mobile plant	• The Principal Contractor must abide by the working time prescriptions set out by the Client. • The Principal Contractor must ensure that adequate lighting is provided to allow for work to be carried out safely at all times in all areas. • First aid facilities and supervision must be present during after-hours work. • All construction Vehicles to be clearly visible & have adequate lighting. • **Refer to "Night Work (Before and After Normal Hours)" in OHS Specification for control measures**	High
6.	Driving to the sites	• Unsafe road conditions • Un-road worthy vehicles • Unsecured material • Incompetent drivers • Alcohol use by driver • Inclement weather • Speeding	• Injuries • Property Damage • Third Party Liability	• Adherence to the speed limit • Only competent/ authorized drivers should operate the vehicle • Inspection of vehicles • Equipment and material to be properly secured	Medium
7.	Induction Training and Task specific training	• Workers not informed of tasks and hazards. • Workers arriving late for work. • Unknown hazards not identified. • Workers exposed to unknown hazards • Sub-standard housekeeping	• Occupational diseases • Multiple injuries • Disablement • Fatality • Property damage • Project interruption • Financial loss • Legal liability claims	• Attendance Registers to be Completed. • Supervision	Low

Item No	Conditions / Activities on site	Hazard / Dangers	Risks to Health or Safety	Control Measures	Risk Rating
8.	General arriving & working on site	• Overhead electrical services	• Electrocution due to contact with overhead electrical services	• Clearance checks to be done daily for overhead services. • No equipment that is able to reach the overhead services to conduct any operation underneath or close to any existing overhead line. • Checks to be included in DSTI's	High
9.	Crime	• Workers are robbed with weapons • Gang activity	• Bodily harm due to being robbed • Medical cost due to injury sustained	• Hoarding, signage, and access control for demolition area • Trained first aiders on site • Induction training to be conducted and • High Crime areas will force the use of security guards • **Refer to "Crime Statistics" in OHS Specification**	High
10.	Dissatisfied Labourers	• Worker's strike • Threatening of employees	• Employees can damage company materials • Time loss cost due to employees refusing to work	• Keep workers safe at all times • Ensure sufficient breaks are provided • Principal contractor to be aware of weather conditions that can cause workers to become dissatisfied with the conditions • **Refer to "Public and Site Visitor Health & Safety" in OHS Specification for control measures**	Low
11.	Confined Spaces	• Fumes in confined spaces	• Employee can become dizzy • Employee can lose track of time • Medical cost to suffocation • Suffocation of employee	• Ensure that confined space is sufficiently ventilated • Wear personal protective equipment such as proper masks if air supply is insufficient or not of sufficient quality • Test oxygen levels in a confined space to ensure that is safe for entry • Ensure that emergency procedures in place • Refer to "Public and Site Visitor Health & Safety" in OHS Specification for control measures	Medium

Item No	Conditions / Activities on site	Hazard / Dangers	Risks to Health or Safety	Control Measures	Risk Rating
12.	Working in Contaminated Land	• Inhalation of toxic vapors • Contact with toxic solids	• Medical cost to inhalation of toxic vapors • Employee can become unconscious due to vapors • Employee can become ill due to toxic solids • Time loss	• Wear personal protective equipment such as proper masks if air supply insufficient or not of sufficient quality • Test oxygen levels to ensure that it is safe for entry • Ensure that emergency procedures in place • Only use trained and competent employees Specific advice to be sought from safety advisor	Low
13.	Exposure to Dust	• Breathing in dust can cause long-term health problems	• Medical cost to inhalation of exposure to dust for extended periods of time	• Wear respiratory protection • Dampen down and minimize dust where possible Make use of environmentally friendly methods to minimize dust kick-up, use bale straw and spread over the area to prevent wind kick-up	Low
14.	Exposure to Noise	• Noise can damage permanently hearing	• Hearing loss due to extended exposure to noise	• Wear hearing protection • Have machinery tested to establish the exposure to noise levels so that proper protection can be issued • Induct employees on hearing loss before they are exposed to high levels of noise • **Refer to "Industrial Hygiene (exposure to physical and chemical stress factors) - noise" in OHS Specification for control measures**	Low
15.	Exposure to vibrations	• Exposure to whole-body vibration	• Causing kidney failure	• Proper PPE must be warn • Employees exposed to vibration must receive induction on using their PPE • **Refer to "Industrial Hygiene (exposure to physical and chemical stress factors) - Vibration" in OHS Specification for control measures**	Low

Item No	Conditions / Activities on site	Hazard / Dangers	Risks to Health or Safety	Control Measures	Risk Rating
16.	Use and storage of flammable liquids	• Uncontrolled & incorrect storage of flammable liquids	• Serious injury to employees Burns • Property damage Explosions • Fire	• Flammable substances to be stored in an appropriate flammable store which is well ventilated and a reasonably fire resistant container, cage or room and kept locked with proper access control measures in place • Material Safety Data Sheets to be in safety file • No smoking, and no heat/ignition close to or at sources • Employees to be made aware of dangers • Signage to be brought on to indicate dangers • **Refer to "Hazardous Chemical Agents (HCA)" in OHS Specification for control measures**	Medium
17.	Littering & Self-made fires	• Employees littering on-site & self-made fires	• Injuries to workers, pedestrians, residents, road users, damage to property through fire	• No littering on site which could become fire hazard, maintain site in clean condition • No fires to be lit on site. Have a working fire extinguisher at hand at all times • No smoking or naked flame near flammable substances or in unauthorized areas • Ensure proper storage/use of Petrol/diesel/flammable substances – post warning notices	Low
18.	Hand tools	• Continues use of hand tools • Hand tools not inspected	• Impact with the tool that can cause injury to hand • Damaged tool can cause injury to employee's hand	• Ensure: Tool is correct for job • Tool is in good order and suitably sharp Personnel must be competent/instructed in tool usage and tool safely • Lighting is sufficient • Operative is wearing all necessary PPE	Low

Item No	Conditions / Activities on site	Hazard / Dangers	Risks to Health or Safety	Control Measures	Risk Rating
19.	Hazardous Chemical Agents, use and storage	• Injuries to workers through use and exposure to hazardous substances • Hazardous chemicals not labeled in containers correctly	• Ingestion of hazardous chemicals can cause employee to become ill • Inhalation of hazardous chemicals can cause employee to become ill	• Use substances in accordance with data sheet, particularly reference protective clothing required (example: gloves, goggles, etc) • Know what First Aid measures are • Have employees' facilities available for washing of hands, etc • **Refer to "Hazardous Chemical Agents (HCA)" in OHS Specification for control measures**	Medium
20.	Environmental Risks	• Snakes • Bee's • Dog's • Spiders • Cows • sheep • Goats	• Employee can come in contact with a poisonous snake and can cause bodily harm or even death • Allergic reaction to a bee sting – employee can start to suffocate • Dog could have rabies and transmit to employee • Employee can be struck by cattle/farm animals that can cause bodily harm	• Qualified first aider required for site who can treat snakebite • Snake bite kit to be on hand Check area before working • Find out nearest hospital and get emergency telephone numbers • The principal contractor must ensure that they protect all livestock Proper communication with local farmers / rural areas must be kept • **Refer to "Emergency Procedures" in OHS Specification for control measures**	Medium
21.	Housekeeping	• Trips and falls • Dust Uncontrolled areas • Stockpiling of materials	• Employee can fall over areas where housekeeping was neglected and could cause injury to the body • Continuous exposure to dust can affect the health of employee • Stockpiling can cause animals (snakes / spiders) to hide inside the stock piles and can cause injury to employee who touch the animals	• Ensure the area below where any elevated work is being performed is free of any rubble, spikes, tools or equipment • Ensure that all areas have been checked by competent persons on a daily basis • Ensure that all site agents have certified theirwork area as safe by the end of each shift • Ensure stockpiles are kept clean • Stockpiles to be cleaned carefully in case animals are hiding inside the pile • Public Roadways to be kept clean & clear. • **Refer to "Public and Site Visitor Health & Safety" in OHS Specification for control measures**	Medium

Item No	Conditions / Activities on site	Hazard / Dangers	Risks to Health or Safety	Control Measures	Risk Rating
22.	Loading and offloading of trucks and other materials	• Incorrect method of loading and offloading materials • Materials being offloaded and stacked incorrectly • Moving machinery • Incompetent machine operator	• Injury to hands, legs, and feet due to incorrect loading and offloading of material • Possible fatal injury to employee struck by moving machinery • Material falling off the truck and striking employee causing head injury • Damage to the vehicle or third-party vehicles due to an incompetent driver • Back injury to employee due to excessive weight being loaded and offloaded • Dropping load onto fingers, legs, or feet of employee	• All employees to be inducted regarding the use of PPE and its maintenance • Supervisor to plan procedures • Good housekeeping practices should be implemented • Truck driver to be responsible for his load • **Refer to "Plant, Machinery and Equipment" in OHS Specification for control measures**	Medium
23.	Manual Handling	• Incorrect manual lifting operations • General items are too heavy for one person • Repetitive manual handling for an extensive period of time	• Muscular skeletal injuries if the load is too heavy or awkward for the employee • General items falling over onto employee causing back injury • General items stacked wrong can tip over falling onto employees causing body injuries • Fall of material being carried causing employees to trip and injuring their back or head	• Personnel should be aware of safe manual handling techniques • Personnel to wear Personal Protective Equipment when carrying items, eg: Steel toe cap shoes and gloves • Ensure good housekeeping against tripping/fall hazards • Operative to get assistance if load too heavy- team lift if necessary • Utilize mechanical lifting and carrying aids where possible • Personnel to ensure access equipment, ladders will take weight of operative, and load being carried • Personnel to ensure item being carried is properly bonded or will not be liable to break apart whilst being manually handled • **Refer to "Industrial Hygiene (exposure to physical and chemical stress factors)" in OHS Specification for control measures**	Medium

Item No	Conditions / Activities on site	Hazard / Dangers	Risks to Health or Safety	Control Measures	Risk Rating
24.	Working close to water	• Wet or slippery surfaces, obstacles in walkways Deep water, strong currents, underwater hazards • Faulty electrical equipment, electrical shock • Inhalation of toxic fumes, skin contact with harmful substances • Encounters with aggressive or dangerous animals	• Physical injury from slips, trips, and falls Drowning or submersion in water • Electrocution from nearby electrical equipment • Exposure to harmful chemicals or substances • Conflict with wildlife	• Provide proper footwear with slip-resistant soles, use warning signs and barriers, implement • regular safety inspections, and train employees on safe work practices • Provide life jackets and flotation devices, establish clear safety procedures and protocols, train employees on water safety and rescue. • techniques, and provide immediate access to emergency rescue equipment. • Ensure electrical equipment is properly grounded and maintained, conduct regular safety • inspections, provide employees with electrical • safety training and establish clear procedures for working near electrical equipment. • Provide proper personal protective equipment, implement regular air quality monitoring, provide employees with hazardous materials training, and establish clear procedures for handling and disposing of harmful substances • Establish clear procedures for encountering. • wildlife, provide employees with wildlife safety • training, and establish areas that are off-limits to wildlife	High

Item No	Conditions / Activities on site	Hazard / Dangers	Risks to Health or Safety	Control Measures	Risk Rating
25.	Underground Services	• Underground services • Exposure to asbestos pipe underground	• Employee can be exposed to electrical wires underground and can cause shock to employee	• Make all necessary enquiries to establish what services are in the area Consult drawings and advice from service provider (eg: Municipality or ESKOM) when planning work • Assume all service to be live (Unless confirmation is received to confirm that services are isolated or otherwise made safe) • Do not work near live services without authorization from site management • Comply with the requirements of the safe system of work for underground services • Wayleaves to be procured before the commencement of digging into the ground • **Refer to "Existing Services" in OHS Specification for control measures**	High
26.	Asbestos pipes	• Exposure to asbestos pipes • Damage to asbestos pipe	• Employee exposed to asbestos can become ill with asbestosis	• Wayleaves to be procured before the commencement of digging into the ground • All asbestos work to be done by a registered Asbestos Contractor • All Asbestos Regulations to be followed & PPE to be used. • Refer to "Asbestos Work" in OHS Specification for control measures	Medium

Item No	Conditions / Activities on site	Hazard / Dangers	Risks to Health or Safety	Control Measures	Risk Rating
27.	Plant or Vehicles Operation	• Moving of plant and vehicles • Incompetent operators • Vehicles or plant not inspected	• Workers injured by passing plant or vehicles • Road users and pedestrians at risk from incompetent operator • Vehicles not inspected can cause injury to employees if machinery becomes damaged or uncontrollable	• Implement traffic protection measures • Trained and competent operators must be used Check plant and vehicles on daily basis before use and record inspections Maintain vehicles in safe condition • Medical certificates of fitness required for construction plant • Crossing of road by construction vehicles or machines must be limited to the practical minimum • Plant and vehicles must be fitted with amber rotating beacons and reverse alarms/hooters • **Refer to "Plant, Machinery and Equipment & Traffic Management" in OHS Specification for control measures**	High
28.	Protection against dehydration / heat exhaustion (this is not a hot area)	• Exposure to the sun for extended periods of time	• Danger to employees fainting at work due to lack of rest and water, • Employee working at height can faint due to dehydration • Employee can get heat stroke due to excessive exposure to the sun	• Each employee performing manual labour in high temperatures exceeding 30 degrees must be declared medically fit before work commences and thereafter yearly by a registered medical practitioner or a registered nurse and be issued with a fitness certificate • Induct employees to take at least 600 milliliters of water every hour and on how to avoid heatstroke provide affected employees with prompt first-aid treatment in the event of heatstroke • Only do light duty work on temperatures above 40 degrees Celsius • **Refer to "Weather Statistics" in OHS Specification for control measures**	Low
29.	Protection from wet and cold conditions	• Extensive exposure to Cold wind • Extensive Exposure to a period of rain	• Various lung diseases due to exposure to cold conditions • Loss of productivity due to it	• Provide waterproof clothing of a type that will effectively protect the wearer against harm Schedule work in such a way that it would not warrant the use of PPE (Waterproof Clothing)	Low

Item No	Conditions / Activities on site	Hazard / Dangers	Risks to Health or Safety	Control Measures	Risk Rating
			being too cold to work • Employees can contract hyperthermia if exposed to extreme cold and wet conditions	• Covered resting area is required to protect employees from exposure to the wet and cold conditions • Principal contractor to keep track of weather conditions so as to not expose workforce to harsh weather conditions	
30.	Site Establishment	• Unsafe offloading of tools & equipment	• Employees can be injured when site establishing the site • Materials falling onto employees during offloading	• Competent personnel to be used in offloading personnel • Unauthorized personnel to be kept away from area, use barriers and signage as necessary Unloading and establishment to be under control of competent supervision • All equipment and tools used for unloading and site establishment to be in good condition and maintained • Safe access and egress to be maintained, traffic management to be considered • All electrical equipment to be in safe condition Workers to use safe manual handling techniques when unloading/loading/lifting items	Medium

Item No	Conditions / Activities on site	Hazard / Dangers	Risks to Health or Safety	Control Measures	Risk Rating
31.	Use of Portable Electrical Equipment	• Unsafe tools • Damage to property • Broken or unsafe tools • Cables lying in water, • tripping hazards • Broken switches, damaged cables and plugs, guards removed • Leaving tools lying on site, tripping hazard, untrained persons using tools • Theft of equipment	• Injury to employees hand due to broken or unsafe tool • Employee can be shocked due to damaged wire in the water • Employee can be shocked when working with power if not aware that the plug or breaker is broken or faulty • Employee can trip and fall over tools being left on site • Employee can cut his/her hand if the guard is removed • Guard removed can cause blade to become dislodged and can fly and strike employee causing fatal injuries	• All portable electrical tools to confirm to SANS codes and standards • Set standards of tools to be bought by buying department • Feedback from site regarding standard of tools Ensure all extension cords are of a good standard Check all portable tools regularly for defaults Register to be kept up to date with Inspections Ensure all portable — electrical tools are of a good standard • Only trained employees to operate Untrained employee • equipment • Keep record of all training • Lift all cables off the ground (wherever possible) Instruct employees on safe work procedures Maintenance program for all portable electrical tools • Store all portable tools in a safe dry place • Ensure all portable electrical tools are returned to the stores • Employees to be aware of others working in the area • Safety guards must be always on the machine • Refer to "Portable electrical tools" in OHS • Specification for control measures	Medium
32.	Covid - 19	• Dirty and non-disinfect objects • surfaces that are frequently touched in terms of breathing • Shared meeting spaces	• Employee contracting covid 19 virus & dying as a result employee causing fatal injuries	• Refer for "Covid 19 Requirements – Corona Virus" Control measures in OHS Specification • Ensure all portable electrical tools are returned to the stores • Employees to be aware of others working in the area • Safety guards must be always on the machine • **Refer to "Portable electrical tools" in OHS** • **Specification for control measures**	Medium

Item No	Conditions / Activities on site	Hazard / Dangers	Risks to Health or Safety	Control Measures	Risk Rating
32.	Covid - 19	• Dirty and non-disinfect objects • surfaces that are frequently touched in terms of breathing • Shared meeting spaces	• Employee contracting covid 19 virus & dying as a result	• **Refer for "Covid 19 Requirements – Corona Virus" Control measures in OHS Specification**	Medium
33.	Public	• Members of the public adjacent to works.	• Injury to members of the due to impact with construction vehicles	• Stager lunch times with hours that school open & close to correspond. • Have additional flag personnel available at the school entrances. • **Complete DSTI's & Communicate this risk to workers.** • **Refer to "Public and Site Visitor Health & Safety" in OHS Specification for control measures**	High
34.	Traffic Management	• Pedestrian and vehicle conflict • Vehicle and equipment movement • Traffic congestion • Work zone intrusion • Adverse weather conditions	• Accidents, injury, and death • Accidents, injury, and death • Delays, increased emissions, and frustration • Accidents, injury, and death • Reduced visibility, slippery surfaces, and hazardous driving conditions • Traffic Congestion	• Clearly defined pedestrian walkways, pedestrian crossing points, proper signage, and traffic control devices • Clearly defined vehicle movement routes, speed limit signs, traffic control devices, and proper training for drivers and operators • Proper traffic management plans, proactive measures such as temporary lane closures and detours, effective signage, and communication with road users • Adequate barriers, advance warning signs, flagging operations, and law enforcement presence. • Monitoring of weather conditions, effective communication with road users, temporary closures, and additional safety measures as necessary • Efficient Traffic Management systems.	High

Item No	Conditions / Activities on site	Hazard / Dangers	Risks to Health or Safety	Control Measures	Risk Rating
35.	High Pressure jet machine/washer	• Unintentional Machine Movement • High Pressure Water against the Body • Eye / Skin damage form flying debris • Exposure to High Noise levels from Petrol / Diesel powered Pressure Washer • Trip, Slip and falling • Burns from contact with hot engines /exhaust systems and pressurized hot coolant system • Burns from Hot Water Boiler Systems • Burns from Hot Exhaust Gases	• Crushing Injuries • Serious injuries to the body • Burns to the skins	• Make sure Machine is on firm Level Surface Chock Wheels , apply Park Brake • Ensure Machine is located in a well-ventilated area when running. ALL Exhaust fumes to be vented externally Do not run in confined space • Conduct site specific risk assessment do not operate pressure washer unless qualified and authorized to do so read manufacturer's instructions wear all required ppe barricade work area - restrict access erect hazard waning signs do not use without protective sheath on operators end of high pressure hose do not use if evidence of water leaks in the event of a water jet injury - seek immediate medical attention • Use appropriate PPE including goggles / face mask, long shirt sleeves and long trousers and gloves • Use appropriate PPE ear plugs or muffs • Do not operate machine with faulty Muffler / Exhaust systems. • Extreme caution to be taken with hoses on the ground /tripping Wet ground slipping wear appropriate nonslip footwear If used on platforms must be approved access platform • Exercise extreme caution - allow to engine / radiator cool before touching / repairing / checking. • Personal care to be taken at all times. All electrical leads and power points to be safe , serviceable and tagged, no exposed wiring or damaged leads, inspect before use. Do not pressure wash electrical components / parts / motors / switchgear or power sockets Unplug Machine when switched OFF. • Be aware of hot components - Water / Gun / Lance / Hose / Boiler appropriate PPE Allow to cool before carrying out any maintenance / inspection • Do not approach exhaust stack with any part of body Switch OFF and allow to cool before any inspection	High

Item No	Conditions / Activities on site	Hazard / Dangers	Risks to Health or Safety	Control Measures	Risk Rating
36.	Increased population density	• Overcrowded areas often face challenges related to theft, vandalism, assault, and other forms of criminal activity due to a lack of surveillance and social control. • Rapid spread of contagious diseases.	• Higher crime rates • Spread of diseases	• Community policing and increased surveillance. Improved lighting and security measures. • Enhanced public health measures: Vaccination programs, disease surveillance, and hygiene promotion. • Have Adequate healthcare facilities and resources.	Medium
37.	Small avenues	• Traffic Congestion • Pedestrians Safety Concerns • Limited Emergency access • Difficulty for large Mobile Plants	• Delays on projects • Injuries • Fatalities	• Efficient traffic management systems, including traffic signals and road widening projects. • Promoting alternative transportation modes.	High
38.	Lots of children	• Children are exposed to machinery and mobile plants. • Supervision Challenges	• Children becoming trapped in between mobile plants. • Injuries to children • Crushing • Fatalities to multiple fatalities	• Increased adult-to-child ratio in childcare facilities. • Active supervision and child safety protocols. • Implementing age-appropriate safety measures and education programs.	
39.	Unexposed Children – Combined with Large moving Machinery & open manholes.	• Machinery Accidents • Fall and Entrapment • Lack of Awareness	• Children becoming trapped in between mobile plants. • Injuries to children • Crushing • Fatalities to multiple fatalities	• Strict safety protocols for machinery operation, including proper training and certifications. • Physical barriers and signage to prevent unauthorized access. • Secure and cover open manholes and excavations. • Regular inspections and maintenance of infrastructure to prevent hazards. • Educational campaigns and awareness programs about machinery and infrastructure hazards. • Engaging parents, schools, and communities in safety initiatives.	High

Item No	Conditions / Activities on site	Hazard / Dangers	Risks to Health or Safety	Control Measures	Risk Rating
40.	Use of Local labour	• Unskilled & Untrained • Lack of nutrition • Increased likelihood of drug & alcohol abuse • Lack of responsibility due to no long-term employment	• Project delays • Fatigue • Weakness • Severe injuries to unskilled and untrained workers. • Intoxication • Financial Instability • Reduced Career Development	• Effective project planning and scheduling specific training. • Have adequate resource allocation and management. • Regular monitoring and evaluation of the project and workers. • Contingency planning to address potential delays. • Emphasizing safety protocols and procedures. • Mandatory use of personal protective equipment (PPE) • Strict substance abuse policies, including random drug and alcohol testing. • Employee education programs on the risks and consequences of substance abuse. • Promoting a culture of responsibility and discouraging substance abuse through awareness campaigns and employee support programs. • Diversifying income sources and exploring additional part-time or freelance opportunities. • Building an emergency fund to provide a safety net for unexpected financial challenges. • Continuous learning and skill development through training programs, workshops, or further education. • Seeking mentorship or guidance from experienced professionals in the field. • Actively networking and engaging in professional communities and industry events. • Exploring lateral job opportunities or secondments within the organization to gain new experiences and skills	
41.	Language Barriers & communication challenges	• Misunderstanding	• Project delays • Injuries • Performing incorrect tasks	• Use a common language when possible. • Provide multilingual communication resources. • Clarify and confirm understanding through active listening and feedback. • Establish a buddy system or mentoring program for employees with language barriers	High

Item No	Conditions / Activities on site	Hazard / Dangers	Risks to Health or Safety	Control Measures	Risk Rating
42.	Illegal and dangerous electrical connections	• Live illegal electricity connections	• Electrical shock or electrocution • Fire Hazards • Damage to electrical equipment and infrastructure • Legal and regulatory penalties	• Ensure all electrical work is performed by licensed and qualified professionals. • Conduct regular inspections to identify and address illegal or unsafe electrical connections. • Provide electrical safety training. • Implement lockout/tagout procedures when working on electrical systems. • Encourage reporting of any observed illegal or dangerous electrical connections. • Ensure proper electrical wiring, connections, and grounding. • Regularly inspect electrical equipment and wiring for damage or signs of overheating • Educate employees on fire prevention measures and safe use of electrical devices. • Install and maintain appropriate fire detection and suppression systems. • Enforce strict compliance with electrical codes and regulations. • Regularly maintain and repair electrical equipment and wiring • Use surge protectors and voltage stabilizers to safeguard equipment. • Promote a culture of safety and accountability among employees. • Address any reported concerns or suspicions promptly and thoroughly. • Encourage transparency and open communication regarding electrical safety	High

Item No	Conditions / Activities on site	Hazard / Dangers	Risks to Health or Safety	Control Measures	Risk Rating
43.	Exposed sewer	• Exposure to harmful pathogens and contaminants	• Contracting hepatitis diseases. • Toxic gases and noxious odours • Environmental contamination	• Ensure workers has been vaccinated with all 3 A & B Hepatitis vaccines. • Provide personal protective equipment (PPE) such as gloves, masks, and protective clothing to workers. • Implement proper hygiene practices, including handwashing facilities and sanitization measures. • Install barriers and warning signs to prevent unauthorized access to the exposed sewer. • Conduct regular inspections to identify and repair any leaks or damage to the sewer system. • Train employees on proper handling and disposal of sewage-related waste. • Follow applicable regulations and guidelines for handling and treating wastewater. • Implement proper ventilation systems to minimize the buildup of toxic gases and odors. • Provide workers with gas detectors and personal monitoring devices. • Establish procedures for confined space entry, if applicable, and follow them strictly. • Conduct thorough risk assessments prior to any work near the exposed sewer to identify and mitigate potential gas hazards. • Implement proper containment and spill response measures to prevent the release of sewage into the environment. • Follow regulations and guidelines for the proper treatment and disposal of sewage waste. • Regularly monitor and test the quality of nearby water sources to detect any signs of contamination. • Implement erosion control measures to prevent soil erosion and the contamination of nearby water bodies. • Develop emergency response plans to address any accidental spills or releases of sewage.	High

Item No	Conditions / Activities on site	Hazard / Dangers	Risks to Health or Safety	Control Measures	Risk Rating
44.	The tendency of lawlessness	• Crime and illegal activities	• Violence. • Social unrest and instability •	• Strengthen law enforcement presence and patrols in high-risk areas. • Implement community policing initiatives to foster cooperation and trust between law enforcement and the community. • Enhance surveillance systems, including CCTV cameras and alarm systems, to deter and detect criminal activities. • Encourage community engagement and participation in crime prevention programs. • Establish neighborhood watch programs to increase vigilance and reporting of suspicious activities. • Promote awareness campaigns to educate the public about the negative consequences of lawlessness. • Conduct regular risk assessments to identify high-risk areas and potential threats. • Enhance security measures in public spaces, including the presence of trained security personnel. • Implement emergency response plans and drills to ensure a swift and coordinated response to any security incidents. • Encourage the public to report suspicious behavior and provide anonymous reporting channels. • Implement conflict resolution programs and mediation services to address disputes and prevent escalation. • Promote inclusivity, tolerance, and dialogue to address social divisions and promote understanding among different groups. • Establish mechanisms for peaceful resolution of conflicts, such as mediation and negotiation. • Encourage civic participation and engagement to address societal issues and promote social	High

Item No	Conditions / Activities on site	Hazard / Dangers	Risks to Health or Safety	Control Measures	Risk Rating
				cohesion. • Support initiatives that address socioeconomic disparities and promote equal opportunities for all. • Foster an environment of open communication and freedom of expression while respecting the rule of law. • Encourage political and community leaders to lead by example and promote peaceful and lawful behavior.	
45.	Select appropriate chemical for target Species	• Inadequate selection of chemical	• Non target species damage.	• Appropriate identification and knowledge of chemical. If unsure, contact your team lead.	Medium

CITY OF CAPE TOWN

WATER AND SANITATION: DISTRIBUTION SERVICES

CONTRACT NO. 150Q/2024/25

TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

C3.6 Annexes

CONTENTS

Annex 1: Monthly Project Labour Report

Annex 2: B-BBEE Sub-Contract Expenditure Report

Annex 3: Joint Venture Expenditure Report

Annex 4: Targeted Labour Contract Participation Expenditure Report

Annex 5: Targeted Enterprises Contract Participation Expenditure Report

Annex 6: As-Built Protocol (Checklist)

ANNEX 1

CITY OF CAPE TOWN
MONTHLY PROJECT LABOUR REPORT

CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

Instructions for completing and submitting forms

General

1 The Monthly Project Labour Reports must be completed in full, using typed, proper case characters; alternatively, should a computer not be available, handwritten in black ink.
2 Incomplete / incorrect / illegible forms will not be accepted.
3 Any conditions relating to targeted labour stipulated in the Contract (in the case of contracted out services or works) shall apply to the completion and submission of these forms.
4 This document is available in Microsoft Excel format upon request from the City's EPWP office, tel 021 400 9406, email EPWPLR@capetown.gov.za.

Project Details

5 If a field is not applicable insert the letters: NA
6 Only the Project Number supplied by the Corporate EPWP Office must be inserted. The Project Number can be obtained from the Coordinator or Project Manager or from the e-mail address in point 4 above.
7 On completion of the contract or works project the anticipated end date must be updated to reflect the actual end date.

Beneficiary Details and Work Information

8 Care must be taken to ensure that beneficiary details correspond accurately with the beneficiary's ID document.
9 A new beneficiary is one in respect of which a new employment contract is signed in the current month. A certied ID copy must accompany this labour report on submission.
10 Was the beneficiary sourced from the City's job seeker database?
11 The contract end date as stated in the beneficiary's employment contract.
12 Where a beneficiary has not worked in a particular month, the beneficiary's name shall not be reflected on this form at all for the month in question.
13 Training will be recorded separately from normal working days and together shall not exceed the maximum of 23 days per month
14 Workers earning more than the maximum daily rate (currently R450 excluding any benefits) shall not be reflected on this form at all.

Submission of Forms

15 Signed hardcopy forms must be scanned and submitted to the City's project manager in electronic (.pdf) format, together with the completed form in Microsoft Excel format.
16 Scanned copies of all applicable supporting documentation must be submitted along with each monthly project labour report. Copies of employment contracts and ID documents are only required in respect of new beneficiaries.
17 If a computer is not available hardcopy forms and supporting documentation will be accepted.

PROJECT DETAILS

Numbers in cells below e.g (6) refer to the relevant instruction above for completing and submitting forms

CONTRACT OR WORKS PROJECT NAME: (6)		EPWP SUPPLIED PROJECT NUMBER: (6)	
DIRECTORATE:		DEPARTMENT:	
CONTRACTOR OR VENDOR NAME:		CONTRACTOR OR VENDOR E-MAIL ADDRESS:	
CONTRACTOR OR VENDOR CONTACT PERSON:		CONTRACTOR OR VENDOR TEL. NUMBER:	CELL WORK

PROJECT LABOUR REPORT CURRENT MONTH (mark with "X")

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR				

ACTUAL START DATE (yyyy/mm/dd)								ANTICIPATED / ACTUAL END DATE (yyyy/mm/dd) (7)							

TOTAL PROJECT EXPENDITURE / VALUE OF WORK DONE TO-DATE (INCLUDING ALL COSTS, BUT EXCLUDING VAT)

R														

ANNEX 1 (continued)

MONTHLY PROJECT LABOUR REPORT

BENEFICIARY DETAILS AND WORK INFORMATION

CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

CONTRACT OR WORKS PROJECT NUMBER:		Year	Month

Sheet		
1	of	

	(8)	(8)	(8)	(9)			(10)		(11)	(12)	(13)	(14)
No.	First name	Surname	ID number	New Beneficiary (Y/N)	Gender (M/F)	Disabled (Y/N)	Job seeker database (Y/N)	Contract start date (DDMMYY)	Contract end date (DDMMYY)	No. days worked this month (excl. training)	Training days	Rate of pay per day (R – c)
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
										0	0	R -

Declared by Contractor or Vendor to be true and correct:	Name		Signature	
	Date			

Received by Employer's Agent / Representative:	Name		Signature	
	Date			

ANNEX 2 CITY OF CAPE TOWN

CONTRACT NO. AND NAME: .....

CONTRACTOR: .....

B-BBEE SUB-CONTRACT EXPENDITURE REPORT BASED ON PAYMENT CERTIFICATE NO. .....

Value of the contract (as defined in the **Preference Schedule**) (**P***)	R	B-BBEE Status Level of Prime Contractor	

Name of Sub-contractor (list all)	**B-BBEE Status Level of Sub-contractor[1]**	**Total value of Sub-contract (excl. VAT)[1]**	**Value of Sub-contract work to date (excl. VAT)[1]**	**Value of Sub-contract work to Sub-contractors with a lower B-BBEE Status Level than Prime Contractor**
Sub-contractor A		R	R	R
Sub-contractor B		R	R	R
Sub-contractor C		R	R	R
			Total:	R
			Expressed as a percentage of **P***	%

[1]Documentary evidence to be provided

Signatures

Declared by Contractor to be true and correct: ..... **Date:** .....

Verified by Employer's Agent / Representative: ..... **Date:** .....

ANNEX 3

CITY OF CAPE TOWN

CONTRACT NO. AND NAME: _____

CONTRACTOR: _____

JOINT VENTURE EXPENDITURE REPORT BASED ON PAYMENT CERTIFICATE NO. .....

Value of the contract (as defined in the **Preference Schedule**) (**P***)	R	B-BBEE Status Level of Joint Venture	

Name of Joint Venture partner (list all)	B-BBEE Status Level of each JV partner as at contract award	Percentage contribution of JV partner per JV Agreement[1] A	Total value of JV partner's contribution (excl. VAT)[1] B = A% x P*	Value of JV partner's contribution to date (excl. VAT)[1] C	Value of JV partner's contribution as a percentage of the work executed to date D = C/P*x100
JV Partner A		%	R	R	%
JV Partner B		%	R	R	%
JV Partner C		%	R	R	%

[1]Documentary evidence to be provided

Signatures

Declared by Contractor to be true and correct: _____ **Date:** _____

Verified by Employer's Agent / Representative _____ **Date:** _____

ANNEX 4 CITY OF CAPE TOWN

CONTRACT NO. AND NAME: .....

CONTRACTOR: .....

TARGETED LABOUR CONTRACT PARTICIPATION EXPENDITURE REPORT BASED ON CERTIFICATE NO. .....

Value of the contract (as defined in the **Preference Schedule**) (**P***)	R

Specified Targeted Labour Contract Participation Goal	%

Name of Contractor/Sub-contractor (list all)	**Total previous expenditure on wages in respect of targeted labour**	**Net Amount for this month[1]**	**Total expenditure on wages in respect of targeted labour**
Contractor	R	R	R
Sub-contractor A	R	R	R
Sub-contractor B	R	R	R
		Total:	R
		Expressed as a percentage of **P***	%

[1]Documentary evidence to be provided

Signatures

Declared by Contractor to be true and correct: ---------- **Date** ----------

Verified by Employer's Agent / Representative ---------- **Date** ----------

ANNEX 5 CITY OF CAPE TOWN

CONTRACT NO. AND NAME: .....

CONTRACTOR: .....

TARGETED ENTERPRISES CONTRACT PARTICIPATION EXPENDITURE REPORT BASED ON CERTIFICATE NO. .....

Value of the contract (as defined in the **Preference Schedule**) (**P***)	R

Specified Targeted Enterprises Contract Participation Goal	%

Name of targeted enterprise (list all)	**Total previous expenditure (excl. VAT) to targeted enterprises**	**Net Amount for this month[1]**	**Total expenditure (excl. VAT) to targeted enterprises**
Targeted Enterprise A	R	R	R
Targeted Enterprise B	R	R	R
Targeted Enterprise C	R	R	R
		Total:	R
		Expressed as a percentage of **P***	%

[1]Documentary evidence to be provided

Signatures

Declared by Contractor to be true and correct: _____ **Date** _____

Verified by Employer's Agent/ Employer's Agent's Representative: ..... **Date** _____

ANNEX 6

AS-BUILT PROTOCOL (CHECKLIST)

AS-BUILT PROTOCOL (CHECKLIST)

The following protocols regarding civil "as built" plans and GIS data are implemented by the City of Cape Town

WS_RET_REG_017	29/07/2019	WATER AND SANITATION DEPARTMENT	Version: 01	
COMPILED: BII: SPO		INFORMAL SETTLEMENTS BASIC SERVICES	APPROVED: MANAGER	
ALL CONTROLLED documents are located in the SAP DM System				Printed 2019/07/29
Printed documents are NOT CONTROLLED except if signed and dated				Page 1 of 1

	As-built data should be supplied to the CITY OF CAPE TOWN in GIS and CAD and Hardcopy formats, and comply with prescribed survey standards. **1) AS BUILT PLANS** **2) GIS DATA FORMAT / STANDARDS** **3) CAD** **4) SURVEY**
	1) AS-BUILT PLANS
☐	1.1 Two (2) sets of "as built" services layout plans (Scale 1 : 500), including longitudinal sections if applicable, be provided and loosely rolled up. (to be printed on Hydromat Film OR Coated Paper)
☐	1.2 The hard copies should be on standard sheet sizes. Hard copies should not be larger than A0. **A1 paper size is preferred.**
☐	1.3 No Telkom or electrical data should appear on the civil "as built" plans or digital data, unless requested by the City of Cape Town.
☐	1.4 **As-Built drawings:** *Services should be separated on the drawings as follows:* - Water Layout (excluding contours) - Sewer Layout (excluding contours) - Roads and Storm water Layout (including contours) - Roads and Traffic Signage Layout - Combined Services (water, sewer and storm water) (excluding contours) - Electrical and Telkom (on request)
☐	1.5 **The following information needs to be clearly indicated on all drawings:** All appropriate Map Layout features o Title Block o Clear Legends indicating all services o North sign o Scale
☐	1.6 Date – of all revisions should be indicated and final "as builts" date.
☐	1.7 The Name of Development / Suburb.
☐	1.8 Where there are various phases, it should be shown clearly on a Locality insert map
☐	1.9 Street names (if available).
☐	1.10 The correct erf numbers on the erven if available from the Surveyor General
☐	1.11 Servitudes and their widths.
☐	1.12 Revision number (A-Z) With "as builts" as revision ZZ . Final plan clearly indicated as "As-built" and marked as revision ZZ.
☐	1.13 The name in full and signature of the responsible project manager, contact details, as well as the names of the clients, consultants, contractor and Project number should be on the "as builts".
☐	1.14 The ownership, regarding "Municipal or Private" services should be clearly indicated.
☐	1.15 That all features and attribute data, i.e. pipes/leadings/valves/fittings and diameter/class, materials, slopes, lengths, cover and invert levels be clearly indicated on the drawings, positioned at the entity.
☐	1.16 The type of valves and hydrants indicated on the plan
☐	1.17 Accurate dimensions for all services
☐	1.18 Co-ordinate lists (ASCII /Excel file) of the valves, fire hydrants, manholes, meter positions, leading end cap, etc. should appear on the plan and to be digitally handed over to the Council.
☐	1.19 A table, indicating the total length of New Pipes/Relays for the different pipe diameters, class and types.

☐	1.20 Bulk Water Meter details (Location XY, size)
☐	1.21 The new "as-built" data should not be indicated as "proposed".
	Disclaimer: *It is the responsibility of the contractor to verify the locations of the Water and Sanitation infrastructure in the field, as supplied to them by the CCT, before the start of construction and to immediately brought any discrepancies/ anomalies to the attention of the Water and Sanitation department.*
	2) GIS **GIS DATA FORMAT / STANDARDS**
☐	2.1 **The GIS data must be produced and provided in the following projection:** Map Projection: Gauss Conformal (Transverse Mercator) Datum: Hartebeeshoek 94 Spheroid: WGS 84 Scale Factor: 1 Central Meridian: 19 Units: International Meter
☐	2.2 **Spatial data should be supplied to the CITY OF CAPE TOWN in the following formats:** ***When NO Geodatabase has been provided by the Municipality:*** o Data to be submitted in ESRI GIS formats: ArcGIS File Geodatabase or Personal Geodatabase or Shape files (*.shp); with attributes containing pipe diameters /class, length, capacity, material, CL/IL (**height values must be referenced to Mean Sea Level**), consultant etc. o All field names must be understandable and, if provided as a Shapefile, the field names must be shorter than eight characters. o If the field name is more that one word, underscores must be used e.g. Facility_Name o Metadata explaining the field names and field parameters must be provided ***When an empty Geodatabase was provided by Water & Sanitation GIS*** o Capture all data and relevant fields as specified in the tender specifications o If any other spatial data (Except for the feature classes provided) is included in the final deliverable this data should be in a feature dataset o Data must be captured with the cadastral file used as background reference o All raster data and symbolize layers must be excluded from the geodatabase and provided in a separate folder
☐	2.3 **Topology**: *All data supplied to the CITY OF CAPE TOWN should have spatial topology.* o The capturing direction of line features (pipes) must reflect the gravity (flow) direction of the sewer pipe. (Capture in the Flow Direction of the Pipes.) o Connectivity must be complete; stipulating that all connected features snaps accurately to one another with no under- or over shoots, point-to-line and line-to-line. o The drawing must be "topologically clean" with no duplication of features.
	3) CAD
☐	3.1 Cross Sections, Longitudinal Sections and Detail Drawings are required in CAD format.
☐	3.2 "As built" drawings in electronic AutoCad.dxf format is preferred, or alternatively
☐	AutoCad.dwg (version 2000 or older). At least two drawing formats must be provided e.g. Dxf and AllyCad.drg or Dxf and AutoCad.dwg – AND in Pdf format.
☐	3.3 The CAD drawings should be drawn BY LAYER and not BY COLOR and the layer names must be descriptive and just and containing not more than 8 digits. (Each theme type must be drawn on a different layer.)
☐	3.4 No "YELLOW" colour of layers will be accepted.
	4) SURVEY
☐	4.1 It is the responsibility of the contractor to verify the locations of the Water and Sanitation infrastructure in the field, as supplied to them by the CCT, before the start of construction and to immediately bring any discrepancies/ anomalies to the attention of the Water and Sanitation department.
☐	4.2 Post construction survey of the centre points of all surface features (valves, fire hydrants, manholes, meter positions etc), including pipe bends, endcaps, tee's and crosses as part of "as built" information.

☐	4.3 Reference points such as "Town Survey Marks" and "Working Stations" used during As-Built survey to be listed on the plan in the following format: Name, Y coord, X coord, Z value, Description
☐	4.4 Height values must be referenced to Mean Sea Level (MSL) if MSL controll points are available.
☐	4.5 Surveyor signature to be present on all As Built plans
☐	**4.6 "As Built" to be completed and handed over on final inspection to the person representing the City of Cape Town. As Built completion and acceptance by the CCT is a requisite before the release of the final contract payment.**
☐	**The complete electronic data set must be provided in CD/DVD/USB Media with the name of the development, the mother erf number and the consultants company name and contact details clearly indicated on both the cover and the CD disk.**

CHANGE LIST

Page	Reason for change	Version	Reviewer	Release Date
All	Original Development	0	[redacted]	2018-08-17

Part C4: Site information

	Pages
C4.1 Site information	400 - 401
C4.2 Drawings	402 - 423

CITY OF CAPE TOWN

WATER AND SANITATION: DISTRIBUTION SERVICES

CONTRACT NO. 150Q/2024/25

TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

C4.1 Site Information

CONTENTS

1. GENERAL

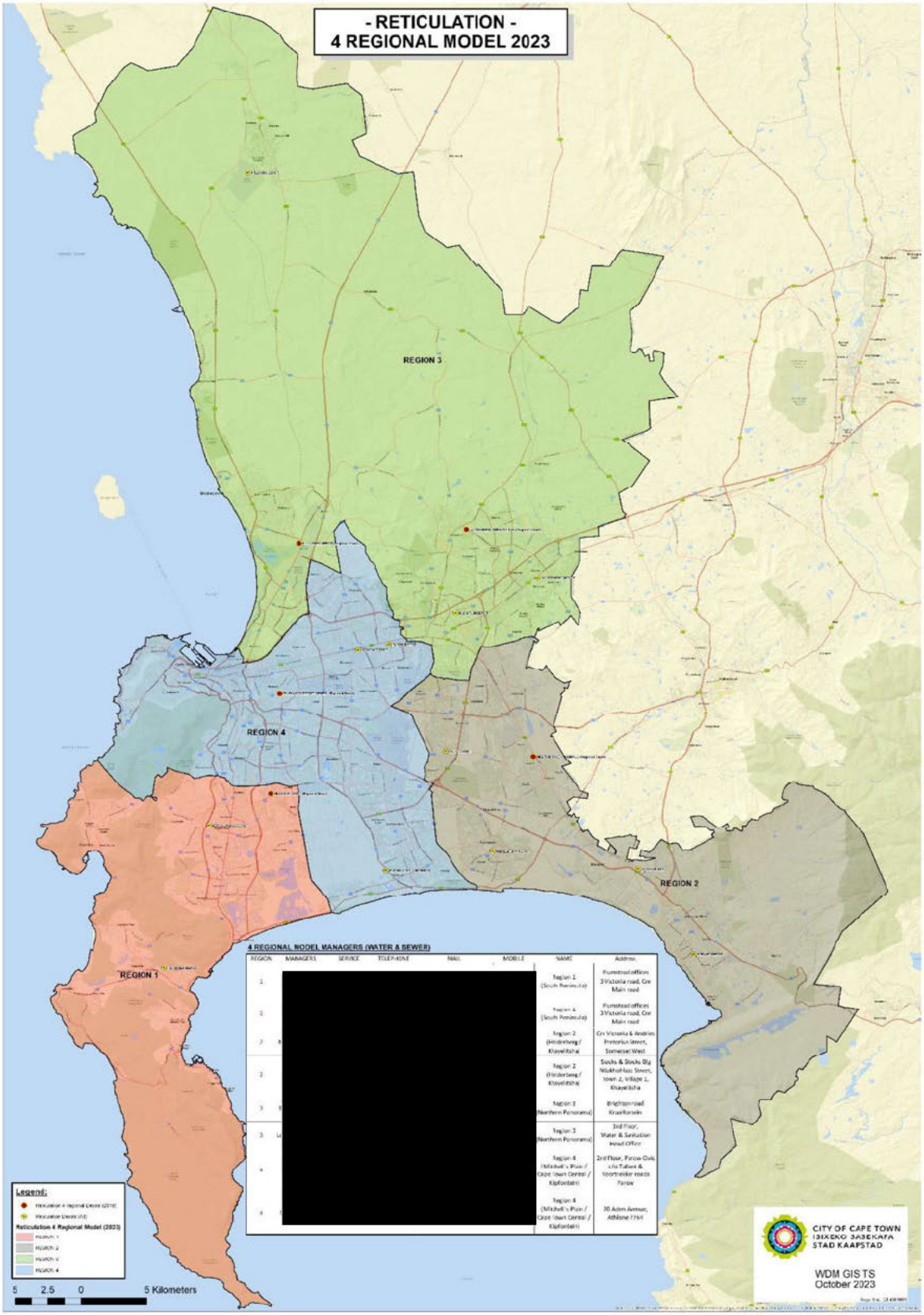
2. WORKS PROJECTS

1. GENERAL

The sites for the Works are those areas which may be identified within the City of Cape Town municipal area in which Works Projects are to be executed. See the Reticulation 4 Regional Model map on the next page.

2. WORKS PROJECTS

Site specific information will be specified, as required, in the Works Project contract document for a particular Works Project. An example of such a Works Project Document is available upon request to the Employer.

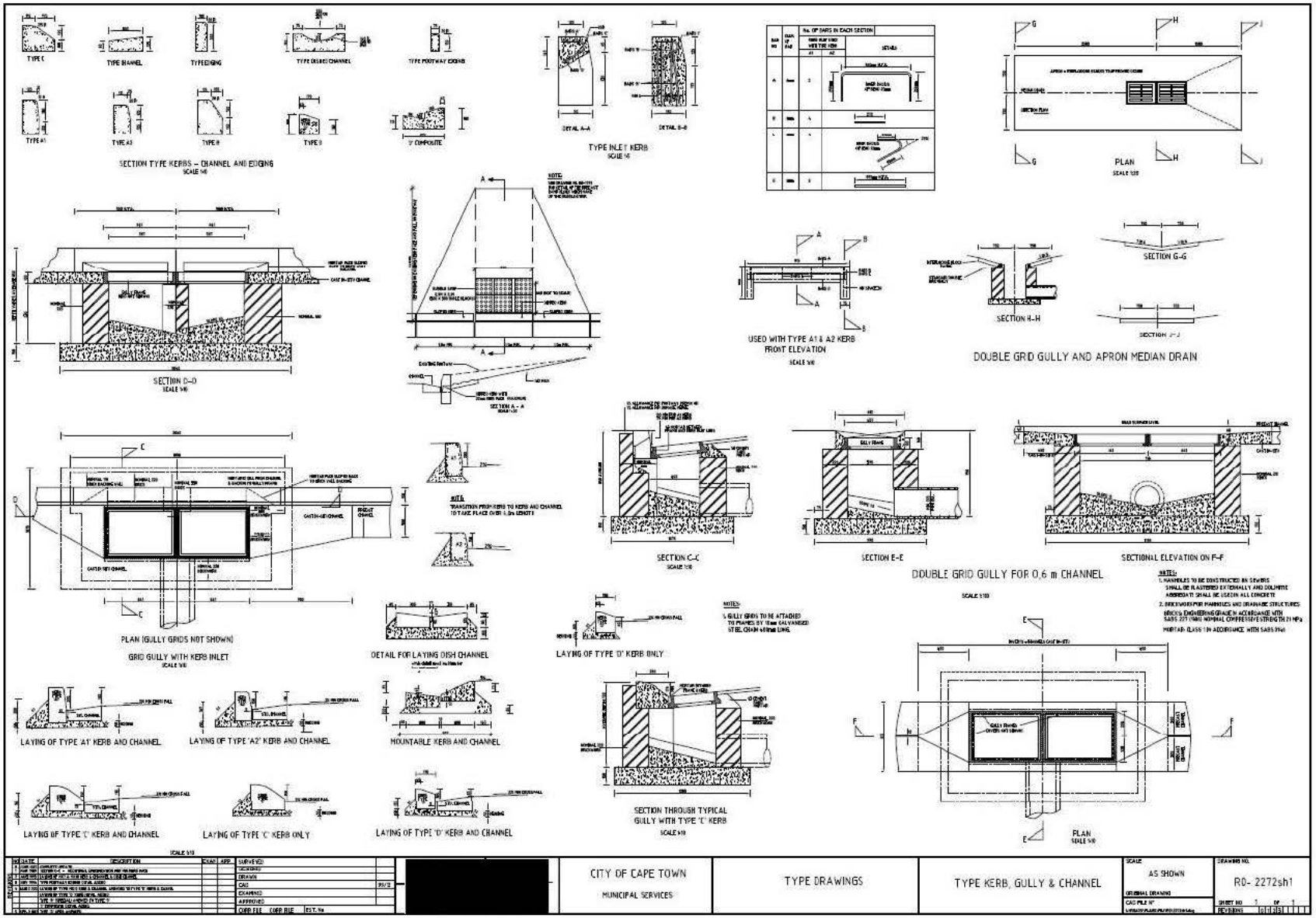

- RETICULATION -
4 REGIONAL MODEL 2023
REGION 3
REGION 4
REGION 2
REGION 1
4 REGIONAL MODEL MANAGERS (WATER & SEWER)
REGION
MANAGERS
SERVICE
TELEPHONE
MAIL
MOBILE
NAME
Address
Legend:
Reticulation 4 Regional Model (2023)
REGION 1
REGION 2
REGION 3
REGION 4
5 2.5 0 5 Kilometers
CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD
WDM GIS TS
October 2023

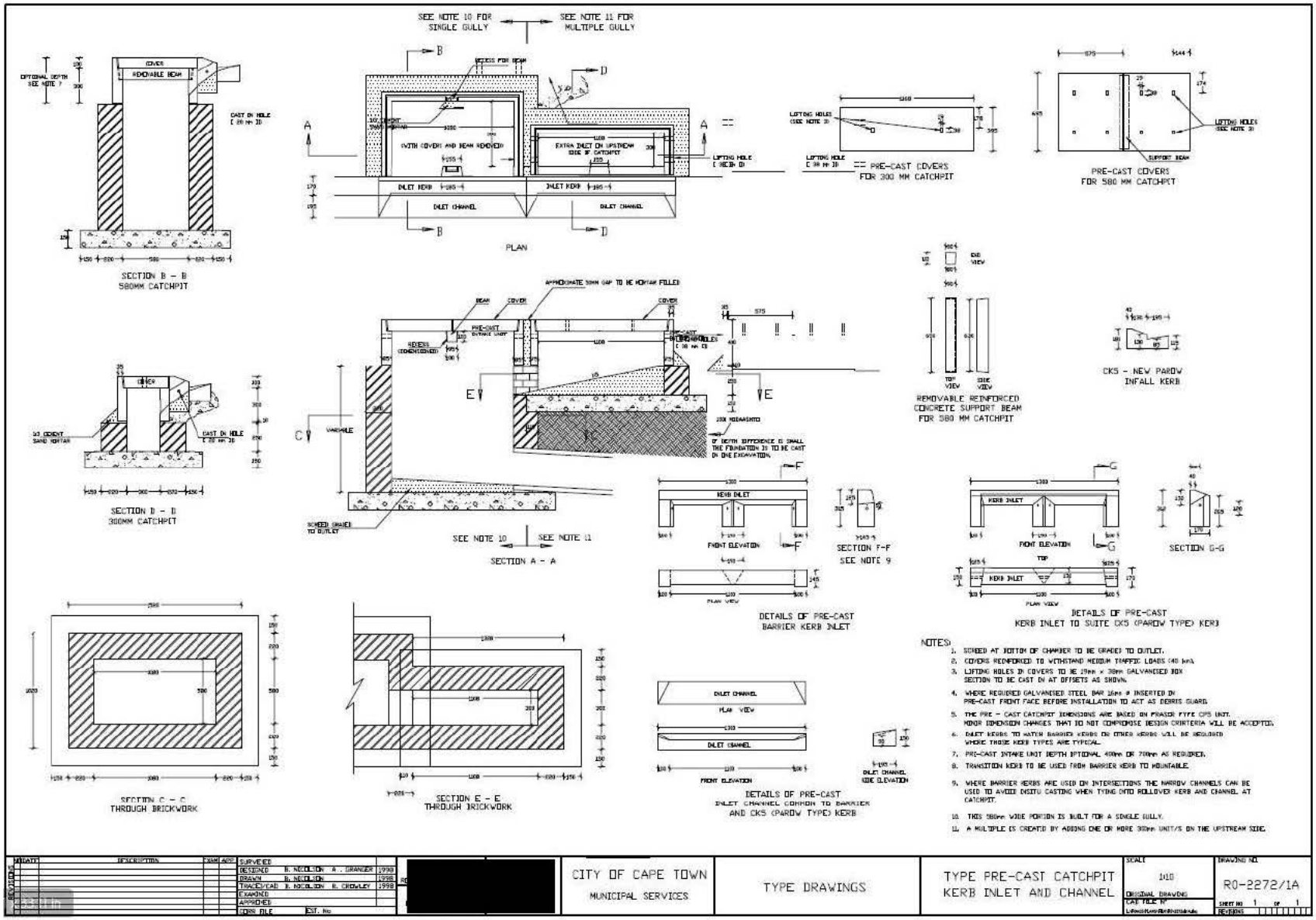
C4.2 Drawings

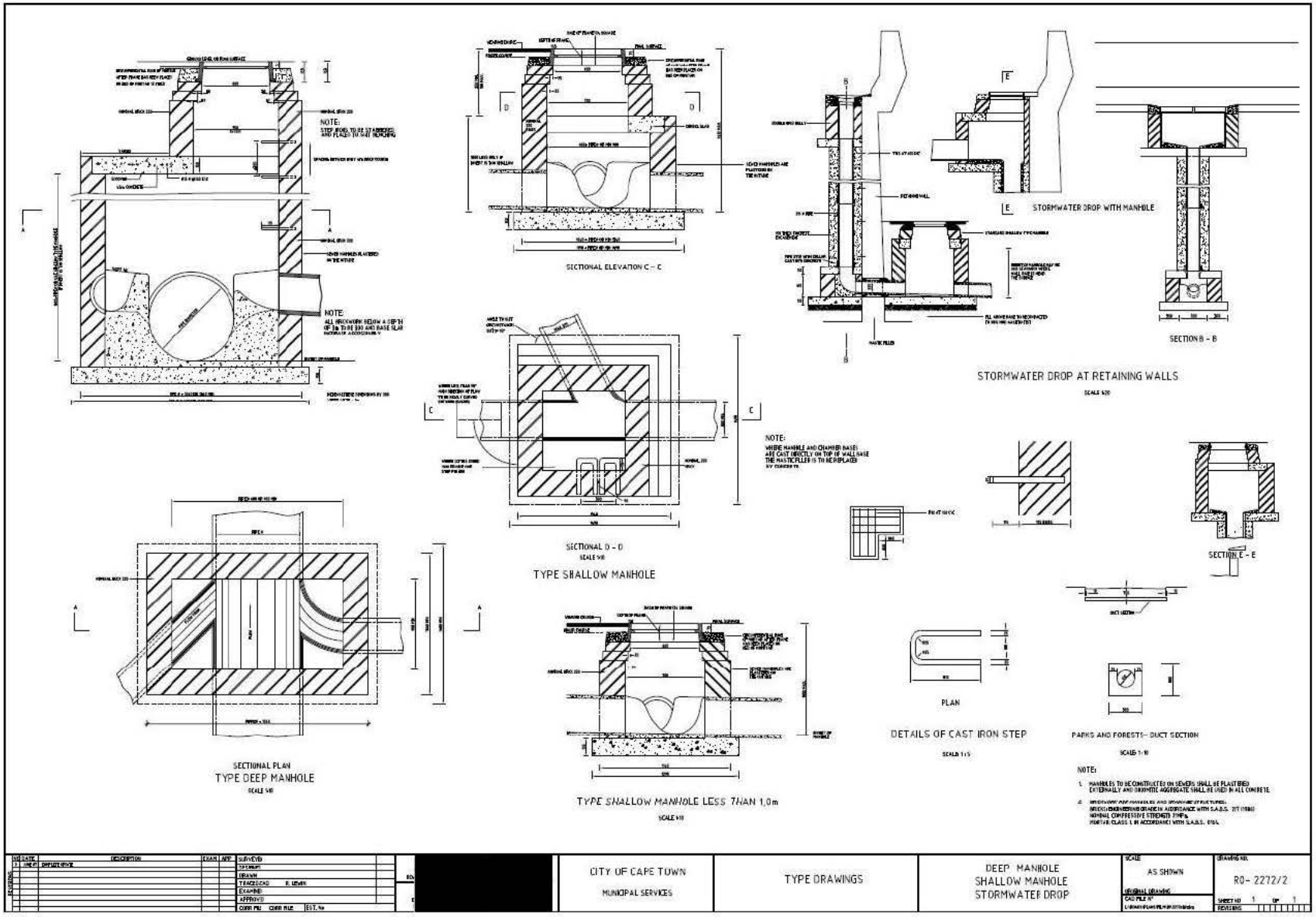
The Works shall be carried out in accordance with the following drawings which are included at the back of this document and form part of the contract documents:

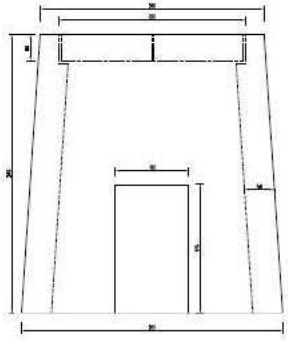
DRAWING NUMBERS	DRAWING DESCRIPTION
R0-2272sh1	Type Kerb, Gully & Channel
R0-2272/1A	Type Pre-Cast Catchpit Kerb Inlet and Channel
R0-2272/2	Deep Manhole, Shallow Manhole, Stormwater Drop
R0-2272/5	Valve Box: Stormwater Outfall and various others
R0-2272/8	Precast Concrete Manhole Types of Trench Bedding
W1	Valve Chamber
W2	Hydrant Chamber
W3	Typical House Connections
W3-AV-001	Air Valve Detail
W4	Typical Water Meter Chamber
W4-C-001	Cover and Cap for Sluice (Gate) Valves
W4-C-005	Cover and Frame (Polymer Concrete) for Hydrant
W4-F-001	Fire Hydrant Chamber Detail and Positioning thereof
W4-F-002	Fire Hydrant Assembly Detail
W4-F-003	Fire Hydrant 90° Steel Bend

W4-F-007	Fire Hydrant Nozzle with 100mm Flange
W4-G-005	Thrust Block Schedule for Bends
W4-G-006	Thrust Block Schedule for Tee's
W4-V-001	Chamber for Plain Ended, Flanged and Socketed Sluice (Gate) Valves (100mm dia. – 300mm dia)
RD16.1	Reinstatement of Shallow Trenches in Road Reserves: Trenches in Roadways
RD16.2	Reinstatement of Shallow Trenches in Road Reserves: Trenches in Pedestrian Footways and Verges

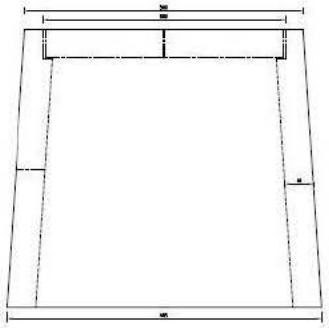

TYPE C
TYPE H/ANEL
TYPE EDGING
TYPE DISHED CHANNEL
TYPE FOOTWAY EDGING
TYPE A1
TYPE A3
TYPE B
TYPE D
'D' COMPOSITE
SECTION TYPE KERBS – CHANNEL AND EDGING
SCALE 1:10
DETAIL A-A
DETAIL B-B
TYPE INLET KERB
SCALE 1:10
No. OF BARS IN EACH SECTION
PLAN
SCALE 1:20
SECTION D-D
SCALE 1:10
SECTION A - A
SCALE 1:10
USED WITH TYPE A1 & A2 KERB
FRONT ELEVATION
SCALE 1:10
SECTION G-G
SECTION H-H
DOUBLE GRID GULLY AND APRON MEDIAN DRAIN
PLAN (GULLY GRIDS NOT SHOWN)
GRID GULLY WITH KERB INLET
SCALE 1:10
NOTE
TRANSITION FROM KERB TO KERB AND CHANNEL TO TAKE PLACE OVER 1.0m LENGTH
SECTION C-C
SCALE 1:10
SECTION E-E
SECTIONAL ELEVATION ON F-F
DOUBLE GRID GULLY FOR 0.6 m CHANNEL
SCALE 1:10
NOTES:
1. MANHOLES TO BE CONSTRUCTED IN SEWERS SHALL BE PLASTERED EXTERNALLY AND DOLIMITE ASBREDATI SHALL BE USED IN ALL CONCRETE
2. BRICKWORK FOR MANHOLES AND DRAINAGE STRUCTURES BRICK'S ENGINEERING GRADE 'N' ACCORDANCE WITH SABS 227 (1980) NOMINAL COMPRESSIVE STRENGTH 21 MPa
MORTAR: CLASS 'I(N)' ACCORDANCE WITH SABS 3746
DETAIL FOR LAYING DISH CHANNEL
LAYING OF TYPE 'D' KERB ONLY
NOTES:
1. GULLY GRIDS TO BE ATTACHED TO FRAMES BY 10mm GALVANISED STEEL CHAIN WITHIN LINK.
LAYING OF TYPE 'A1' KERB AND CHANNEL
LAYING OF TYPE 'A2' KERB AND CHANNEL
MOUNTABLE KERB AND CHANNEL
LAYING OF TYPE 'C' KERB AND CHANNEL
LAYING OF TYPE 'C' KERB ONLY
LAYING OF TYPE 'D' KERB AND CHANNEL
SECTION THROUGH TYPICAL GULLY WITH TYPE 'C' KERB
SCALE 1:10
PLAN
SCALE 1:10
SCALE 1:10
CITY OF CAPE TOWN
MUNICIPAL SERVICES
TYPE DRAWINGS
TYPE KERB, GULLY & CHANNEL
AS SHOWN
R0- 2272sh1


SEE NOTE 10 FOR SINGLE GULLY
SEE NOTE 11 FOR MULTIPLE GULLY
PLAN
SECTION B - B
580MM CATCHPIT
PRE-CAST COVERS
FOR 300 MM CATCHPIT
PRE-CAST COVERS
FOR 580 MM CATCHPIT
SECTION D - D
300MM CATCHPIT
SECTION A - A
SEE NOTE 10
SEE NOTE 11
REMOVABLE REINFORCED
CONCRETE SUPPORT BEAM
FOR 580 MM CATCHPIT
CK5 - NEW PAROW
INFALL KERB
DETAILS OF PRE-CAST
BARRIER KERB INLET
SECTION F-F
SEE NOTE 9
DETAILS OF PRE-CAST
KERB INLET TO SUITE CK5 (PAROW TYPE) KERB
SECTION G-G
SECTION C - C
THROUGH BRICKWORK
SECTION E - E
THROUGH BRICKWORK
DETAILS OF PRE-CAST
INLET CHANNEL COMMON TO BARRIER
AND CK5 (PAROW TYPE) KERB
NOTES
1. SCREED AT BOTTOM OF CHAMBER TO BE GRADED TO OUTLET.
2. COVERS REINFORCED TO WITHSTAND MEDIUM TRAFFIC LOADS (40 kPa
3. LIFTING HOLES IN COVERS TO BE 25mm x 38mm GALVANISED BOX SECTION TO BE CAST IN AT OFFSETS AS SHOWN.
4. WHERE REQUIRED GALVANISED STEEL BAR 16mm ø INSERTED IN PRE-CAST FRONT FACE BEFORE INSTALLATION TO ACT AS DEBRIS GUARD.
5. THE PRE - CAST CATCHPIT DIMENSIONS ARE BASED ON FRASER TYPE CPS UNIT. MINOR DIMENSION CHANGES THAT DO NOT COMPROMISE DESIGN CRITERIA WILL BE ACCEPTED.
6. INLET KERBS TO MATCH BARRIER KERBS OR OTHER KERBS WILL BE REQUIRED WHERE THOSE KERB TYPES ARE TYPICAL.
7. PRE-CAST INTAKE UNIT DEPTH OPTIONAL 400mm OR 700mm AS REQUIRED.
8. TRANSITION KERB TO BE USED FROM BARRIER KERB TO MOUNTABLE.
9. WHERE BARRIER KERBS ARE USED ON INTERSECTIONS THE NARROW CHANNELS CAN BE USED TO AVOID INSITU CASTING WHEN TYING INTO ROLLOVER KERB AND CHANNEL AT CATCHPIT.
10. THIS 580mm WIDE PORTION IS BUILT FOR A SINGLE GULLY.
11. A MULTIPLE IS CREATED BY ADDING ONE OR MORE 300mm UNITS ON THE UPSTREAM SIDE.
CITY OF CAPE TOWN
MUNICIPAL SERVICES
TYPE DRAWINGS
TYPE PRE-CAST CATCHPIT
KERB INLET AND CHANNEL
RO-2272/1A


NOTE:
STEP IRONS TO BE SET 4 ABREAST AND PLACED TO SUIT BENCHING
NOTE:
ALL BRICKWORK BELOW A DEPTH OF 3m TO BE 230 AND BASE SLAB
SECTIONAL ELEVATION C – C
STORMWATER DROP WITH MANHOLE
SECTION B – B
STORMWATER DROP AT RETAINING WALLS
SECTIONAL D – D
SCALE 1:10
TYPE SHALLOW MANHOLE
NOTE:
WHERE MANHOLE AND CHAMBER BASES ARE CAST DIRECTLY ON TOP OF WALL BASE THE MASTIC FILLER IS TO BE REPLACED
SECTION E – E
SECTIONAL PLAN
TYPE DEEP MANHOLE
SCALE 1:10
TYPE SHALLOW MANHOLE LESS THAN 1,0m
SCALE 1:10
PLAN
DETAILS OF CAST IRON STEP
SCALE 1:5
PARKS AND FORESTS – DUCT SECTION
SCALE 1:10
NOTE:
1. MANHOLES TO BE CONSTRUCTED IN SEWERS SHALL BE PLASTERED EXTERNALLY AND DRIKNITE AGGREGATE SHALL BE USED IN ALL CONCRETE
2. BRICKWORK AND MANHOLES AND STORMWATER STRUCTURES
BRICKS/BLOCKS/MORTAR GRADE IN ACCORDANCE WITH S.A.B.S. 227 (1988)
NOMINAL COMPRESSIVE STRENGTH 27MPa
MORTAR: CLASS 1 IN ACCORDANCE WITH S.A.B.S. 0164
CITY OF CAPE TOWN
MUNICIPAL SERVICES
TYPE DRAWINGS
DEEP MANHOLE
SHALLOW MANHOLE
STORMWATER DROP
AS SHOWN
R0-2272/2

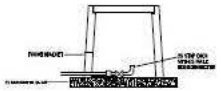


FRONT ELEVATION
SCALE 1:2

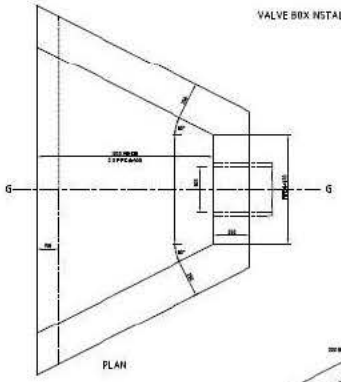


SIDE ELEVATION
SCALE 1:2

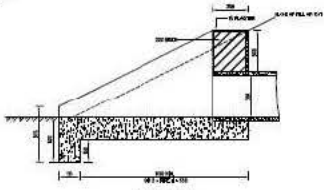
NOTE:
[illegible] SQUARE X [illegible] dia MESH REINFORCEMENT IN WALLS AND SLAB



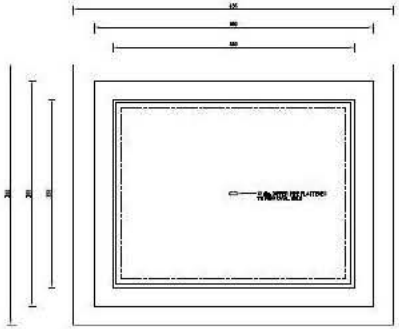
VALVE BOX INSTALLATION



PLAN

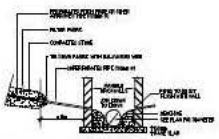


SECTION G-G
SCALE 1:10

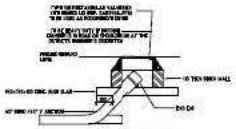


PLAN - PRECAST CONCRETE VALVE BOX
SCALE 1:2

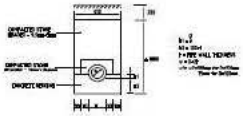
NOTE:
[illegible]
TO THE SAME INTERNAL DIMENSIONS WITHIN AS SHOWN



LAYING IF SUBSURFACE DRAIN AT MANHOLE
SCALE 1:100



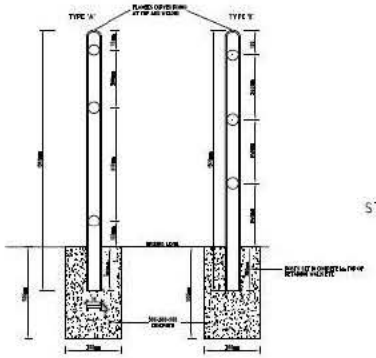
RODDING EYE DETAIL
SCALE 1:100



SUB - SURFACE DRAIN (A)
SCALE 1:20



SUB - SURFACE DRAIN (B)
SCALE 1:20



CHANNEL SECTION FENCE STANDARD TYPE DRAWING
SCALE 1:10



SUB - SURFACE DRAIN (C)
SCALE 1:20

STANDARD SUBSURFACE DRAINAGE DETAILS

STORMWATER OUTFALL

NO	DATE	DESCRIPTION	CHAN	APP
1	99/01	COMPLETE REVISION		
2	00/07	GEOMEMBRANE REMOVED		
3	00/09	Changed Outfall Pipe Bed Level to suit site		
4	00/10	Added Retaining Wall Detail, Updated Fence Detail		

SURVEYED
DESIGNED
DRAWN
CAD R. LEWIS 99/12
EXAMINED A.N. HEMSHALL - EDWARDS 00/01
APPROVED
ORR FILE ORR FILE EST. No

[redacted]

CITY OF CAPE TOWN
MUNICIPAL SERVICES

TYPE DRAWINGS

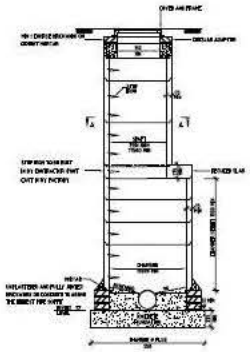
VALVE BOX: STORMWATER OUTFALL AND VARIOUS OTHERS

SCALE: AS SHOWN
GENERAL DRAWING
CAD FILE
LANDSCAPED PLAN

DRAWING NO.: R0- 2272/5
SHEET NO 1 OF 1
REVISIONS

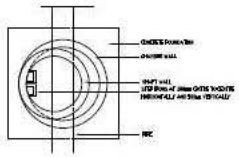
NOTES:

1. USE THE CITY OF CAPE TOWN CAST IRON MANHOLE COVERS AND FRAMES AS DETAILED ON PLAN RO-3717/3. COVERS TO BE OF SOLID TYPE EXCEPT FOR STORMWATER MANHOLES LOCATED IN SLACKS OR DEPRESSIONS.
2. FOR SEWER MANHOLES USE DOLOMITE AGGREGATE. ALL DOLOMITE COMPONENTS TO BE CLEARLY MARKED AS SPECIFIED ON DETAILS.
3. STEP IRONS SHALL BE OF CAST IRON IN ACCORDANCE WITH SABS 1084-1975 FOR GRADE 250 GREY IRON CASTINGS. OR APPROVED ACCEPTABLE ALTERNATIVE AND SHALL BE RIGID IN AT 300mm CENTRES VERTICALLY WITH ALTERNATE STEP IRONS PLACED HORIZONTALLY AT 710mm CENTRE TO CENTRE.
4. THE TOP STEP IRON SHALL NOT BE CLOSER THAN 550mm TO OR FURTHER THAN 750mm FROM TOP OF MANHOLE COVER.
5. A STEP IRON MUST BE CAST IN TO THE REDUCER SLAB IN THE FACTORY OR ALTERNATIVELY BUILT INTO THE CONTRACTOR
6. MANHOLE SHAFTS MUST BE LOCATED AS CLOSELY AS POSSIBLE TO THE CENTRE OF THE ROAD REserve AND KERB LINES.
7. THE SHAFT SHALL BE SUPPORTED ON REDUCER SLAB OF MIN THICKNESS 175mm WITH A CIRCULAR APERTURE OF SAME DIAMETER AS THE INSIDE DIAMETER OF THE SHAFT AND OF SUITABLE CONSTRUCTION TO ENSURE THAT THE SHAFT WILL NOT BE DISPLACED.
8. DEPTHS OF RING SECTIONS TO BE IN MULTIPLES OF 150mm.
9. MIN WALL THICKNESS OF BOTH SHAFT AND CHAMBER TO BE 75mm.
10. MIN WIDTH IF BENCHING AT WIDEST PART OF MANHOLE TO BE 200mm.
11. ALL JOINTS TO BE SEALED WITH AN APPROVED JOINT SEALANT.
12. IN ALL RESPECTS OTHER THAN THOSE DETAILED ON THIS DRAWING, MANHOLES TO COMPLY WITH SABS 1294 (LATEST EDITION).
13. REFER TO DRAWING RO- 3890.
14. FOR MANHOLES WITH A DEPTH LESS THAN 1000 TO THE COVER, FRAME, BRICKWORK AND CIRCULAR ADAPTOR ARE TO BE PLACED DIRECTLY ONTO THE REDUCER SLAB, TO ACHIEVE MAXIMUM CHAMBER HEIGHT.



SECTIONAL ELEVATION

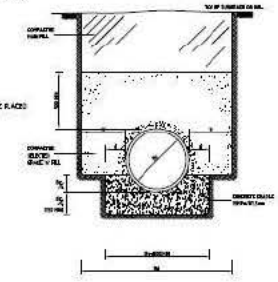
SCALE 1:20



SECTION A – A

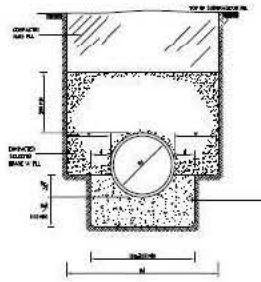
SCALE 1:20

TYPE DRAWING OF PRECAST CONCRETE MANHOLE FOR PIPE SIZES NOT EXCEEDING 525mm



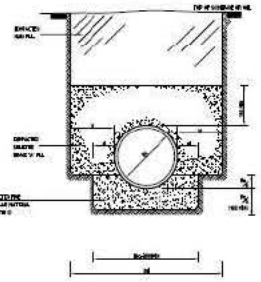
CLASS 'A' BEDDING

NTS



CLASS 'B' BEDDING

NTS



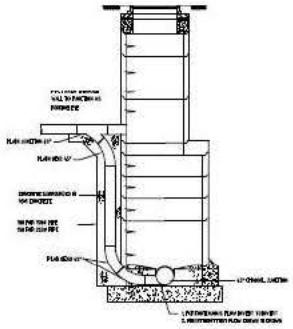
CLASS 'C' BEDDING

NTS

NOTES:

1. DIMENSION 'B' = NOMINAL PIPE DIAMETER
2. 375=M-525
3. 4=150
4. CONCRETE PIPES USED FOR SEWER TO COMPRISE LINE STONE AGGREGATE ONLY.
5. BEDDING OF SEWER MATERIALS ACCORDING TO SABS 1200 LB. (GRANULAR)-4

TYPES OF TRENCH BEDDING FOR CONCRETE PIPES



SECTIONAL ELEVATION

SCALE 1:20

TYPE DRAWING FOR PRECAST CONCRETE MANHOLE SHOWING BACKDROP FOR SEWERS ONLY

NO	DATE	DESCRIPTION	CHKD	APP
1	JUNE/01	NEW DRAWING		
2	OCT/01	SUNDRY DETAIL ADDED		
3	OCT/01	DRAWING SHALL BE CHECKED BEFORE USE AND TITLE BLOCK UPDATED		
4	FEB/11	NEW NUMBERS		
5	MAY/16	NEW NUMBER		

SURVEYED	
DESIGNED	
DRAWN	
TRACED/CAD	R. LEWIN 09/12
CHECKED	30/11
APPROVED	
CORR FILE CORR FILE 657.16	

[redacted]

CITY OF CAPE TOWN

MUNICIPAL SERVICES

TYPE DRAWINGS

PRECAST CONCRETE MANHOLE TYPES OF TRENCH BEDDING

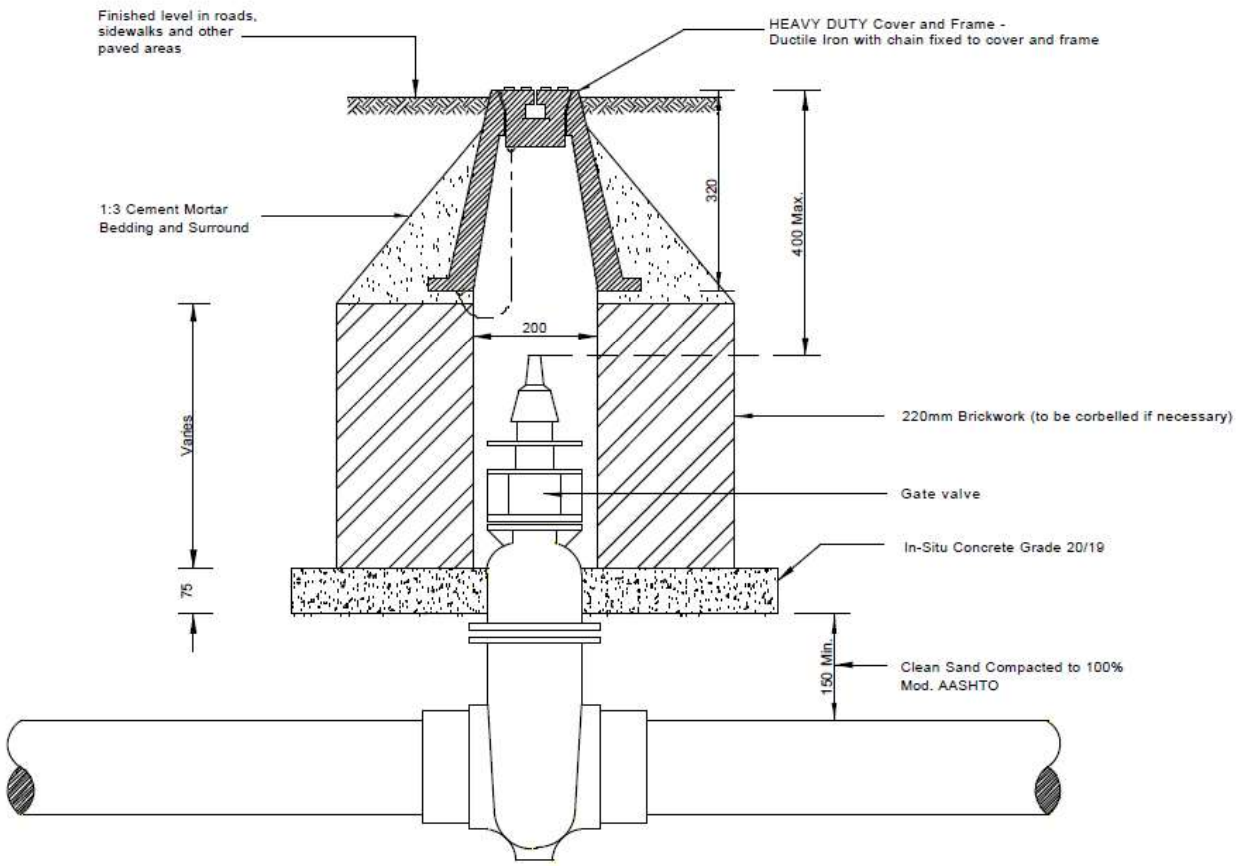
SCALE: AS SHOWN

ORIGINAL DRAWING

DRAWING NO. RO- 2272/8

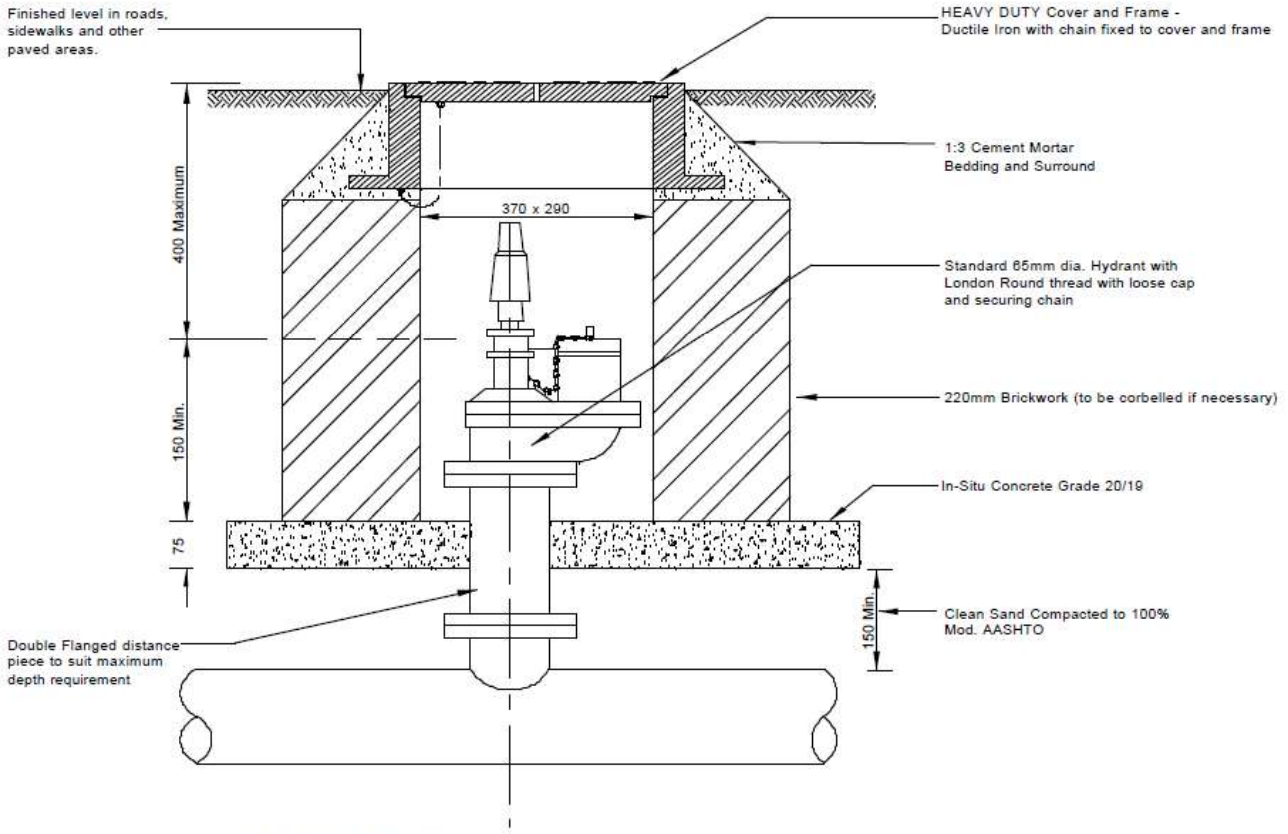
SHEET NO 1 OF 1

REVISIONS



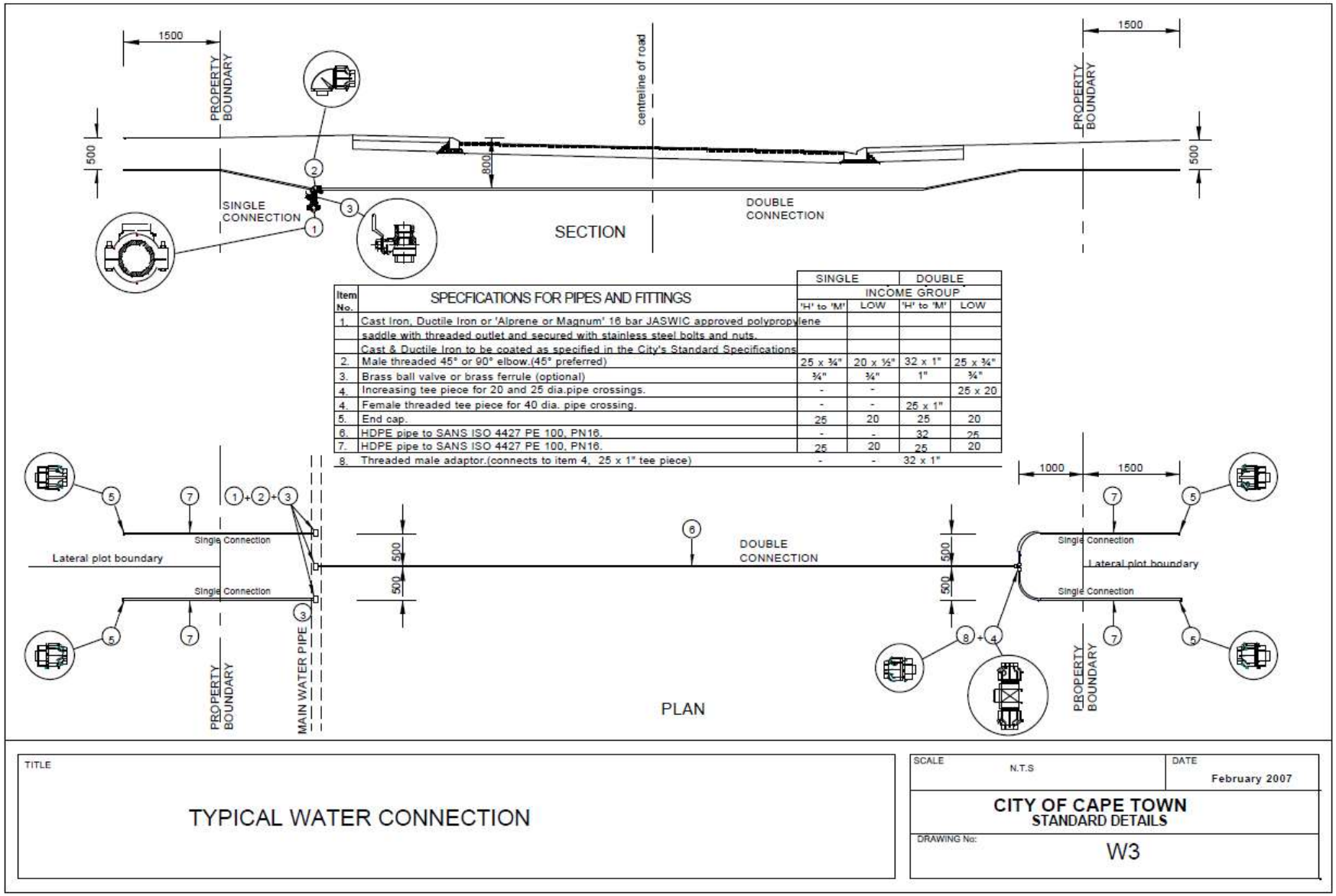
TYPICAL SECTION

TITLE	SCALE	DATE
VALVE CHAMBER	1:10	
	CITY OF CAPE TOWN STANDARD DETAILS	
	DRAWING No: W1	



TYPICAL SECTION

TITLE	SCALE	DATE
HYDRANT CHAMBER	1:10	February 2007
	CITY OF CAPE TOWN STANDARD DETAILS	
	DRAWING No: W2	



Item No.	SPECFICATIONS FOR PIPES AND FITTINGS	SINGLE		DOUBLE	
		INCOME GROUP			
		'H' to 'M'	LOW	'H' to 'M'	LOW
1.	Cast Iron, Ductile Iron or 'Alprene or Magnum' 16 bar JASWIC approved polypropylene saddle with threaded outlet and secured with stainless steel bolts and nuts. Cast & Ductile Iron to be coated as specified in the City's Standard Specifications				
2.	Male threaded 45° or 90° elbow.(45° preferred)	25 x ¾"	20 x ½"	32 x 1"	25 x ¾"
3.	Brass ball valve or brass ferrule (optional)	¾"	¾"	1"	¾"
4.	Increasing tee piece for 20 and 25 dia.pipe crossings.	-	-		25 x 20
4.	Female threaded tee piece for 40 dia. pipe crossing.	-	-	25 x 1"	
5.	End cap.	25	20	25	20
6.	HDPE pipe to SANS ISO 4427 PE 100, PN16.	-	-	32	25
7.	HDPE pipe to SANS ISO 4427 PE 100, PN16.	25	20	25	20
8.	Threaded male adaptor.(connects to item 4, 25 x 1" tee piece)	-	-	32 x 1"	

TITLE

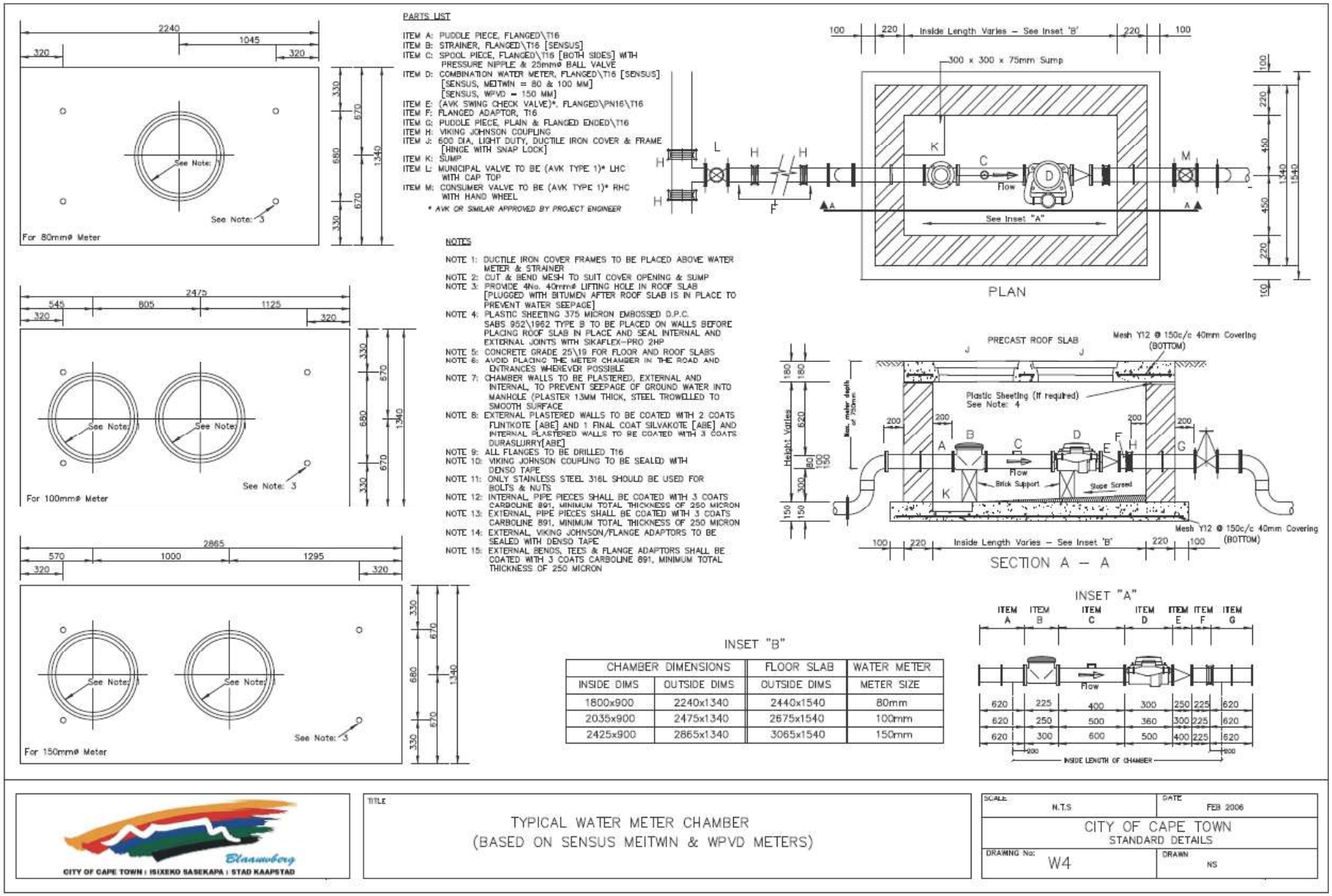
TYPICAL WATER CONNECTION

SCALE N.T.S

DATE February 2007

CITY OF CAPE TOWN
STANDARD DETAILS

DRAWING No: W3



CHAMBER DIMENSIONS		FLOOR SLAB	WATER METER
INSIDE DIMS	OUTSIDE DIMS	OUTSIDE DIMS	METER SIZE
1800x900	2240x1340	2440x1540	80mm
2035x900	2475x1340	2675x1540	100mm
2425x900	2865x1340	3065x1540	150mm

CITY OF CAPE TOWN : ISIXEKO SASEKAPA : STAD KAAPSTAD

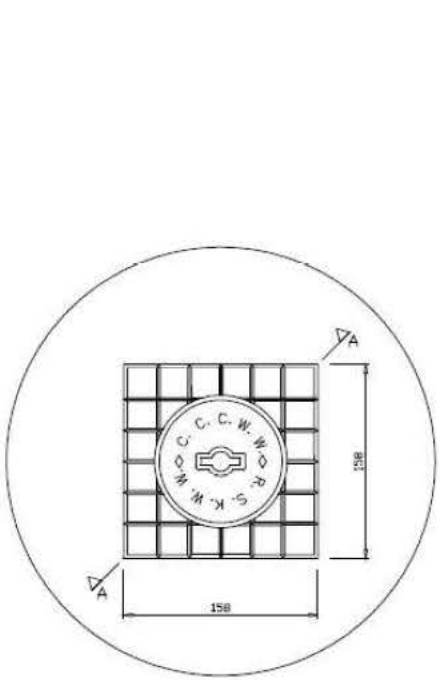
TITLE

TYPICAL WATER METER CHAMBER
(BASED ON SENSUS MEITWIN & WPVD METERS)

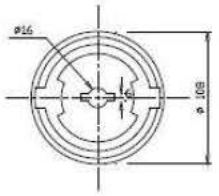
SCALE: N.T.S | DATE: FEB 2006

CITY OF CAPE TOWN
STANDARD DETAILS

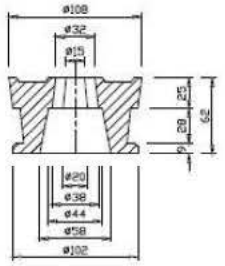
DRAWING No: W4 | DRAWN: NS



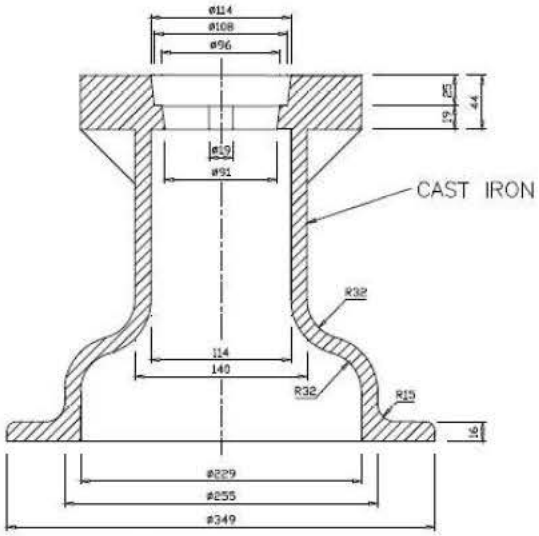
PLAN



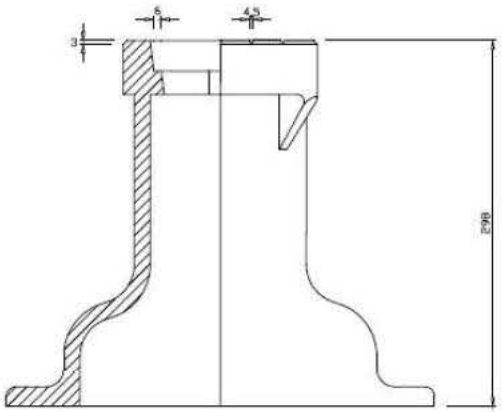
VIEW OF UNDER SIDE OF CAP
(NON-FERROUS MATERIAL)



SECTION THRU CAP



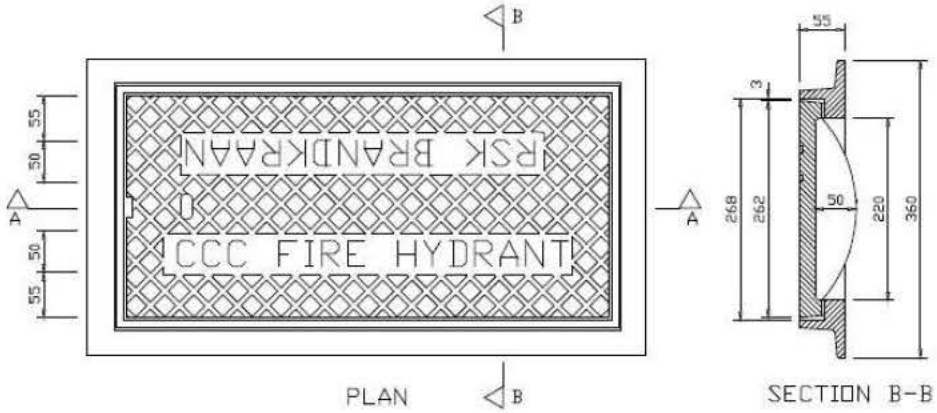
SECTION A-A

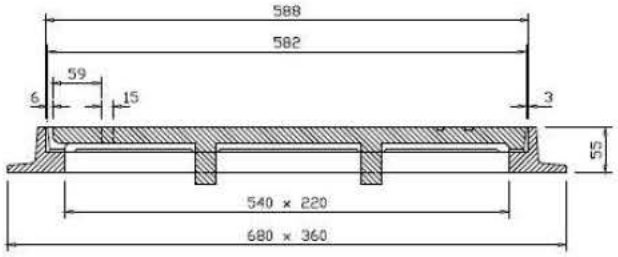


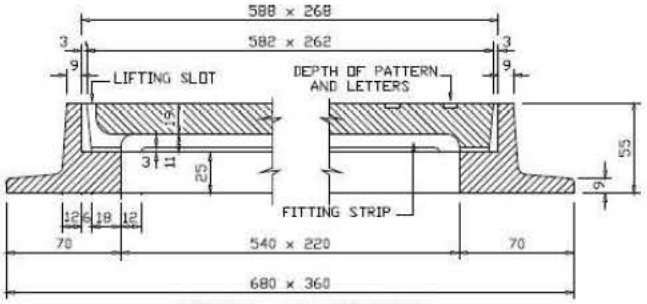
HALF-SECTION FRONT VIEW

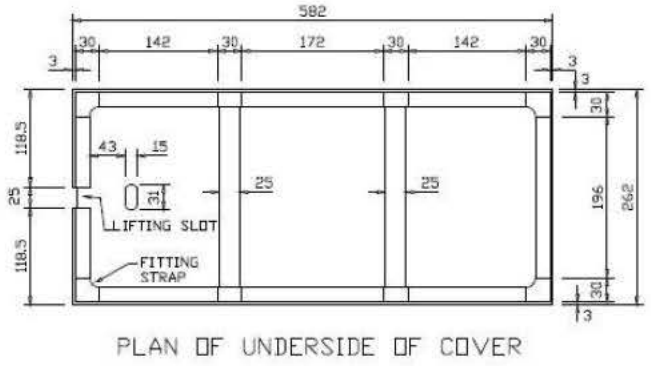
THIS DRAWING SUPERSEDES W0-3046

CITY OF CAPE TOWN SERVICES AND INFRASTRUCTURE [redacted] executive director: services & infrastructure	manager : water	STANDARD DRAWING COVER AND CAP FOR SLUICE (GATE) VALVES	REVISIONS 1 04/08/26 Z.S. Cap was Cast Iron	scale 1 : 5 date 02/11/16	drawing no. W4-C-001 revision suffix 1 drawn C.G.P. / designed / checked







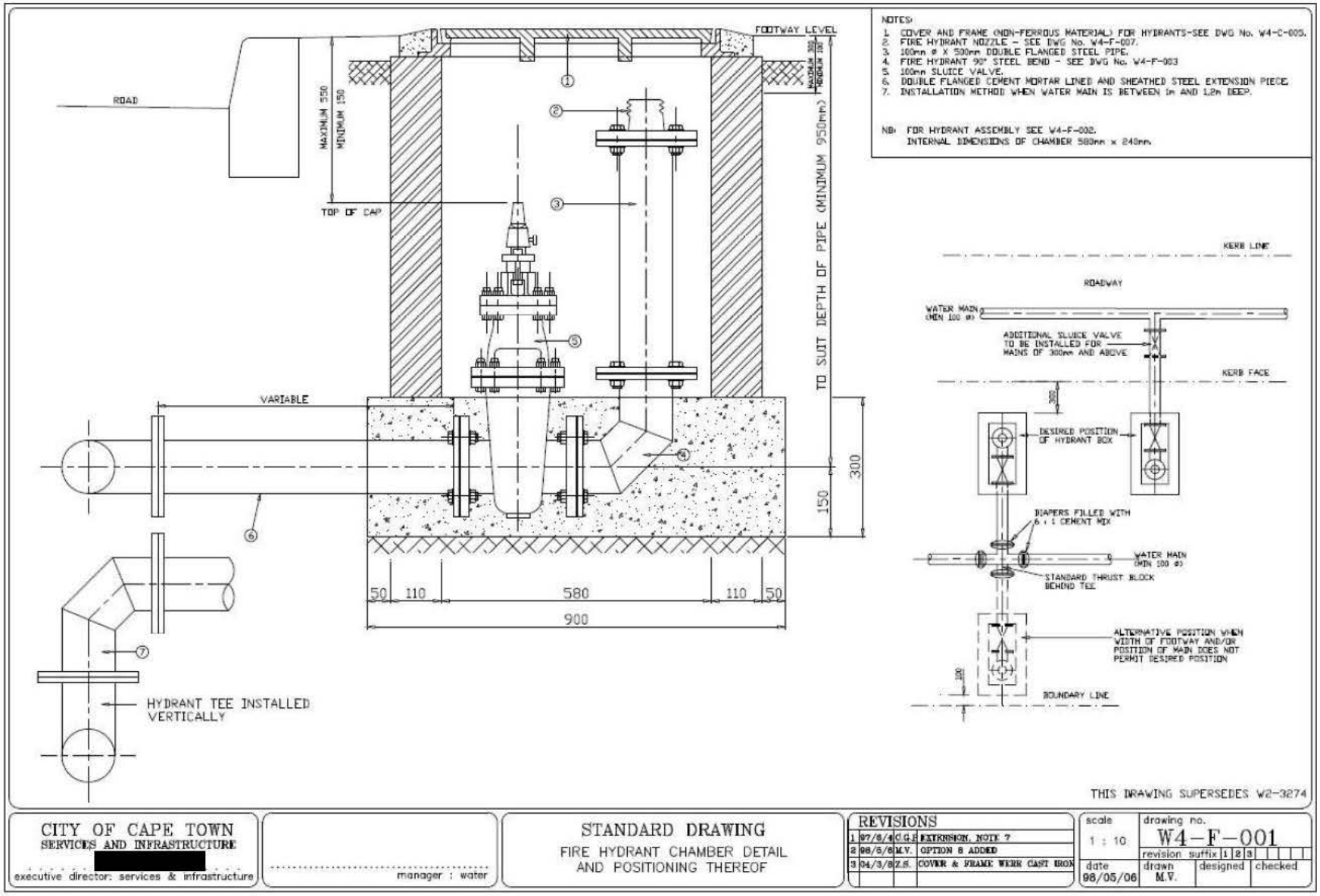


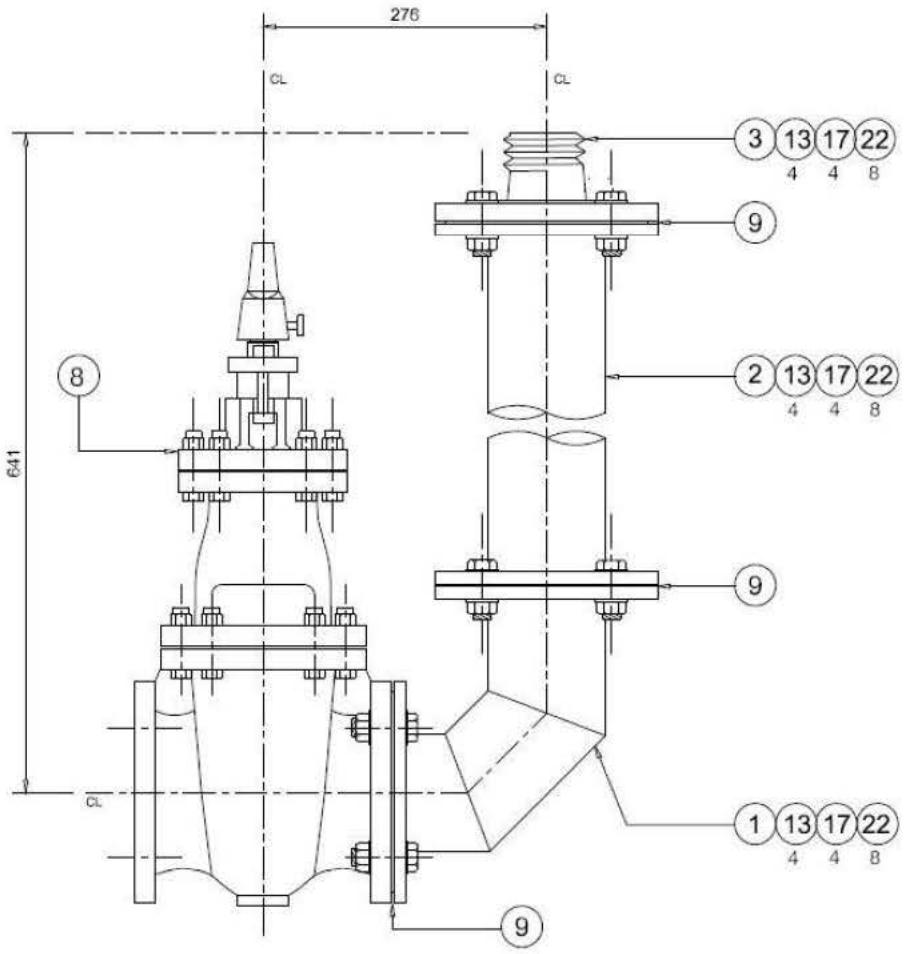
COVER AND FRAMETO BE MANUFACTURED FROM NON-FERROUS MATERIALS TO THE APPROVAL OF COUNCIL
LETTERS ON COVER 31x4x3mm HIGH
SURFACE OF LETTERS LEVEL WITH SURFACE OF SQUARE PATTERN
SQUARES 19mm
GROOVES 6x3mm DEEP
MATERIALS TO BE YELLOW, PIGMENTED NON SLIP SURFACE.

1. FOR POSITION OF FIRE HYDRANT SEE W4-F-001

THIS DRAWING SUPERSEDES W0-3630

CITY OF CAPE TOWN SERVICES AND INFRASTRUCTURE executive director: services & infrastructure	manager : water	STANDARD DRAWING COVER AND FRAME (POLYMER CONCRETE) FOR HYDRANT	REVISIONS 1 | 04/08/28 | Z.S. | Material was Cast Iron scale 1 : 7.5 drawing no. W4-C-005 revision suffix 1 date 03/08/28 drawn M.V. | designed | checked


NOTES:
1. COVER AND FRAME (NON-FERROUS MATERIAL) FOR HYDRANTS-SEE DWG No. W4-C-005.
2. FIRE HYDRANT NOZZLE - SEE DWG No. W4-F-007.
3. 100mm ø X 500mm DOUBLE FLANGED STEEL PIPE.
4. FIRE HYDRANT 90° STEEL BEND - SEE DWG No. W4-F-003
5. 100mm SLUICE VALVE.
6. DOUBLE FLANGED CEMENT MORTAR LINED AND SHEATHED STEEL EXTENSION PIECE.
7. INSTALLATION METHOD WHEN WATER MAIN IS BETWEEN 1m AND 1,2m DEEP.
NB: FOR HYDRANT ASSEMBLY SEE W4-F-002.
INTERNAL DIMENSIONS OF CHAMBER 580mm x 240mm.
FOOTWAY LEVEL
ROAD
MAXIMUM 550
MINIMUM 150
TOP OF CAP
TO SUIT DEPTH OF PIPE (MINIMUM 950mm)
VARIABLE
150
300
50
110
580
110
50
900
HYDRANT TEE INSTALLED VERTICALLY
KERB LINE
ROADWAY
WATER MAIN (MIN 100 ø)
ADDITIONAL SLUICE VALVE TO BE INSTALLED FOR MAINS OF 300mm AND ABOVE
KERB FACE
DESIRED POSITION OF HYDRANT BOX
DIAPERS FILLED WITH 6 : 1 CEMENT MIX
WATER MAIN (MIN 100 ø)
STANDARD THRUST BLOCK BEHIND TEE
ALTERNATIVE POSITION WHEN WIDTH OF FOOTWAY AND/OR POSITION OF MAIN DOES NOT PERMIT DESIRED POSITION
BOUNDARY LINE
THIS DRAWING SUPERSEDES W2-3274
CITY OF CAPE TOWN
SERVICES AND INFRASTRUCTURE
[redacted]
executive director: services & infrastructure
manager : water
STANDARD DRAWING
FIRE HYDRANT CHAMBER DETAIL AND POSITIONING THEREOF
REVISIONS
1 97/6/4 C.G.H EXTENSION, NOTE 7
2 98/6/8 M.V. OPTION B ADDED
3 04/3/8 Z.S. COVER & FRAME WERE CAST IRON
scale 1 : 10
drawing no. W4-F-001
revision suffix 1 2 3
date 98/05/06
drawn M.V.
designed
checked



ITEM	DESCRIPTION	DRAWING/ PART NO.	QTY.	REMARKS
1.	100mm Ø 90° STEEL BEND	W4-F-003	1	
2.	100mm Ø x 500mm DOUBLE FLANGED PIPE		1	
3.	65mm Ø STEEL NOZZLE	W4-F-007	1	
4.				
5.				
6.				
7.				
8.	100mm D.F. SLUICE VALVE		1	
9.	RUBBER INSERTION		AS REQUIRED	
10.				
11.				
12.				
13.	HEXAGONAL BOLT M16 x 60		12	
14.				
15.				
16.				
17.	HEXAGONAL NUTS M16		12	
18.				
19.				
20.				
21.				
22.	FLAT WASHERS (BRIGHT) 16		24	
23.	FLAT WASHERS (BRIGHT) 14		3	
24.				
25.				

THIS DRAWING SUPERSEDES W1-3019

CITY OF CAPE TOWN
SERVICES AND INFRASTRUCTURE
executive director: services & infrastructure

manager : water

STANDARD DRAWING

FIRE HYDRANT ASSEMBLY DETAIL

REVISIONS

1	02/02	M.V	OPTION No. 5 ADDED
2	04/3/8	Z.S.	REDUCER FLANGE & NOZZLE COMBINED

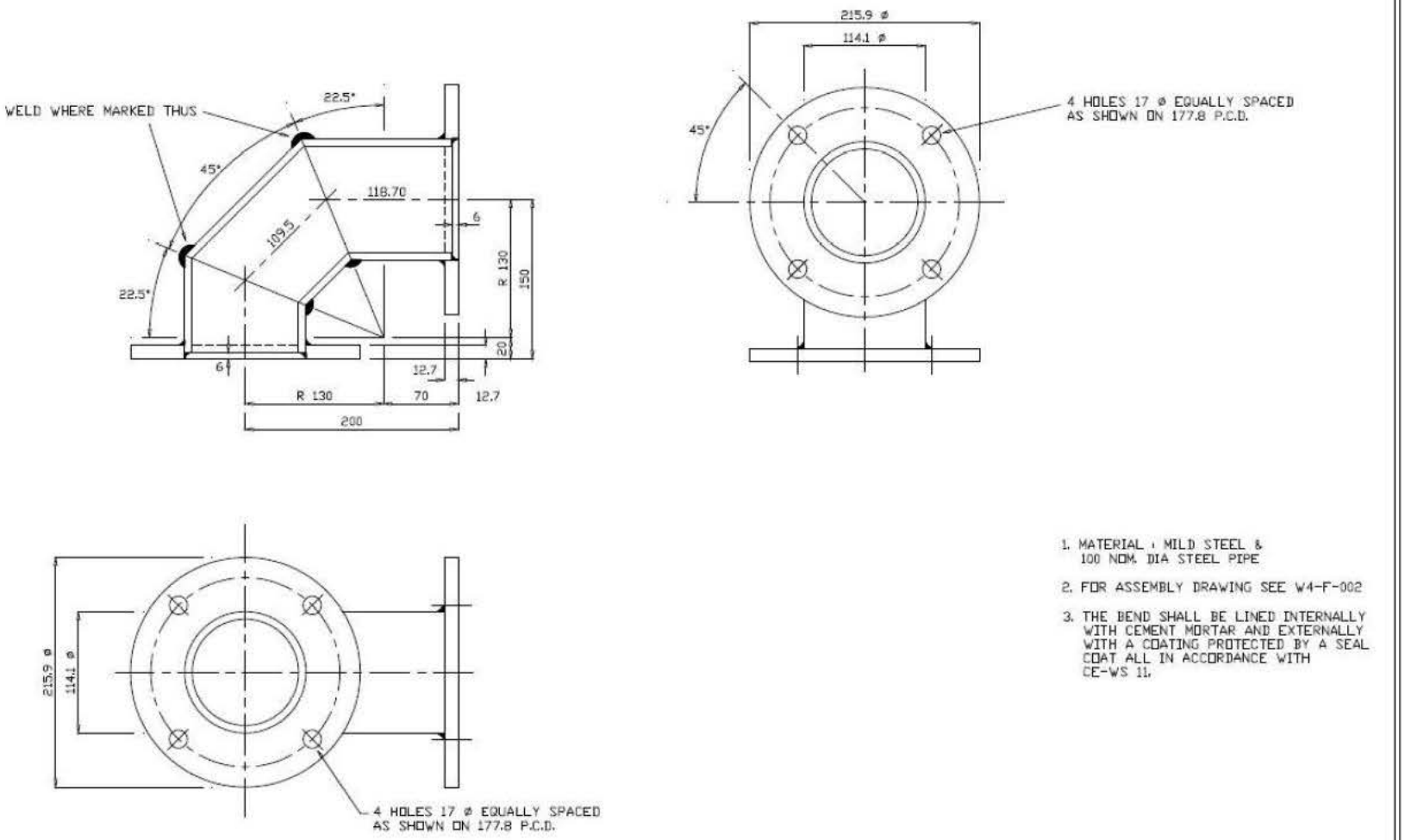
scale 1 : 6

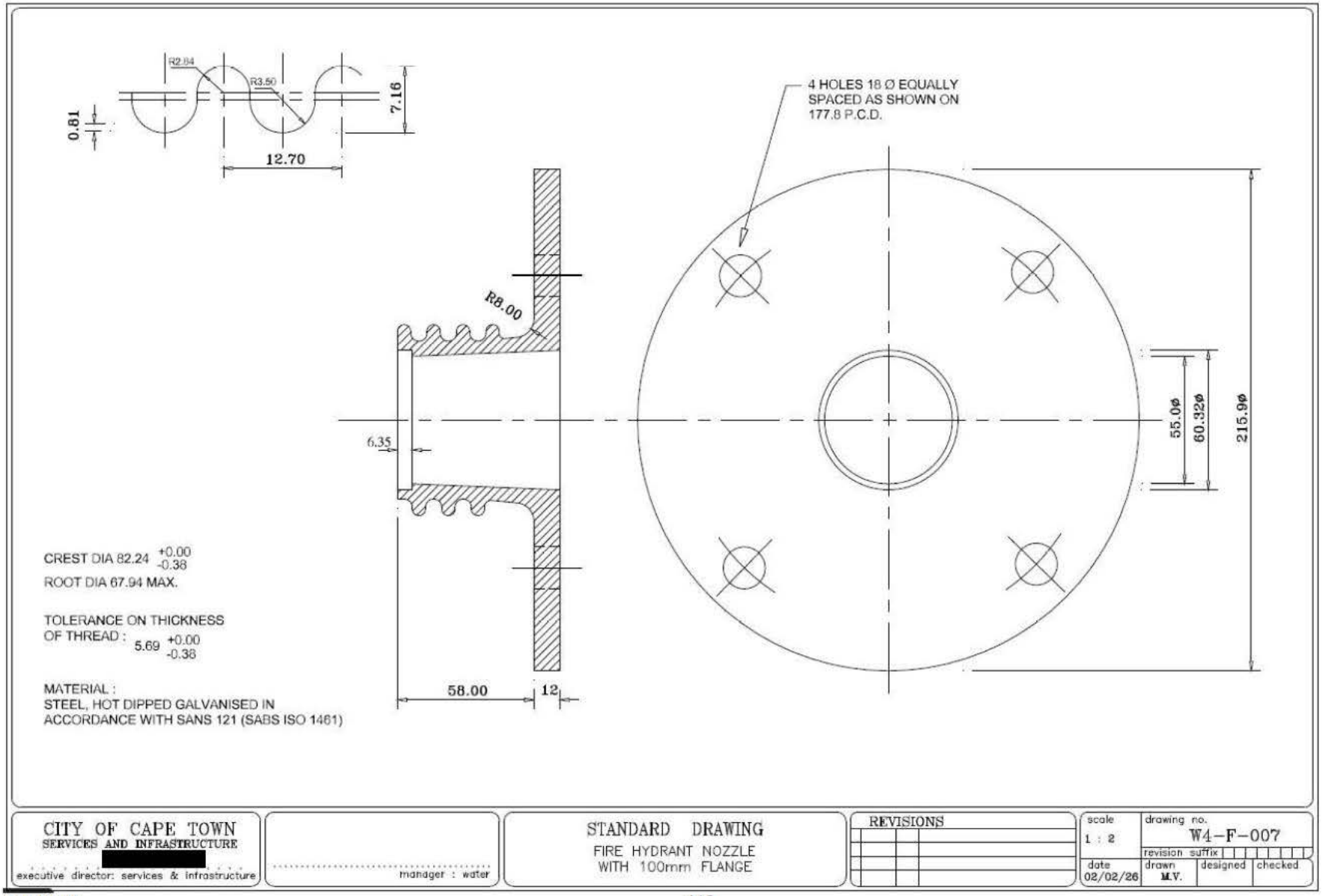
drawing no. W4-F-002

revision suffix 1 2

date 93/01/13

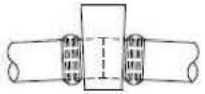
drawn P.C.R. | designed | checked


WELD WHERE MARKED THUS
22.5°
45°
118.70
109.5
6
R 130
150
22.5°
20
6
12.7
R 130
70
12.7
200
215.9 ø
114.1 ø
45°
4 HOLES 17 ø EQUALLY SPACED
AS SHOWN ON 177.8 P.C.D.
215.9 ø
114.1 ø
4 HOLES 17 ø EQUALLY SPACED
AS SHOWN ON 177.8 P.C.D.
1. MATERIAL : MILD STEEL &
100 NOM. DIA STEEL PIPE
2. FOR ASSEMBLY DRAWING SEE W4-F-002
3. THE BEND SHALL BE LINED INTERNALLY
WITH CEMENT MORTAR AND EXTERNALLY
WITH A COATING PROTECTED BY A SEAL
COAT ALL IN ACCORDANCE WITH
CE-WS 11.
THIS DRAWING SUPERSEDES W1-2728
CITY OF CAPE TOWN
SERVICES AND INFRASTRUCTURE
executive director: services & infrastructure
manager : water
STANDARD DRAWING
FIRE HYDRANT 90° STEEL BEND
REVISIONS
scale
1 : 5
drawing no.
W4-F-003
revision suffix
date
92/12/08
drawn
M.V.
designed
checked

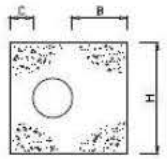

R2.84
R3.50
0.81
7.16
12.70
4 HOLES 18 Ø EQUALLY
SPACED AS SHOWN ON
177.8 P.C.D.
R8.00
6.35
55.0ø
60.32ø
215.9ø
58.00
12
CREST DIA 82.24 +0.00 -0.38
ROOT DIA 67.94 MAX.
TOLERANCE ON THICKNESS
OF THREAD : 5.69 +0.00 -0.38
MATERIAL :
STEEL, HOT DIPPED GALVANISED IN
ACCORDANCE WITH SANS 121 (SABS ISO 1461)
CITY OF CAPE TOWN
SERVICES AND INFRASTRUCTURE
executive director: services & infrastructure
manager : water
STANDARD DRAWING
FIRE HYDRANT NOZZLE
WITH 100mm FLANGE
REVISIONS
scale 1 : 2
drawing no. W4-F-007
revision suffix
date 02/02/26
drawn M.V.
designed
checked

DIMENSIONS FOR HORIZONTAL THRUST BLOCKS (mm)

ANGLE	5.125°					11.25°					22.5°					45°					90°				
NOMINAL Ø	A	B	C	D	H	A	B	C	D	H	A	B	C	D	H	A	B	C	D	H	A	B	C	D	H
1830	1600	500	200	1300	2000	2800	1900	200	1200	3100	3600	2800	200	500	3400	6000	3000	200	1100	4000					
1675	1500	500	200	1300	2000	1900	1400	200	1250	2700	3500	2300	200	450	3000	6000	2800	200	1000	3400					
1525	1300	500	200	1100	2000	1800	1000	200	900	2400	3400	2000	200	450	2500	6000	2400	200	700	2800					
1370	1300	500	200	1100	1900	1500	800	200	1000	2200	2900	1600	200	400	2400	5400	2500	200	500	2500					
1220	1300	500	200	1100	1700	1450	600	200	1050	1900	2900	1400	200	1000	1900	5400	2000	200	400	2000					
1065	1150	500	200	1000	1500	1300	500	200	900	1600	2300	1200	200	300	1800	4300	1200	200	200	1900					
915	900	500	150	750	1400	1000	500	150	700	1500	2000	1000	150	300	1500	4000	1500	150	500	1500					
840	900	500	150	750	1300	1000	500	150	700	1400	1850	1000	150	200	1400	3600	1400	150	200	1400					
760	900	500	150	750	1200	1000	500	150	700	1200	1500	1000	150	400	1400	3000	1200	150	600	1400					
685	750	500	150	650	1200	850	500	150	600	1200	1300	800	150	300	1300	2600	1000	150	200	1300					
610	750	450	150	650	1100	850	400	150	600	1100	1200	800	150	450	1200	2300	1000	150	500	1200					
535	650	400	150	500	1000	700	400	150	500	1000	1100	700	150	300	1000	1900	800	150	450	1100					
460	650	400	150	500	900	700	400	150	500	900	900	600	150	400	900	1700	700	150	400	900					
380	600	400	150	525	800	675	400	150	500	800	800	500	150	400	800	1300	600	150	300	800					
305	500	400	150	400	700	600	400	150	400	700	500	300	150	250	700	950	500	150	100	700	1800	600	200	400	700
230	350	400	150	250	600	400	400	150	250	600	500	300	150	200	600	650	300	150	100	600	1200	400	300	300	600
150	300	300	150	250	400	300	300	150	250	400	300	300	150	100	400	300	300	150	100	400	800	400	100	100	400
100	300	300	150	250	400	300	300	150	250	400	300	300	150	100	400	300	300	150	100	400	500	300	100	100	400



DETAIL SHOWING DIAPERS



TYPICAL SECTION



PLAN 5.125°

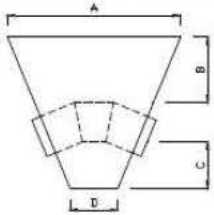


PLAN 11.25°

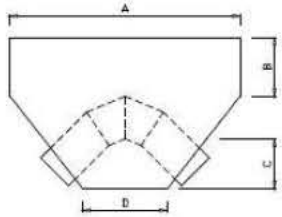


PLAN 22.5°

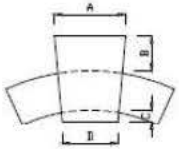
STEEL SEGMENTED BENDS



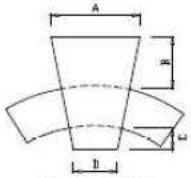
PLAN 45°



PLAN 90°

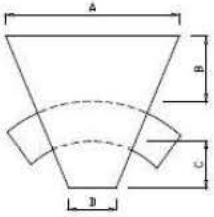


PLAN 11.25°

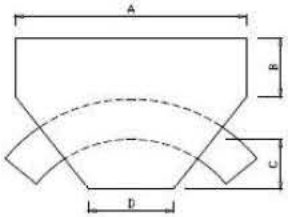


PLAN 22.5°

TYPICAL uPVC AND CAST IRON BENDS



PLAN 45°



PLAN 90°

THIS DRAWING SUPERSEDES W1-3315
W1-4214
W1-4215

CITY OF CAPE TOWN
SERVICES AND INFRASTRUCTURE
[redacted]
executive director :services & infrastructure

manager : water

STANDARD DRAWING
THRUST BLOCK SCHEDULE
FOR BENDS

REVISIONS

scale	drawing no.
N.T.S.	W4-G-005
	revision suffix
date 92/12/08	drawn M.V. / designed / checked

SIZE OF TEE	A	B	C	D	E	MIN. FACE AREA (m^2)
100 X 100	360	250	200	280	280	0.10
150 X 100	360	250	200	280	280	0.10
225 X 100	360	250	200	280	280	0.10
300 X 100	500	250	200	300	300	0.10
375 X 100	575	250	200	300	300	0.10
450 X 100	650	250	200	300	300	0.10
150 X 150	300	250	200	770	300	0.23
225 X 150	450	250	200	550	450	0.23
300 X 150	500	250	200	460	460	0.23
375 X 150	660	250	200	400	400	0.23
450 X 150	660	250	200	400	400	0.23
225 X 225	450	350	200	1160	500	0.52
300 X 225	600	250	200	870	600	0.52
375 X 225	750	250	200	690	500	0.52
450 X 225	800	250	200	650	650	0.52
300 X 300	600	450	200	1530	600	0.92
375 X 300	750	400	200	1230	500	0.92
450 X 300	750	250	200	1230	750	0.92
375 X 375	750	750	200	1920	500	1.44
450 X 375	900	450	200	1600	750	1.44
450 X 450	1000	650	200	2000	750	2.08

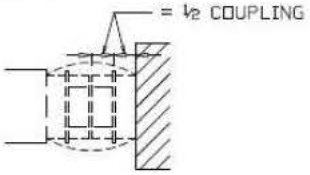
NOTES

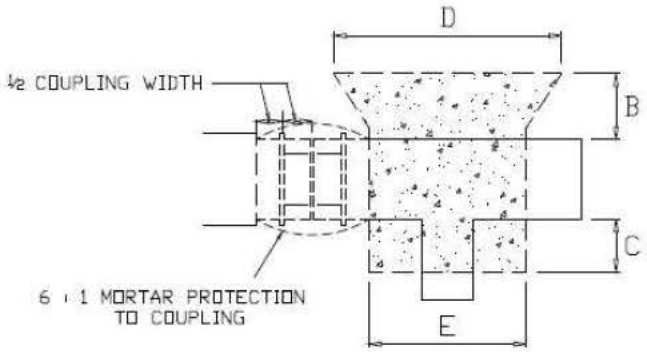
HEAD = 120m
ASSUMED bp = 100 kN/m^2 (SAND)

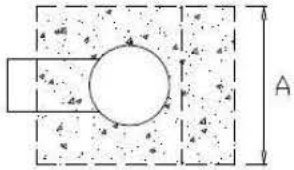
VALUE FOR B GIVEN AS ABSOLUTE MINIMUM.

THRUST BLOCK TO BE CAST AGAINST UNDISTURBED EARTH.

THE BLOCK IS TO BE KEPT CLEAR OF THE COUPLING BY ½ THE WIDTH OF THE COUPLING (e)







THIS DRAWING SUPERSEDES W2-3535

CITY OF CAPE TOWN
SERVICES AND INFRASTRUCTURE

executive director: services & infrastructure

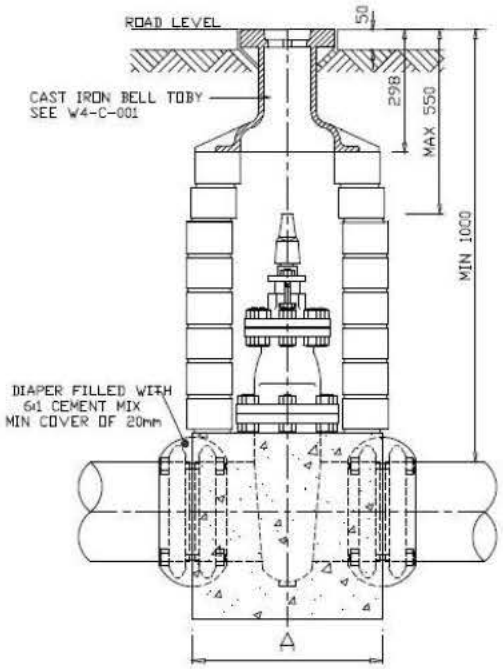
manager : water

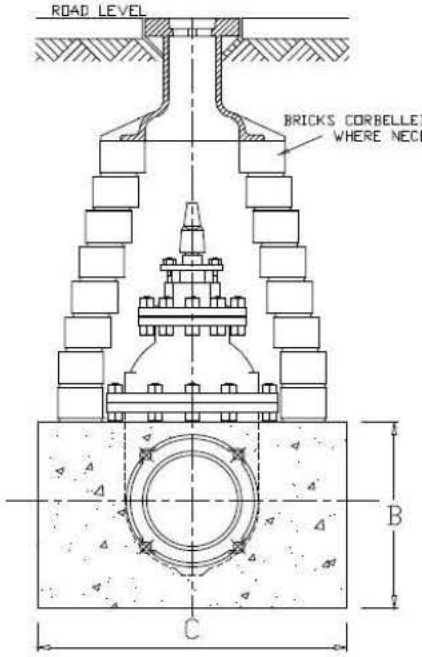
STANDARD DRAWING

THRUST BLOCK SCHEDULE FOR TEE'S

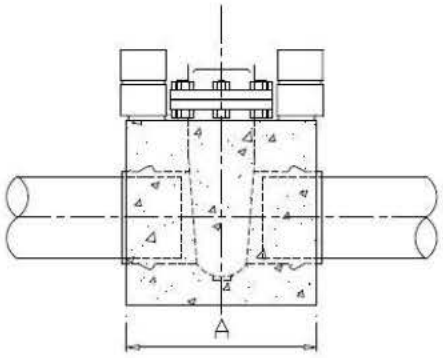
REVISIONS

scale	drawing no.
N.T.S.	W4-G-006
	revision suffix
date 92/12/08	drawn M.V. / designed / checked

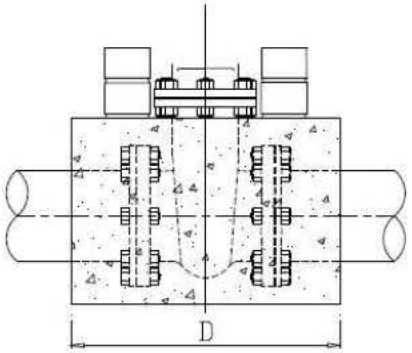




PLAIN ENDED SLUICE VALVE
WITH COUPLING



SOCKET ENDED SLUICE VALVE
FOR uPVC PIPE



FLANGED SLUICE VALVE

NOMØ	A	B	C	D
100	320	320	600	500
150	380	400	650	600
200	420	420	700	650
225	460	450	750	650
300	560	540	840	700

1. DIMENSIONS OF 300mmØ VALVE CHAMBERS REFER TO RESILIENT SEAL VALVES ONLY.

THIS DRAWING SUPERSEDES W1-3295

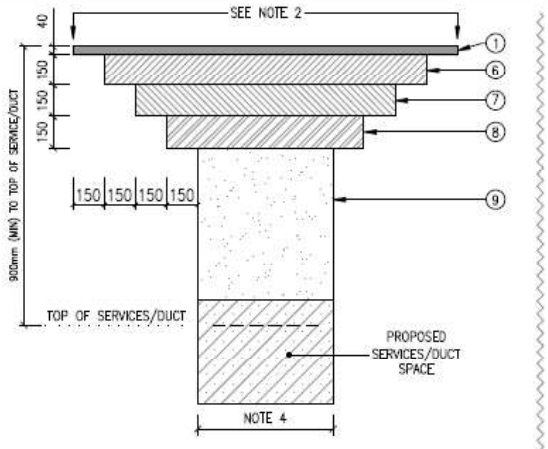
CITY OF CAPE TOWN
SERVICES AND INFRASTRUCTURE
[redacted]
executive director: services & infrastructure

manager : water

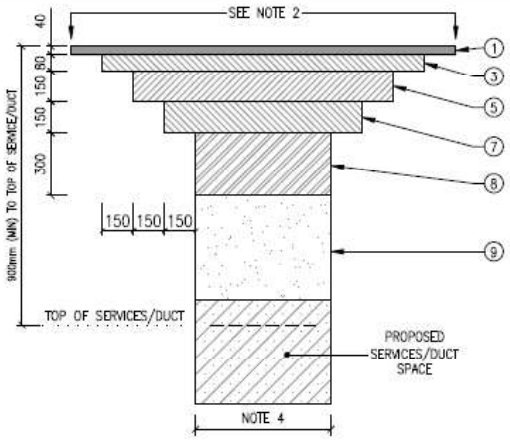
STANDARD DRAWING
CHAMBER FOR PLAIN ENDED, FLANGED AND SOCKETED SLUICE (GATE) VALVES
(100mmØ – 300mmØ)

REVISIONS

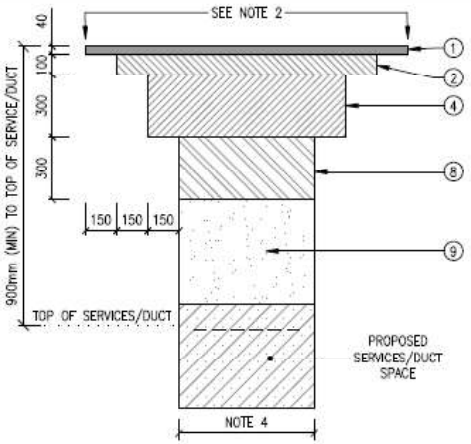
scale 1 : 15
drawing no. W4–V–001
revision suffix
date 92/11/23
drawn M.V.
designed
checked



TYPE A1
CLASS 5B–D ROADS
(LOCAL RESIDENTIAL STREETS)



TYPE A2
CLASS 5A & 4 ROADS
(LOCAL COMMERCIAL STREETS & COLLECTORS)



TYPE A3
CLASS 2 & 3 ROADS
(ARTERIALS)

NOTES:

1. THE SPECIFIED LAYER WORKS SHOULD BE CONSIDERED AS A GUIDELINE. ONCE THE EXISTING LAYER WORKS OF THE ROADWAY HAVE BEEN DETERMINED, THE ENGINEER SHALL SUBMIT A FINAL LAYER WORKS REINSTATEMENT PROPOSAL TO THE APPROVAL AUTHORITY.
2. ASPHALT SURFACE LAYERS SHALL BE MECHANICALLY SAW CUT PRIOR TO THE BREAKING UP OF THE EXISTING LAYERS AND AGAIN BEFORE THE PLACING OF THE FINAL ASPHALT LAYER.
3. ASPHALT JOINTS:
   - 3.1. JOINT SHALL BE CUT IN STRAIGHT LINES, PARALLEL OR AT RIGHT ANGLES TO THE CENTERLINE, USING A MECHANICAL SAW CUT.
   - 3.2. LONGITUDINAL ASPHALT JOINTS SHALL NOT BE POSITIONED IN ANY VEHICLE WHEEL–PATHS. JOINTS SHALL BE POSITIONED ON THE LANE MARKING.
   - 3.3. CUT EDGES OF ASPHLAT JOINTS SHALL RECEIVE A COAT OF RUBBERIZED BITUMEN EMULSION ALONG THE ENTIRE VERTICAL FACE, PRIOR TO THE ASPHALT BEING PLACED.
   - 3.4. REFER TO SECTION 8.5.3 FOR FURTHER DETAILS.
   - 3.5. ALL "COLD" ASPHALT JOINTS TO BE PROPERLY SEALED WITH A WATERPROOFING SEALANT TO PREVENT THE INGRESS OF WATER. THE SEALANT SHALL BE UNDILUTED AND BRUSH–APPLIED AT 0.71L/m^2, AT A MINIMUM WIDTH OF 100mm.
4. TRENCH WIDTH SHALL DEPEND ON THE REQUIRED SERVICE TO BE INSTALLED.
   - 4.1. FOR STORMWATER, SEWER AND WATER SERVICES, SUFFICIENT SIDE ALLOWANCE SHALL BE PROVIDED, TO ENSURE ADEQUATE COMPACTION.
   - 4.2. FOR SERVICE DUCTS, REFER TO CHAPTER 13 FOR THE VARIOUS DUCT TYPE REQUIREMENTS AND SPECIFICATIONS.

ROAD LAYER WORKS:

1. 40mm CONTINUOUSLY GRADED ASPHALT SURFACING (93% MAX. VOIDLESS DENSITY)
2. 100mm CONTINUOUSLY GRADED BTB (93% MAX. VOIDLESS DENSITY)
3. 80mm CONTINUOUSLY GRADED BTB (93% MAX. VOIDLESS DENSITY)
4. 300mm C3/C4 CEMENT STABILIZED SUBBASE, CONSTRUCTED IN TWO LAYERS OF 150mm (96% MDD)
5. 150mm G3 BASE (98% MMD)
6. 150mm G4 BASE (98% MMD)
7. 150mm G5 SUBBASE (95% MMD)
8. G7 SELECTED LAYER, CONSTRUCTED IN 150mm LAYERS (93% MDD, 100% FOR SAND)
9. G9 BACKFILLING, COMPACTED IN 150mm LAYERS (90% MDD, 100% FOR SAND)

NOTES: AGGREGATE SAND OR GRANULAR MATERIAL, ALL OF NON–CONHESIVE NATURE AND FREE FROM ALL ORGANIC MATERIAL OF WHICH THE GRADING ANALYSES SHOWS 100% PASSING A 13,2MM SIEVE AND NOT MORE THAN 5% PASSING A 0,075MM SIEVE.
BINDER TYPE FOR ASPHALT LAYERS (SURFACING & BASE) SHALL BE SPECIFIED IN FINAL PROPOSAL.

ROAD CLASSES

CLASS 2 : MAJOR ARTERIAL
CLASS 3 : MINOR ARTERIAL
CLASS 4 : COLLECTOR
CLASS 5A : LOCAL COMMERCIAL STREET
CLASS 5B–D: LOCAL RESIDENTIAL STREETS

SHEET INDEX:

SHEET 1: ROADWAY REINSTATEMENT SPECIFICATIONS
SHEET 2: PEDESTRIAN FOOTWAY REINSTATEMENT SPECIFICATIONS

CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

CITY OF CAPE TOWN
URBAN MOBILITY

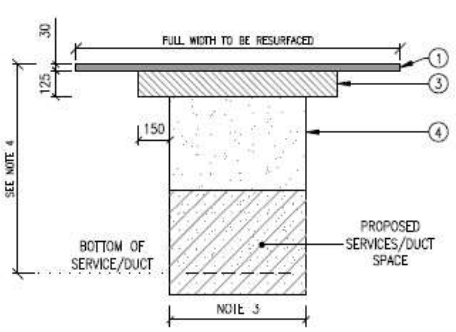
TITLE

REINSTATEMENT OF SHALLOW TRENCHES IN ROAD RESERVES
TRENCHES IN ROADWAYS

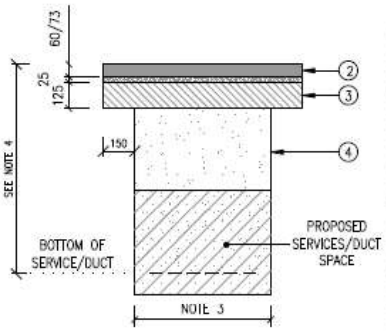
STANDARDS AND GUIDELINES DETAILS

SHEET 1

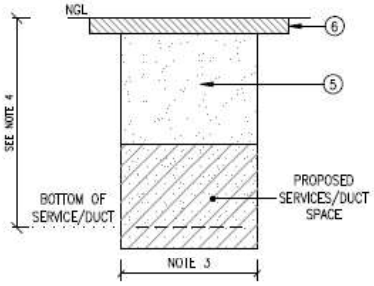
SCALE	PAPER
N.T.S.	**A4**
DRAWING No.	REV
RD16.1	**C**



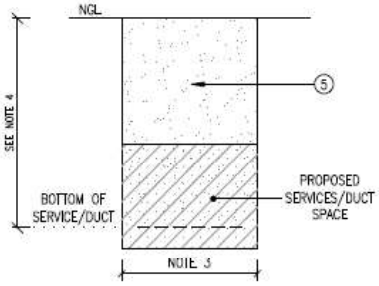
TYPE B1:
PEDESTRIAN FOOTWAY
(ASPHALT)



TYPE B2:
PEDESTRIAN FOOTWAY
(SEGMENTED PAVING)



TYPE B3:
STABILISED GRAVEL WC



TYPE B4:
UNMADE VERGE

NOTES:

1. THE SPECIFIED LAYER WORKS SHOULD BE CONSIDERED AS A GUIDELINE. ONCE THE EXISTING LAYER WORKS OF THE ROADWAY HAVE BEEN DETERMINED, THE ENGINEER SHALL SUBMIT A FINAL LAYER WORKS REINSTATEMENT PROPOSAL TO THE APPROVAL AUTHORITY.
2. WHERE THE WIDTH OF THE FOOTWAY IS LESS THAN 2m, THE ENTIRE WIDTH OF THE SURFACING SHALL BE REPLACED (ONLY APPLICABLE TO ASPHALT FOOTWAYS).
3. ASPHALT JOINTS:
   - 3.1. ALL JOINTS SHALL BE SAW CUT PRIOR TO THE PLACING OF THE NEW ASPHALT LAYER.
   - 3.2. ALL JOINTS SHALL BE CUT PERPENDICULAR ACROSS THE FOOTWAY (NO DIAGONAL JOINTS SHALL BE ACCEPTED).
   - 3.3. REFER TO SECTION 8.5.3 FOR FURTHER DETAILS.
   - 3.4. ALL "COLD" ASPHALT JOINTS TO BE PROPERLY SEALED WITH A WATERPROOFING SEALANT TO PREVENT THE INGRESS OF WATER. THE SEALANT SHALL BE UNDILUTED AND BRUSH-APPLIED AT 0.71L/m^2, AT A MINIMUM WIDTH OF 100mm.
4. TRENCH WIDTH SHALL DEPEND ON THE REQUIRED SERVICE TO BE INSTALLED.
   - 4.1. FOR STORMWATER, SEWER AND WATER SERVICES, SUFFICIENT SIDE ALLOWANCE SHALL BE PROVIDED, TO ENSURE ADEQUATE COMPACTION.
   - 4.2. FOR SERVICE DUCTS, REFER TO CHAPTER 13 FOR THE VARIOUS DUCT TYPE REQUIREMENTS AND SPECIFICATIONS.
5. TRENCH DEPTH:
   - 5.1. SHALL BE LIMITED TO 1m FOR TELECOMMUNICATION SERVICES.
   - 5.2. WHERE UNSTABLE GROUND CONDITIONS EXIST, SHORING/PROTECTION SHOULD BE APPLIED IN ORDER TO PROTECT ADJACENT STRUCTURES.

PEDESTRIAN FOOTWAY LAYER WORKS:

1. 30mm CONTINUOUSLY FINE GRADED ASPHALT SURFACING
2. 60/73 PAVING BLOCKS ON 25mm SAND
3. 125mm G5 SUBBASE COMPACTED TO 95% MDD
4. G9 BACKFILLING COMPACTED IN 150mm LAYERS (90% MDD, 100% FOR SAND)
5. BACKFILL MATERIAL TO BE COMPACTED TO 90% OF MDD IN LAYERS NOT EXCEEDING 300mm
6. 75mm STABILISED GRAVEL WEARING COURSE (3–4% CEMENT BY MASS)

NOTES: AGGREGATE SAND OR GRANULAR MATERIAL, ALL OF NON-CONHESIVE NATURE AND FREE FROM ALL ORGANIC MATERIAL OF WHICH THE GRADING ANALYSES SHOWS 100% PASSING A 13,2MM SIEVE AND NOT MORE THAN 5% PASSING A 0,075MM SIEVE.
BINDER TYPE FOR ASPHALT SURFACING SHALL BE SPECIFIED IN FINAL PROPOSAL

SHEET INDEX:
SHEET 1: ROADWAY REINSTATEMENT SPECIFICATIONS
SHEET 2: PEDESTRIAN FOOTWAY REINSTATEMENT SPECIFICATIONS

CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

CITY OF CAPE TOWN
URBAN MOBILITY

TITLE

REINSTATEMENT OF SHALLOW TRENCHES IN ROAD RESERVES
TRENCHES IN PEDESTRIAN FOOTWAYS AND VERGES

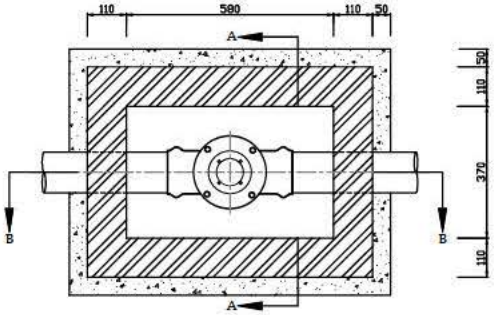
STANDARDS AND GUIDELINES DETAILS

SHEET 2

SCALE	PAPER
N.T.S.	A4
DRAWING No.	REV
RD16.2	C

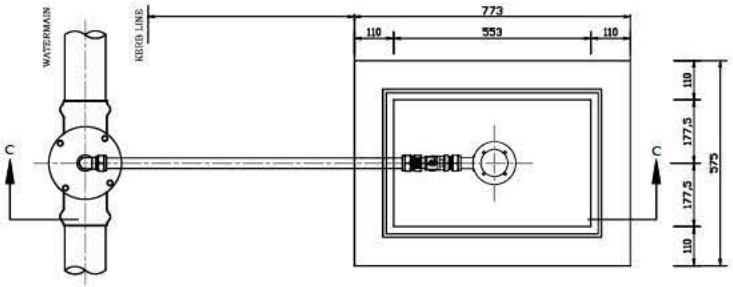
DRAWING NO. W3-AV-001

AIR VALVE CHAMBER DETAILS
(25mm, 50mm IN LINE)



PLAN VIEW

OFF SET AIR VALVE DETAILS
(25mm, 50mm)



PLAN

NOTES

1. BRASS BALL VALVE 25mm ø 50mm ø
   MALE IRON INLET FEMALE IRON
   OUTLET MUST BE SABS APPROVED
2. COVER AND FRAME (SEE W4-C-002 AND W4-C-005)
3. FEMALE IRON/COPPER COUPLER (CONEX)
4. 375mm x 375mm PRECAST SLAB
5. COPPER/MALE IRON COUPLER
6. COPPER / POLYPROP 25mm
7. AIR VALVE NOMINAL SIZE DN25
8. BRASS MIC BEND(CONEX) 25mm

AIR VALVE DESIGN SUITABLE FOR WATERMAINS 200mmØ AND SMALLER

DENZO TAPE WRAPPING TO BE APPLIED TO ALL EXPOSED STEEL

30 MPa CONCRETE IN ACCORDANCE WITH SPECIFICATION

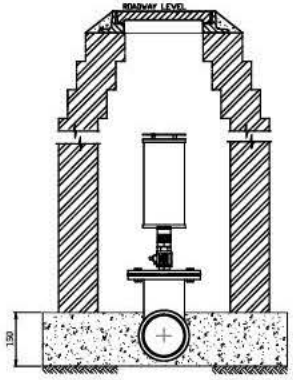
ALL BRICKWORK IN STRETCHER BOND AND CEMENT MOTAR SHALL BE 1 3 CEMENT MOTAR

FLANGE DETAIL TABLE B CS WS-11 (WORKING PRESSURE 1 2 MPa)

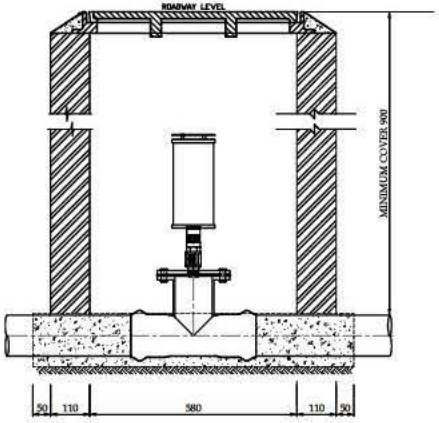
ALL COPPER PIPING TO SABS 461 1963

ALL AIR VALVES MUST COMPLY WITH SABS AND MUST BE BE APPROVED BY THE LOCAL AUTHORITY(SEE CE-WS20 1993)

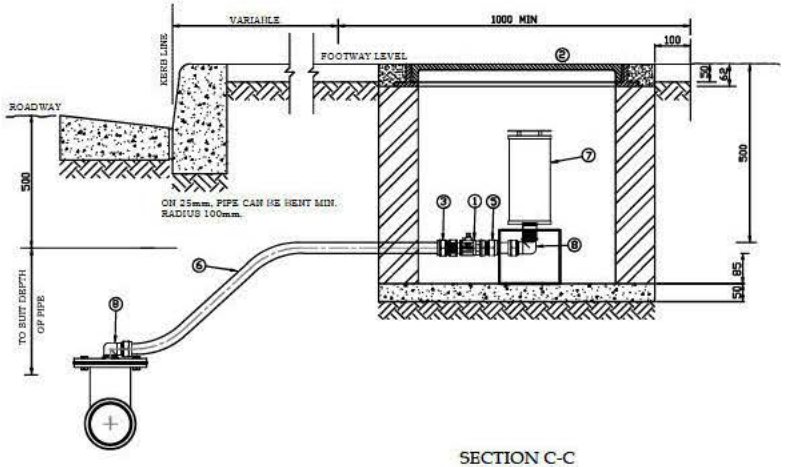
POLYPROPYLENE PIPES TO COMPLY WITH SABS 1315 1981 CLASS 16 OUTSIDE DIAMETER 460 1985 NOMINAL DIAMETERS



SECTION A-A



SECTION B-B



SECTION C-C

CITY OF CAPE TOWN
MUNICIPAL SERVICES

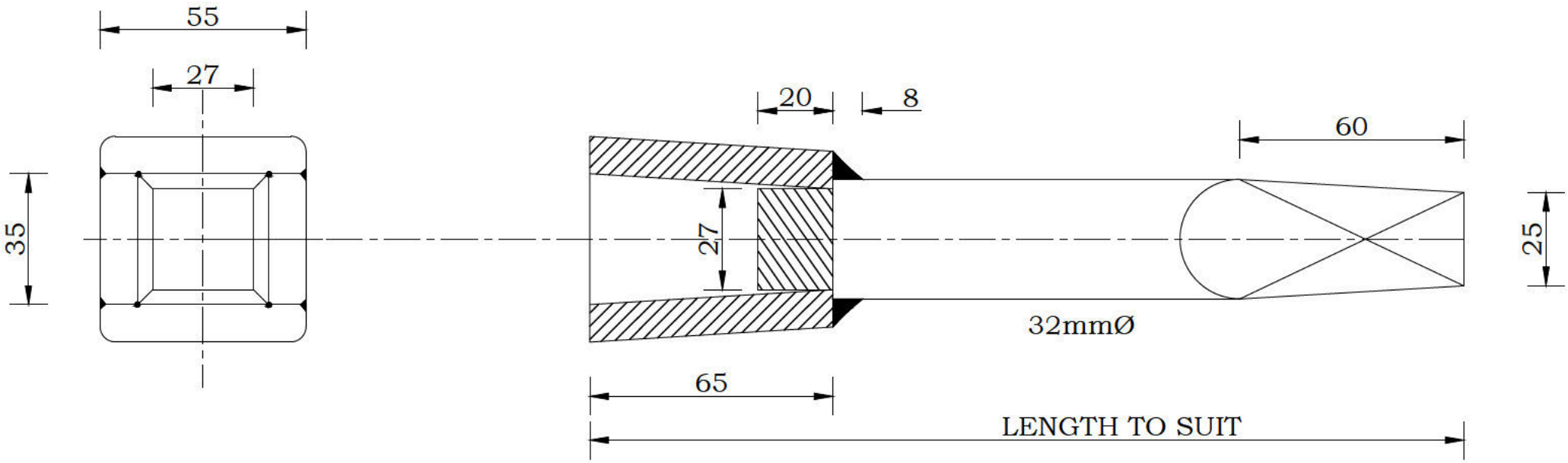
executive director : municipal services

manager : water

STANDARD DRAWING
25mm and 50mm Air Valve
Detail

REVISIONS			
1			
2			
3			

scale	drawing no.		
N.T.S	W3-AV-001		
	revision suffix		
date	drawn	designed	checked
12/04/16	EJB		



NOTES

UNLESS OTHERWISE APPROVED, RIGID (FIXED LENGTH EXTENSION SPINDLES SHALL BE SOLID (NOT TUBULAR) METALIC CONSTRUCTION.

SPINDLES UP 600mm LONG SHOULD BE OF SOLID CONSTRUCTION,HOWEVER ABOVE THIS LENGTH A LIGHTER TUBLAR CONSTRUCTION IS RECOMMENDED.

MATERIAL: STEEL BS 970 EN20

THIS DRAWING SUPERSEDES W2-3665

CITY OF CAPE TOWN
UTILITY SERVICES

executive director : utility services

manager : water

STANDARD DRAWING
EXTENSION SPINDLES
FOR VALVES

REVISIONS

scale	drawing no.
NTS	W4-G-015
	revision suffix
date 04/10/2020	drawn E.B. / designed / checked

Part C5: Returnable Documents

		Pages
C5.1	List of Returnable Documents	425
C5.2	Returnable Schedules	426 – 462

C5.1 List of Returnable Documents

The tenderer must complete the following Returnable Documents in non-erasable **black ink**:

Returnable Schedules that will be incorporated into the Contract

		Pages
1:	COMPULSORY ENTERPRISE QUESTIONNAIRE	427 - 428
2:	CERTIFICATE OF INDEPENDENT TENDER DETERMINATION	429 - 430
3:	CERTIFICATE OF AUTHORITY FOR JOINT VENTURES	431
4:	DECLARATION OF TENDERER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES (MBD 8)	432
5:	DECLARATION OF INTEREST – STATE EMPLOYEES (MBD 4 amended)	433 - 435
6:	DECLARATION OF INTEREST	436
7.	AUTHORISATION FOR THE DEDUCTION OF OUTSTANDING AMOUNTS OWED TO CCT	437
8:	DECLARATION IN RESPECT OF COMPLIANCE WITH LABOUR LEGISLATION	438
9:	CONFIRMATION OF CCT SUPPLIER DATABASE REGISTRATION	439
10:	SCHEDULE OF WORK EXPERIENCE OF TENDERER	440 - 441
11:	SCHEDULE OF EQUIPMENT INSTALLATIONS AND SERVICE HISTORY (Not applicable)	442
12:	CONFIRMATION OF CONTRACTOR REGISTRATION / ACCREDITATION	443
13:	DETAILS OF QUALIFICATIONS AND EXPERIENCE OF STAFF	444 - 447
14:	SCHEDULE OF CONSTRUCTION EQUIPMENT (Not applicable)	448
15:	DETAILS OF TENDERER'S WORKSHOP FACILITIES (Not applicable)	449
16:	SCHEDULE OF SUBCONTRACTORS	450
17:	HEALTH AND SAFETY PLAN	451
18:	DEVIATIONS AND QUALIFICATIONS BY TENDERER	452
19:	FUNCTIONALITY CRITERIA	453
20:	REGIONS OF PREFERENCE (Not applicable)	454
21:	PRICE BASIS FOR IMPORTED RESOURCES (Not applicable)	455
22:	RECORD OF ADDENDA TO TENDER DOCUMENTS	456
23:	PREFERENCE SCHEDULE (where preferences are granted in respect of the HDI and/or Specific Goals	457 – 459
24:	APPEAL APPLICATION (ANNEXURE B)	460
25:	INFORMATION TO BE PROVIDED WITH THE TENDER (Not applicable)	461
26:	DECLARATION OF TENDERED RATES SUBMITTED	462

Other documents required for tender evaluation purposes

a) Joint Venture Agreement (if applicable) - append to Schedule 3.
b) Health and Safety Plan - append to Schedule 17.
c) Functionality Criteria - append to Schedule 19.

C5.2 Returnable Schedules

NOTE: Certain of the following Returnable Schedules, amended as applicable, will also have to be completed for each Works Project.

CITY OF CAPE TOWN

WATER AND SANITATION: DISTRIBUTION SERVICES

CONTRACT NO. 150Q/2024/25

TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

SCHEDULE 1 : COMPULSORY ENTERPRISE QUESTIONNAIRE

The following particulars must be furnished. In the case of a joint venture, separate enterprise questionnaires in respect of each partner must be completed and submitted.	
Section 1: Name of enterprise: [redacted]	
Section 2: VAT registration number, if any: [redacted]	
Section 2a: National Treasury Central Supplier Database registration number : [redacted]	
Section 2b: SARS Tax Compliance Status PIN : [redacted]	
Section 3: cidb registration number, if any: [redacted]	
Section 4: Particulars of sole proprietors and partners in partnerships NOT APPLICABLE ** Complete only if sole proprietor or partnership and attach separate page if more than 3 partners*	
Section 5: Particulars of companies and close corporations Company registration number [redacted] Close corporation number NOT APPLICABLE Tax reference number [redacted]	
Section 6: Foreign Bidding Suppliers	
Is tenderer the accredited representative in South Africa for the Goods / Services / Works offered?	☐Yes ☐No If yes, enclose proof
Is tenderer a foreign based supplier for the Goods / Services / Works offered? NOT APPLICABLE	☐Yes ☐No If yes, answer the Questionnaire to Bidding Foreign Suppliers (below)
Questionnaire to Bidding Foreign Suppliers	
a) Is the tenderer a resident of the Republic of South Africa or an entity registered in South Africa?	☐Yes ☐No
b) Is the tenderer a resident of the Republic of South Africa or an entity registered in South Africa?	☐Yes ☐No
c) Does the tenderer havea permanent establishment in the Republic of South Africa?	☐Yes ☐No
d) Does the tenderer have any source of income in the Republic of South Africa? NOT APPLICABLE	☐Yes ☐No
e) Is the tenderer liable in the Republic of South Africa for any form of taxation?	☐Yes ☐No

The undersigned, who warrants that he / she is duly authorised to do so on behalf of the enterprise:

i) authorizes the Employer to obtain a tax clearance certificate from the South African Revenue Services that my / our tax matters are in order;
ii) confirms that the neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004 or Database of Restricted Suppliers;
iii) confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption;
iv) confirms that I / we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest; and
iv) confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct.

Signed [redacted] Date 25.02.2025

Name [redacted] Position ESTIMATOR

Enterprise name [redacted]

SIGNED ON BEHALF OF TENDERER: . . . [redacted] . . . . . .

CITY OF CAPE TOWN

WATER AND SANITATION: DISTRIBUTION SERVICES

CONTRACT NO. 150Q/2024/25

TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

SCHEDULE 10: SCHEDULE OF WORK EXPERIENCE OF TENDERER

The tenderer shall provide details of previously relevant experience required for the functionality evaluation of this tender. Evaluation will be in terms of the minimum score for functionality described in Volume 1, C.2.1.4.3. Relevant projects listed shall comply with the requirements defined in Evaluation Criterion 1.1 of C.2.1.4.3.

The tenderer must list relevant projects where the Tenderer was appointed and completed the project as prime contractor or joint venture member.

The first line in the table below is illustrative of the manner in which information must be presented to attain optimum scoring outcomes.

EMPLOYER (NAME, TEL No. AND EMAIL ADDRESS)	NATURE / SCOPE OF WORK	PIPE SIZE(S)	LENGTH (m)	DATE OF COMPLETION CERTIFICATE
COMPLETED CONTRACTS				
EXAMPLE: Employer A: *XYZ Town Council* Contact Person: *Mr John Doe* Tel No. *021 123 4567* Email: *john@towncouncil.gov.za*	Contract Number: *YWR4-66* Description: *Installation of Potable Water pipes in Suburb A*	*100 mm dia* *150 mm dia* *250mm dia*	*977m* *244m* *66m*	*31 March 2022*
Employe [redacted] Contact Tel No. Email: TBC	Contract Number: HSC01/2017/18 Description: TRANSHEX HOUSING PROJECT: WORCESTER: PHASE 1: CONSTRUCTION OF STORMWATER CANAL, CHANELS & INTERNAL CIVIL ENGINEERING SERVICES FOR 2546 ERVEN	110mm 160mm 200mm 250mm 315mm 355mm 400mm 450mm 500mm	16038m 2422m 3092m 727m 178m 806m 173m 104m 949m	14.12.2021
Employe [redacted] Contact Tel No. Email:	Contract Number: J717/15/INF Description: KING AIR INDUSTRY INFRASTRUCTURE: CONTRACT FOR THE CONSTRUCTION OF INTERNAL AND EXTERNAL ROADS, INFRASTRUCTURE AND	160mm 315mm	1911m 1572m	28.09.2022
Employer [redacted] Contact P Tel No. Email:	Contract Number: CDC/232/19 Description: UPGRADING OF SERVICES FOR GROOTE SCHUUR ESTATE IN RONDEBOSCH, CAPE TOWN	110mm 160mm	349.9m 1495,7m	28.06.2023

EMPLOYER (NAME, TEL No. AND EMAIL ADDRESS)	NATURE OF WORK	PIPE SIZE(S)	LENGTH (m)	DATE OF COMPLETION CERTIFICATE
Employe [redacted] WESTERN Contact [redacted] Tel No. [redacted] Er [redacted]	Contract Number: HSC03/2015/2016 Description: DELFT SYMPHONY PRECINCT 7 HOUSING PROJECT: FOR THE CONSTRUCTION OF 505 BNG HOUSING UNITS AND SUPPORTING SERVICES	110mm	2478m	30.05 2018
Employer [redacted] Contact P [redacted] Tel No. [redacted] Email [redacted]	Contract Number: AUR 44/2015 Description: THE TORAI ESTATE CIVIL ENGINEERING WORKS CIVIL WORKS FOR RETIREMENT HOUSING ESTATE	110mm	2530m	20.03.2019
Employer 6: Contact Person: Tel No. Email:	Contract Number: Description:			
Employer 7: Contact Person: Tel No. Email:	Contract Number: Description:			
Employer 8: Contact Person: Tel No. Email:	Contract Number: Description:			
Employer 9: Contact Person: Tel No. Email:	Contract Number: Description:			

SEE RETURNABLE DOCUMENT

Please make copy and insert if more space is required.

Number of sheets appended by the tenderer to this Schedule 67 (If nil, enter NIL).

SIGNED ON BEHALF OF TENDERER: [redacted]

CITY OF CAPE TOWN

WATER AND SANITATION: DISTRIBUTION SERVICES

CONTRACT NO. 150Q/2024/25

TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

SCHEDULE 12: CONFIRMATION OF CONTRACTOR REGISTRATION / ACCREDITATION

CONFIRMATION OF REGISTRATION AS AN ASBESTOS CONTRACTOR WITH THE DEPARTMENT OF LABOUR

Tenderers will be declared non-responsive if the tenderer has failed to submit with his/her submission or within 7 days of request proof of registration as an Asbestos Contractor with the Department of Labour (DoL) in accordance with Asbestos Regulations GNR. 1196 of 2020 as specified. **Please see Clause C.2.1.4.8**

ASBESTOS CONTRACTOR REGISTRATION	
COMPANY NAME	**REGISTRATION NUMBER IF APPLICABLE**
[redacted]	[redacted]

In this regard it is the sole responsibility of tenderers to ensure that this requirement is complied with. In the case of Joint Venture Partnerships this requirement will apply to each party to the Joint Venture. **The use of sub-contractors will not be allowed.**

The Asbestos Contractor Registration Certificate should be attached hereto by the tenderer to this Schedule.

SEE RETURNABLE DOCUMENT

SIGNED ON BEHALF OF TENDERER: . . [redacted] . . . . . .

CITY OF CAPE TOWN

WATER AND SANITATION: DISTRIBUTION SERVICES

CONTRACT NO. 150Q/2024/25

TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

SCHEDULE 13: DETAILS OF QUALIFICATIONS AND EXPERIENCE OF STAFF

13.1 DETAILS OF CONSTRUCTION MANAGER No. 1 (FORMERLY NAMED SITE AGENT) EXPERIENCE

The tenderer shall provide details of previously relevant experience of the Construction Manager as required for the functionality evaluation of this tender. Evaluation will be in terms of the minimum score for functionality described in Volume 1, C.2.1.4.3. Relevant projects listed shall comply with the requirements defined in Evaluation Criterion 2.1 of C.2.1.4.3.

The proposed Construction Manager will be required to be present on site at all times when works are being executed.

The tenderer must list relevant details of the projects of the Construction Manager. The first line in the table below is illustrative of the manner in which information must be presented to attain optimum scoring outcomes.

CONSTRUCTION MANAGER NO. 1

CONSTRUCTION MANAGER (Formerly named Site Agent)	**NAME:** [redacted] **YEARS EXPERIENCE AS CONSTRUCTION MANAGER IN OPEN CUT TRENCH POTABLE WATER INFRASTRUCTURE PROJECTS** 25 YEARS			
EMPLOYER (NAME, TEL No. AND EMAIL ADDRESS)	NATURE / SCOPE OF WORK	PIPE SIZE(S)	LENGTH (m)	DATE OF COMPLETION CERTIFICATE
COMPLETED CONTRACTS				
EXAMPLE: Employer A: *XYZ Town Council* Contact Person: *Mr John Doe* Tel No. *021 123 4567* Email: *john@towncouncil.gov.za*	Contract Number: *YWR4-66* Description: *Installation of Potable Water pipes in Suburb A*	*100 mm dia* *150 mm dia* *250mm dia*	*977m* *244m* *66m*	*31 March 2022*
[redacted]	Contract Number: AUC 44/2015 Description: THE TOKAI ESTATE CIVIL ENGINEERING WORKS CIVIL WORKS FOR RETIREMENT HOUSING ESTATE	110 mm	1578m	29.03.2019
[redacted]	Contract Number: 260Q/2015/16 Description: CONSTRUCTION OF CIVIL ENGINEERING SERVICES - DIDO VALLEY HOUSING PROJECT	110mm	2989.49m	01.12.2017
Employer 3: Contact Person: Tel No. Email:	Contract Number: Description:			

SEE RETURNABLE DOCUMENT

EMPLOYER (NAME, TEL No. AND EMAIL ADDRESS)	NATURE OF WORK	PIPE SIZE(S)	LENGTH (m)	DATE OF COMPLETION CERTIFICATE
Employer 4: Contact Person: Tel No. Email:	Contract Number: Description:			
Employer 5: Contact Person: Tel No. Email:	Contract Number: Description:			
Employer 6: Contact Person: Tel No. Email:	Contract Number: Description:			
Employer 7: Contact Person: Tel No. Email:	Contract Number: Description:			
Employer 8: Contact Person: Tel No. Email:	Contract Number: Description:			
Employer 9: Contact Person: Tel No. Email:	Contract Number: Description:			
Employer 10: Contact Person: Tel No. Email:	Contract Number: Description:			

SEE RETURNABLE DOCUMENT

Please make copy and insert if more space is required.

Number of sheets appended by the tenderer to this Schedule 24 (If nil, enter NIL)

SIGNED ON BEHALF OF THE TENDERER: . . [redacted] . . . . . .

13.2 DETAILS OF CONSTRUCTION MANAGER No. 2 (FORMERLY NAMED SITE AGENT) EXPERIENCE

The tenderer shall provide details of previously relevant experience of the Construction Manager as required for the functionality evaluation of this tender. Evaluation will be in terms of the minimum score for functionality described in Volume 1, C.2.1.4.3. Relevant projects listed shall comply with the requirements defined in Evaluation Criterion 2.2 of C.2.1.4.3.

The proposed Construction Manager will be required to be present on site at all times when works are being executed.

The tenderer must list relevant details of the projects of the Construction Manager. The first line in the table below is illustrative of the manner in which information must be presented to attain optimum scoring outcomes.

CONSTRUCTION MANAGER NO. 2

CONSTRUCTION MANAGER (Formerly named Site Agent)	**NAME:** [redacted] **YEARS EXPERIENCE AS CONSTRUCTION MANAGER IN OPEN CUT TRENCH POTABLE WATER INFRASTRUCTURE PROJECTS** 19 Years			
EMPLOYER (NAME, TEL No. AND EMAIL ADDRESS)	NATURE / SCOPE OF WORK	PIPE SIZE(S)	LENGTH (m)	DATE OF COMPLETION CERTIFICATE
COMPLETED CONTRACTS				
EXAMPLE: Employer A: *XYZ Town Council* Contact Person: *Mr John Doe* Tel No. *021 123 4567* Email: *john@towncouncil.gov.za*	Contract Number: *YWR4-66* Description: *Installation of Potable Water pipes in Suburb A*	*100 mm dia* *150 mm dia* *250mm dia*	*977m* *244m* *66m*	*31 March 2022*
E [redacted]	Contract Number: 120Q|2010|11 Description: CONSTRUCTION OF CIVIL SERVICES FOR OCEAN VIEW HOUSING PROJECT	100 mm 160mm 200mm	3850m 77m 61m	25. 11. 2011
E [redacted]	Contract Number: 182Q|2015|16 Description: UPGRADING OF PORTION OF KOMMETJIE MAIN ROAD AND ou KAAPSE WEG	300mm 350mm 500mm 630mm	1250m 1150m 2000m 66m	01. 06. 2020
E [redacted]	Contract Number: CDC|232|19 Description: UPGRADING OF SERVICES FOR GROOTE SCHUUR ESTATE IN RONDEBOSCH, CAPE TOWN	110mm 160mm	4800m 3700m	28. 06. 2023
Employer 4: Contact Person: Tel No. Email:	Contract Number: Description:			

SEE RETURNABLE DOCUMENT

EMPLOYER (NAME, TEL No. AND EMAIL ADDRESS)	NATURE OF WORK	PIPE SIZE(S)	LENGTH (m)	DATE OF COMPLETION CERTIFICATE
Employer 5: Contact Person: Tel No. Email:	Contract Number: Description:			
Employer 6: Contact Person: Tel No. Email:	Contract Number: Description:			
Employer 7: Contact Person: Tel No. Email:	Contract Number: Description:			
Employer 8: Contact Person: Tel No. Email:	Contract Number: Description:			
Employer 9: Contact Person: Tel No. Email:	Contract Number: Description:			
Employer 10: Contact Person: Tel No. Email:	Contract Number: Description:			

SEE RETURNABLE DOCUMENT

Please make copy and insert if more space is required.

Number of sheets appended by the tenderer to this Schedule ....46..... (If nil, enter NIL).

SIGNED ON BEHALF OF THE TENDERER: [redacted] .....

CITY OF CAPE TOWN

WATER AND SANITATION: DISTRIBUTION SERVICES

CONTRACT NO. 150Q/2024/25

TERM TENDER FOR LAYING OF NEW WATER MAINS, FIRE HYDRANTS AND VALVES

SCHEDULE 16: SCHEDULE OF SUB-CONTRACTORS

We notify you that it is our intention to employ the following sub-contractors for work (excluding work covered by provisional sums and contingencies) in this contract.

Acceptance of this tender shall not be construed as approval of all or any of the listed sub-contractors. Should any of the sub-contractors not be approved subsequent to acceptance of the tender, this shall in no way invalidate the contract, and the tendered unit rates for the various items making up the work activities shall remain final and binding.

SUB-CONTRACTORS		
Sub-contractor's name	Work activities to be undertaken by the Sub-contractor	Estimated value of work (Rand)
[redacted]	BUILDING OF STRUCTURES	RATES ONLY TENDER

Number of sheets appended by the tenderer to this Schedule ..... NIL ..... (If nil, enter NIL).

SIGNED ON BEHALF OF TENDERER: . . . [redacted] . . . . . .