FIRST LETTER

	MEASURED OR INITIATING VARIABLE	MODIFIER
A	ANALYSIS	
B	BURNER, COMBUSTION	
C	CONDUCTIVITY	
D	DENSITY	DIFFERENTIAL
E	VOLTAGE	
F	FLOW RATE	RATIO (FRACTION)
G	USER's CHOICE	
H	HAND	
I	CURRENT (ELECTRICAL)	
J	POWER	SCAN
K	TIME, TIME SCHEDULE	TIME, TIME SCHEDULE
L	LEVEL	
M	MOISTURE OR HUMIDITY	MOMENTARY
N	USER's CHOICE	
O	USER's CHOICE	
P	PRESSURE, VACUUM	
Q	QUANTITY	INTEGRATE, TOTALIZE
R	RADIATION	
S	SPEED, FREQUENCY	SAFETY
T	TEMPERATURE	
U	MULTIVARIABLE	
V	VIBRATION, MECHANICAL ANALYSIS	
W	WEIGHT, FORCE	
X	UNCLASSIFIED STATUS	X AXIS
Y	EVENT, STATE OR PRESENCE	Y AXIS
Z	POSITION	Z AXIS

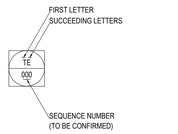
SUCCEEDING LETTER

READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
ALARM		USER's CHOICE
USER's CHOICE	USER's CHOICE	CLOSED
	CONTROL	
SENSOR (PRIMARY ELEMENT)		
GLASS, VIEWING DEVICE		
	HIGH/LEVEL	HIGH/CLOSE
INDICATE		
	CONTROL STATION	
LIGHT	LOW/LEVEL	LOW/CLOSE
		MIDDLE, INTERMEDIATE
USER's CHOICE	USER's CHOICE	USER's CHOICE
OFFICE, RESTRICTION		OPEN
POINT (TEST) CONNECTION		
RECORD		
	SWITCH	
	TRANSMIT	
MALFUNCTION	MULTIFUNCTION	MULTIFUNCTION
	VALVE, DAMPER, LOUVER	
WELL		
UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
	RELAY, COMPOTE, CONVERT	
	DRIVER, ACTUATOR, UNCLASSIFIED FINALCONTROL ELEMENT	

INSTRUMENT / FUNCTION SYMBOLS

	PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR	FIELD MOUNTED	AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR	AUXILIARY LOCATION NORMALLY INACCESSIBLE TO OPERATOR
DISCRETE INSTRUMENTS	TE 000	TE 000	TE 000	TE 000
SHARED DISPLAY, SHARED CONTROL	TE 000	TE 000	TE 000	TE 000
COMPUTER FUNCTION	TE 000	TE 000	TE 000	TE 000
PROGRAMMABLE LOGIC CONTROL	TE 000	TE 000	TE 000	TE 000

INSTRUMENT TAG DEMONSTRATION



3110-GP01
CENTRIFUGAL PUMP
295.7 l/s @ 50 m HEAD.
INSTALLED POWER: 220 kW
VOLTAGE: 380 V

3110-GP02
CENTRIFUGAL PUMP
295.7 l/s @ 50 m HEAD.
INSTALLED POWER: 220 kW
VOLTAGE: 380 V

3110-GP03
CENTRIFUGAL PUMP
295.7 l/s @ 50 m HEAD.
INSTALLED POWER: 220 kW
VOLTAGE: 380 V

GENERAL NOTES:

1. DRAWINGS MUST NOT BE SCALED.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE GENERAL NOTES DRAWINGS AND ALL PROJECT SPECIFICATIONS.
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CONSULTING ENGINEERS	DESIGNED	PJ de KOCK	
ZUTARI IMPACT. ENGINEERED.	DRAWN	N.OLIPHANT	
	CHECKED BY:	L Van VELZE	
32A JELLICOE AVENUE OXFORD CORNER ROSEBANK SOUTH AFRICA TEL: +27 11 214 4500		SIGNATURE / 05-2023 DATE	
	ECSA REG. No.	-	
CLIENT	APPROVED BY:	J VAN NIEKERK	
17 HARRISON STREET MARSHALLTOWN 2107		SIGNATURE / 05-2023 DATE	
	ECSA REG. No.	20120043	

Johannesburg Water

17 HARRISON STREET
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2107

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FAX: (011) 688-1529

Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE CROSBY BULK INFRASTRUCTURE PROJECT
PROCESS AND INSTRUMENTATION DIAGRAM

APPROVAL BY JW DEPOT		
CHECKED		
APPROVED BY:		
SIGNATURE:		DATE

APPROVAL BY JW PLANNING		
CHECKED		
APPROVED BY:		
SIGNATURE:		DATE

SCALE: AS SHOWN

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	FOR TENDER	29-11-2023

DRAWING No.

113503 - 3000-PID-EE-0001 - T0

PROJECT No. / DRAWING No. / REV.

A0 ORIGINAL PAGE SIZE | SHEET 1 OF 1

FILE No.

FIRST LETTER

	MEASURED OR INITIATING VARIABLE	MODIFIER
A	ANALYSIS	
B	BURNER, COMBUSTION	
C	CONDUCTIVITY	
D	DENSITY	DIFFERENTIAL
E	VOLTAGE	
F	FLOW RATE	RATIO (FRACTION)
G	USER's CHOICE	
H	HAND	
I	CURRENT (ELECTRICAL)	
J	POWER	SCAN
K	TIME, TIME SCHEDULE	TIME, TIME SCHEDULE
L	LEVEL	
M	MOISTURE OR HUMIDITY	MOMENTARY
N	USER's CHOICE	
O	USER's CHOICE	
P	PRESSURE, VACUUM	
Q	QUANTITY	INTEGRATE, TOTALIZE
R	RADIATION	
S	SPEED, FREQUENCY	SAFETY
T	TEMPERATURE	
U	MULTIVARIABLE	
V	VIBRATION, MECHANICAL ANALYSIS	
W	WEIGHT, FORCE	
X	UNCLASSIFIED STATUS	X AXIS
Y	EVENT, STATE OR PRESENCE	Y AXIS
Z	POSITION	Z AXIS

SUCCEEDING LETTER

	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ALARM		USER's CHOICE
B	USER's CHOICE	USER's CHOICE	CLOSED
C		CONTROL	
D			
E	SENSOR (PRIMARY ELEMENT)		
F			
G	GLASS, VIEWING DEVICE		
H		HIGH/LEVEL	HIGH/CLOSE
I	INDICATE		
J			
K		CONTROL STATION	
L	LIGHT	LOW/LEVEL	LOW/CLOSE
M			MIDDLE, INTERMEDIATE
N	USER's CHOICE	USER's CHOICE	USER's CHOICE
O	OFFICE, RESTRICTION		OPEN
P	POINT (TEST) CONNECTION		
Q			
R	RECORD		
S		SWITCH	
T		TRANSMIT	
U	MALFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V		VALVE, DAMPER, LOUVER	
W	WELL		
X	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y		RELAY, COMPOTE, CONVERT	
Z		DRIVER, ACTUATOR, UNCLASSIFIED FINALCONTROL ELEMENT	

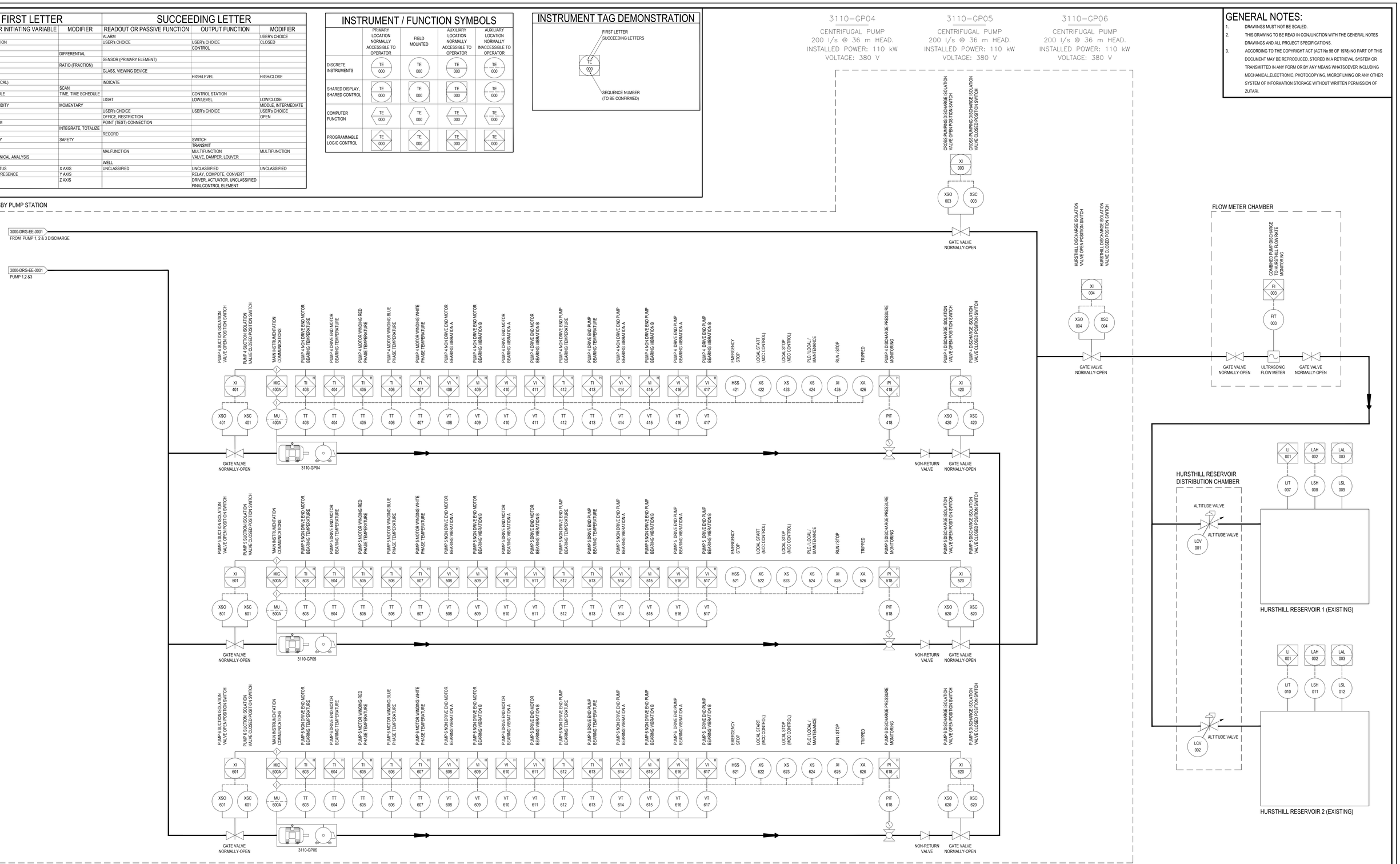
INSTRUMENT / FUNCTION SYMBOLS

	PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR	FIELD MOUNTED	AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR	AUXILIARY LOCATION NORMALLY INACCESSIBLE TO OPERATOR
DISCRETE INSTRUMENTS	TE 000	TE 000	TE 000	TE 000
SHARED DISPLAY, SHARED CONTROL	TE 000	TE 000	TE 000	TE 000
COMPUTER FUNCTION	TE 000	TE 000	TE 000	TE 000
PROGRAMMABLE LOGIC CONTROL	TE 000	TE 000	TE 000	TE 000

INSTRUMENT TAG DEMONSTRATION

GENERAL NOTES:

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CONSULTING ENGINEERS	DESIGNED	PJ de KOCK	
ZUTARI IMPACT. ENGINEERED.	DRAWN	N.OLIPHANT	
32A JELLICOE AVENUE OXFORD CORNER ROSEBANK SOUTH AFRICA TEL: +27 11 214 4500	CHECKED BY:	L Van VELZE SIGNATURE / 05-2023 DATE	
CLIENT	ECSA REG. No.	-	
17 HARRISON STREET MARSHALLTOWN 2107	APPROVED BY:	J VAN NIEKERK SIGNATURE / 05-2023 DATE	
	ECSA REG. No.	20120043	

Johannesburg Water

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2107

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Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE CROSBY BULK INFRASTRUCTURE PROJECT
PROCESS AND INSTRUMENTATION DIAGRAM

APPROVAL BY JW DEPOT			SCALE
CHECKED			
APPROVED BY:			AS SHOWN
SIGNATURE:		DATE	

APPROVAL BY JW PLANNING		
CHECKED		
APPROVED BY:		
SIGNATURE:		DATE

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	FOR TENDER	29-11-2023

DRAWING No.

113503 - 3000-PID-EE-0002 - T0

PROJECT No. / DRAWING No. / REV.

A0 ORIGINAL PAGE SIZE

SHEET 1 OF 1

FILE No.

FIRST LETTER

	MEASURED OR INITIATING VARIABLE	MODIFIER
A	ANALYSIS	
B	BURNER, COMBUSTION	
C	CONDUCTIVITY	
D	DENSITY	DIFFERENTIAL
E	VOLTAGE	
F	FLOW RATE	RATIO (FRACTION)
G	USER's CHOICE	
H	HAND	
I	CURRENT (ELECTRICAL)	
J	POWER	SCAN
K	TIME, TIME SCHEDULE	TIME, TIME SCHEDULE
L	LEVEL	
M	MOISTURE OR HUMIDITY	MOMENTARY
N	USER's CHOICE	
O	USER's CHOICE	
P	PRESSURE, VACUUM	
Q	QUANTITY	INTEGRATE, TOTALIZE
R	RADIATION	
S	SPEED, FREQUENCY	SAFETY
T	TEMPERATURE	
U	MULTIVARIABLE	
V	VIBRATION, MECHANICAL ANALYSIS	
W	WEIGHT, FORCE	
X	UNCLASSIFIED STATUS	X AXIS
Y	EVENT, STATE OR PRESENCE	Y AXIS
Z	POSITION	Z AXIS

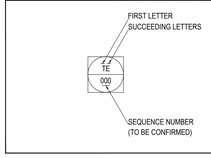
SUCCEEDING LETTER

READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
ALARM		USER's CHOICE
USER's CHOICE	USER's CHOICE	CLOSED
	CONTROL	
SENSOR (PRIMARY ELEMENT)		
GLASS, VIEWING DEVICE		
	HIGH/LEVEL	HIGH/CLOSE
INDICATE		
	CONTROL STATION	
LIGHT	LOW/LEVEL	LOW/CLOSE
		MIDDLE, INTERMEDIATE
USER's CHOICE	USER's CHOICE	USER's CHOICE
OFFICE, RESTRICTION		OPEN
POINT (TEST) CONNECTION		
RECORD		
	SWITCH	
	TRANSMIT	
MALFUNCTION	MULTIFUNCTION	MULTIFUNCTION
	VALVE, DAMPER, LOUVER	
WELL		
UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
	RELAY, COMPOTE, CONVERT	
	DRIVER, ACTUATOR, UNCLASSIFIED FINALCONTROL ELEMENT	

INSTRUMENT / FUNCTION SYMBOLS

	PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR	FIELD MOUNTED	AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR	AUXILIARY LOCATION NORMALLY INACCESSIBLE TO OPERATOR
DISCRETE INSTRUMENTS	TE 000	TE 000	TE 000	TE 000
SHARED DISPLAY, SHARED CONTROL	TE 000	TE 000	TE 000	TE 000
COMPUTER FUNCTION	TE 000	TE 000	TE 000	TE 000
PROGRAMMABLE LOGIC CONTROL	TE 000	TE 000	TE 000	TE 000

INSTRUMENT TAG DEMONSTRATION



3110-GP07

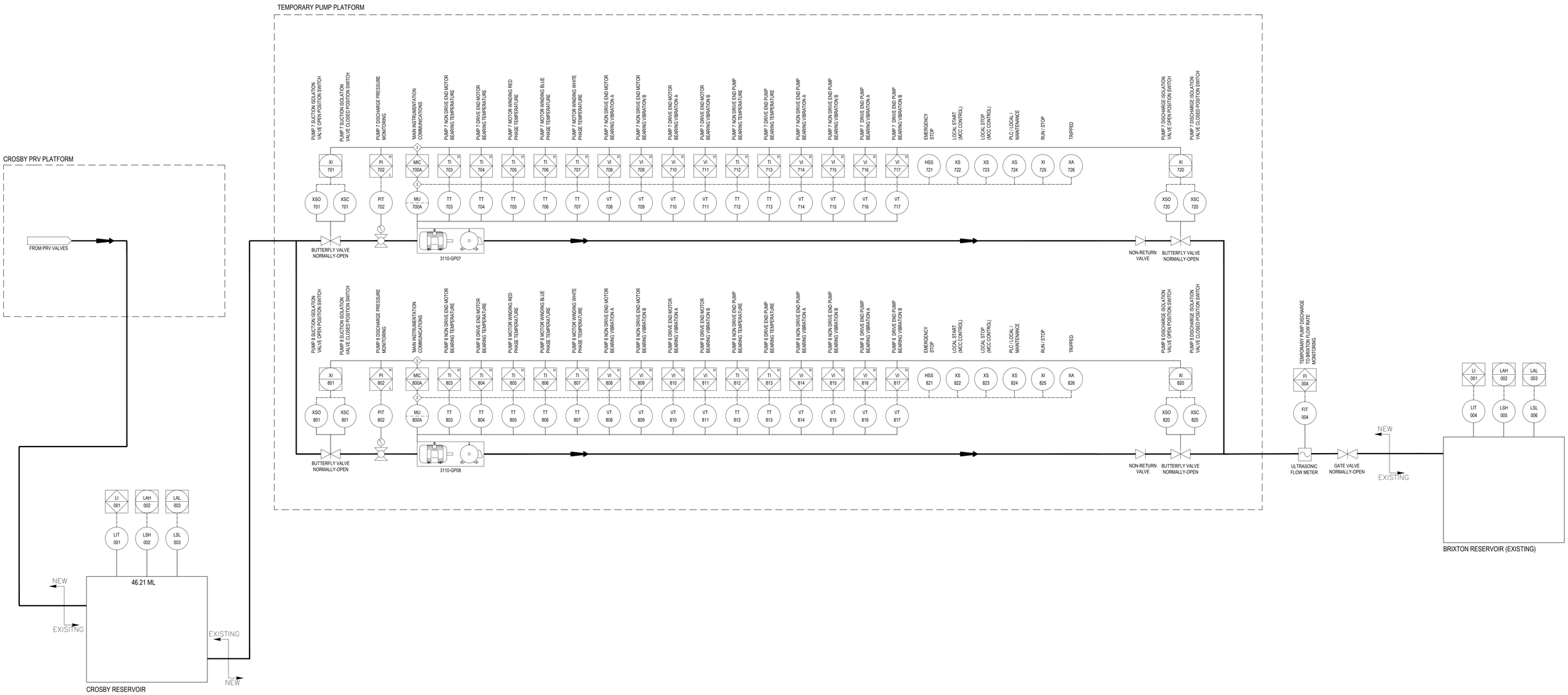
CENTRIFUGAL PUMP
224 l/s @ 39.9 m HEAD.
INSTALLED POWER: 132 kW
VOLTAGE: 380 V

3110-GP08

CENTRIFUGAL PUMP
240 l/s @ 39.9 m HEAD.
INSTALLED POWER: 132 kW
VOLTAGE: 380 V

GENERAL NOTES:

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DESIGNED	PJ de KOCK	
DRAWN	N.OLIPHANT	
CHECKED BY:	L Van VELZE	
	SIGNATURE	05-2023 DATE
ECSA REG. No.	-	
APPROVED BY:	J VAN NIEKERK	
	SIGNATURE	05-2023 DATE
ECSA REG. No.	20120043	

Johannesburg Water

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FAX: (011) 688-1529

Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE CROSBY BULK INFRASTRUCTURE PROJECT
PROCESS AND INSTRUMENTATION DIAGRAM
TEMPORARY PUMP STATION

APPROVAL BY JW DEPOT		
CHECKED		
APPROVED BY:		
SIGNATURE:		DATE

APPROVAL BY JW PLANNING		
CHECKED		
APPROVED BY:		
SIGNATURE:		DATE

SCALE: AS SHOWN

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	FOR TENDER	29-11-2023

DRAWING No.

113503 - 3000-PID-EE-0003 - T0
PROJECT No. DRAWING No. REV.

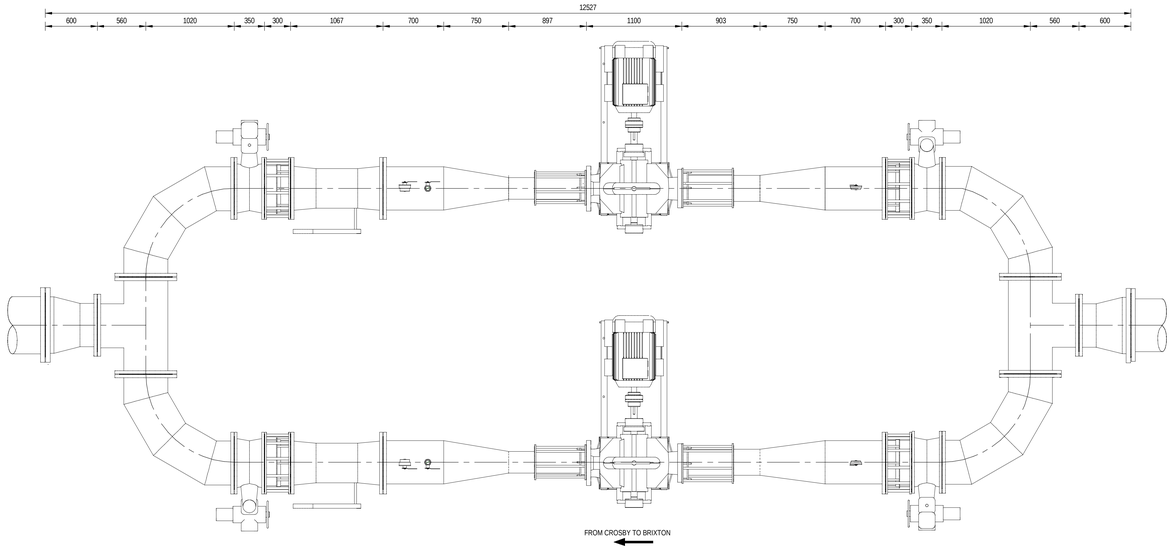
A0 ORIGINAL PAGE SIZE
SHEET 1 OF 1
FILE No.

PART LIST TEMPORARY PUMP MECHANICALS ASSEMBLY

ITEM	QTY	PART DESCRIPTION
1	1	DN 600 x 500 x 6 mm CONCENTRIC REDUCER (4xD LENTGTH) TO SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1123 T1600/3 (RF)
2	2	DN 500 x 500 x 90 DEGREE EQUAL TEE TO SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1123 T1600/3 (RF)
3	5	DN 500 x 6 mm 90 DEGREE MEDIUM RADIUS (2xD) BEND TO SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1123 T1600/3 (RF)
4	4	DN 500 PN 16 BUTTERFLY VALVE TO SANS 1849 (RF) FLANGED BOTH ENDS SANS 1123 TABLE 1123 T1600/3 (RF)
5	4	DN 500 PN 16 DISMANTLING JOINT, DRILLED TO SANS 1123 TABLE 1600/3 (RF)
6	2	DN 500 x 300 x 6 mm CONCENTRIC REDUCER TO SANS 719 GRADE C;WITH PIPE SUPPORT AND RESTRAINING FLANGE ADAPTER FLANGED ON ONE END SANS 1123 TABLE 1123 T1600/3 (RF)
7	2	KSB OMEGA 250-480 OR SIMILAR APPROVED FLANGED BOTH ENDS SANS 1123 TABLE 1123 T1600/3 (RF)
8	2	DN500 SWING CHECK VALVE, FLANGED BOTH ENDS SANS 1123 TABLE 1123 T1600/3 (RF)
9	1	DN 650 x 500 x 6 mm CONCENTRIC REDUCER (4xD LENTGTH) TO SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1123 T1600/3 (RF)
10	2	DN 500 x 250 x 6 mm CONCENTRIC REDUCER TO SANS 719 GRADE C;WITH PIPE SUPPORT AND RESTRAINING FLANGE ADAPTER FLANGED ON ONE END SANS 1123 TABLE 1123 T1600/3 (RF)

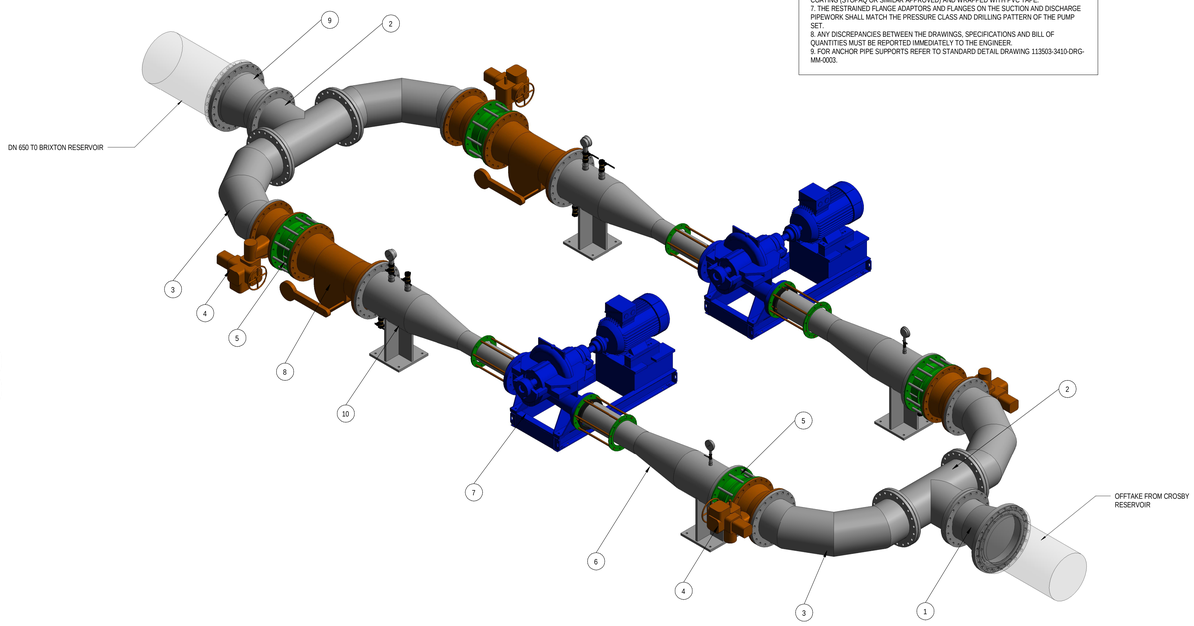
MECHANICAL NOTES:

1. DRAWINGS MUST NOT BE SCALED.
2. ALL PIPEWORK IS INDICATIVE AND SHALL NOT BE MANUFACTURED FROM THIS DRAWING. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE PIPEWORK, VALVES AND SPECIALS. THE CONTRACTOR SHALL SUBMIT DESIGN CALCULATIONS AND SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL BEFORE MANUFACTURING OR FABRICATION COMMENCES. THE DESIGN MUST BE IN ACCORDANCE WITH THE MECHANICAL SPECIFICATION.
3. ACCORDING TO THE COPYRIGHT ACT (ACT No 98 OF 1978) NO PART OF THIS DOCUMENT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WHATSOEVER INCLUDING MECHANICAL, ELECTRONIC, PHOTOCOPYING, MICROFILMING OR ANY OTHER SYSTEM OF INFORMATION STORAGE WITHOUT WRITTEN PERMISSION FROM ZUTARI.
4. THE CONTRACTOR SHALL SURVEY ALL ABOVE GROUND AND UNDERGROUND PIPES TO CONFIRM LEVELS AND SHALL PROVIDE SURVEY INFORMATION TO THE ENGINEER.
5. THE CONTRACTOR SHALL MAKE PROVISION FOR FITTINGS TO C&I CONNECTIONS, LOCAL DRAIN POINS AND QUICK-COUPLING CONNECTION POINTS TO FLUSH THE LINE WITH COMPRESSED AIR.
6. ALL FLANGES AND FITTINGS BELOW GROUND SHALL BE COVERED WITH A VISCO-ELASTIC COATING (STOPAQ OR SIMILAR APPROVED) AND WRAPPED WITH PVC TAPE.
7. THE RESTRAINED FLANGE ADAPTORS AND FLANGES ON THE SUCTION AND DISCHARGE PIPEWORK SHALL MATCH THE PRESSURE CLASS AND DRILLING PATTERN OF THE PUMP SET.
8. ANY DISCREPANCIES BETWEEN THE DRAWINGS, SPECIFICATIONS AND BILL OF QUANTITIES MUST BE REPORTED IMMEDIATELY TO THE ENGINEER.
9. FOR ANCHOR PIPE SUPPORTS REFER TO STANDARD DETAIL DRAWING 113503-3410-DRG-MM-0003.



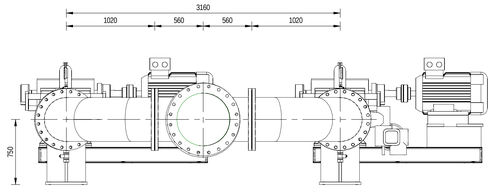
TEMPORARY BRIXTON PUMP SET - PLAN VIEW

SCALE 1 : 25



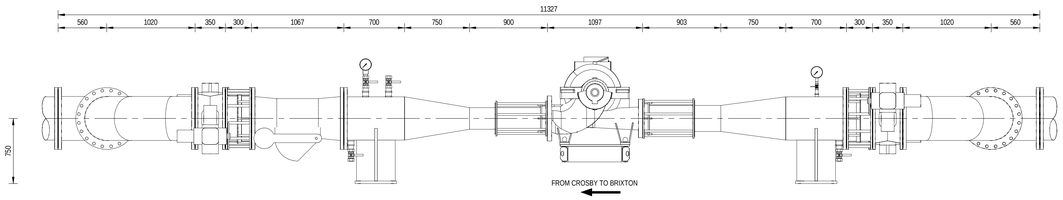
TEMPORARY BRIXTON PUMP SET - ISOMETRIC VIEW

NTS



TEMPORARY BRIXTON PUMP SET - SIDE VIEW

SCALE 1 : 25



TEMPORARY BRIXTON PUMP SET - FRONT VIEW

SCALE 1 : 25

CONSULTING ENGINEERS
ZUTARI IMPACT. ENGINEERED.
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OXFORD CORNER
ROSEBANK
SOUTH AFRICA
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CLIENT
17 HARRISON STREET
MARSHALLTOWN
2107

DESIGNED:	L. GWIJI	17.11.23	
DRAWN:	L. GWIJI	26.01.24	
CHECKED:	S. CHETTY	26.01.24	
APPROVED BY:	R. BARRY	26.01.24	
	SIGNATURE	DATE	
ECSA REG No:			
CHECKED BY:			
	SIGNATURE	DATE	
ECSA REG No:			

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

TEL: (011) 688-1400

FAX: (011) 688-1529

Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

TEMPORARY BRIXTON PUMP
MECHANICAL ARRANGEMENT
SHEET 1 OF 2

APPROVAL BY JW DEPOT			SCALE
CHECKED:			AS SHOWN
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
APPROVED BY:			
	SIGNATURE BY:	DATE:	

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	26.1.24

DRAWING No.

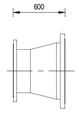
113503 - 3310 - DRG - MM - 0007 - T0

PROJECT No. | DRAWING No. | REV.

A0 ORIGINAL PAGE SIZE

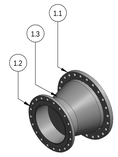
SHEET 1 OF 2

File Name: Brixton Reservoir and Tower Area\TEMPORARY_PS_PIPEWORK.rvt
Office: MM
File Date: 2024/01/26 5:07:44



ITEM 1 - PLAN VIEW

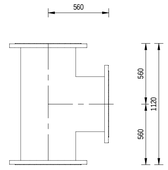
SCALE 1 : 25



ITEM 1 - ISOMETRIC VIEW

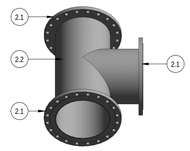
NTS

PARTS LIST - ITEM 1		
ITEM	QTY	PART DESCRIPTION
1.1	1	DN 600 PN16 FLANGE SANS 1123 (RF) TABLE 1600/3
1.2	1	DN 500 PN16 FLANGE SANS 1123 (RF) TABLE 1600/3
1.3	1	DN 500 x 650 x 6 mm CONCENTRIC REDUCER TO SANS 719 GRADE C



ITEM 2 - PLAN VIEW

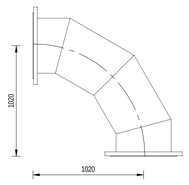
SCALE 1 : 20



ITEM 2 - ISOMETRIC VIEW

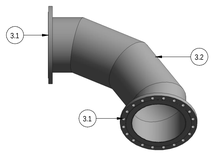
NTS

PARTS LIST - ITEM 2		
ITEM	QTY	PART DESCRIPTION
2.1	3	DN 500 PN16 FLANGE SANS 1123 (RF) TABLE 1600/3
2.2	1	DN 500 x 500 x 90 DEGREE EQUAL TEE TO SANS 719 GRADE C



ITEM 3 - PLAN VIEW

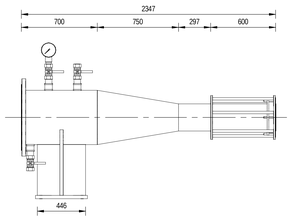
SCALE 1 : 20



ITEM 3 - ISOMETRIC VIEW

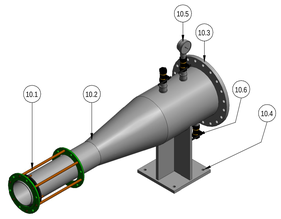
NTS

PARTS LIST - ITEM 3		
ITEM	QTY	PART DESCRIPTION
3.1	2	DN 500 PN16 FLANGE SANS 1123 (RF) TABLE 1600/3
3.2	1	DN 500 x 6 mm 90 DEGREE MEDIUM RADIUS (2xD) BEND TO SANS 719 GRADE C



ITEM 10 - FRONT VIEW

SCALE 1 : 20



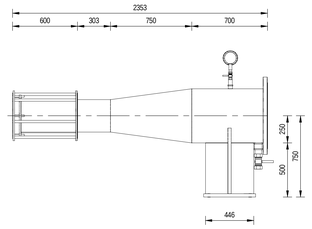
ITEM 10 - ISOMETRIC VIEW

NTS

PARTS LIST - ITEM 10		
ITEM	QTY	PART DESCRIPTION
10.1	1	DN 250 PN16 RESTRAINING FLANGE ADAPTOR, DRILLED TO SANS 1123 TABLE 1600/3 (RF)
10.2	1	DN 500 x 250 x 6 mm CONCENTRIC REDUCER TO SANS 719 GRADE C
10.3	1	DN 500 16 FLANGE SANS 1123 (RF) TABLE 1600/3
10.4	1	DN 500 PIPE ANCHOR SUPPORT
10.5	1	DN 50 PRESSURE GAUGE UNIT
10.6	1	DN 50 BALL VALVE UNIT

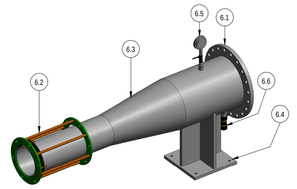
MECHANICAL NOTES:

1. DRAWINGS MUST NOT BE SCALED.
2. ALL PIPEWORK IS INDICATIVE AND SHALL NOT BE MANUFACTURED FROM THIS DRAWING. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE PIPEWORK, VALVES AND SPECIALS. THE CONTRACTOR SHALL SUBMIT DESIGN CALCULATIONS AND SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL BEFORE MANUFACTURING OR FABRICATION COMMENCES. THE DESIGN MUST BE IN ACCORDANCE WITH THE MECHANICAL SPECIFICATION.
3. ACCORDING TO THE COPYRIGHT ACT (ACT No 98 OF 1978) NO PART OF THIS DOCUMENT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WHATSOEVER INCLUDING MECHANICAL, ELECTRONIC, PHOTOCOPYING, MICROFILMING OR ANY OTHER SYSTEM OF INFORMATION STORAGE WITHOUT WRITTEN PERMISSION FROM ZUTARI.
4. THE CONTRACTOR SHALL SURVEY ALL ABOVE GROUND AND UNDERGROUND PIPES TO CONFIRM LEVELS AND SHALL PROVIDE SURVEY INFORMATION TO THE ENGINEER.
5. THE CONTRACTOR SHALL MAKE PROVISION FOR FITTINGS TO C&I CONNECTIONS, LOCAL DRAIN POINS AND QUICK-COUPLING CONNECTION POINTS TO FLUSH THE LINE WITH COMPRESSED AIR.
6. ALL FLANGES AND FITTINGS BELOW GROUND SHALL BE COVERED WITH A VISCO-ELASTIC COATING (STOPAQ OR SIMILAR APPROVED) AND WRAPPED WITH PVC TAPE.
7. THE RESTRAINED FLANGE ADAPTORS AND FLANGES ON THE SUCTION AND DISCHARGE PIPEWORK SHALL MATCH THE PRESSURE CLASS AND DRILLING PATTERN OF THE PUMP SET.
8. ANY DISCREPANCIES BETWEEN THE DRAWINGS, SPECIFICATIONS AND BILL OF QUANTITIES MUST BE REPORTED IMMEDIATELY TO THE ENGINEER.
9. FOR ANCHOR PIPE SUPPORTS REFER TO STANDARD DETAIL DRAWING 113503-3410-DRG-MM-0003.



ITEM 6 - FRONT VIEW

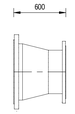
SCALE 1 : 20



ITEM 6 - ISOMETRIC VIEW

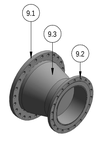
NTS

PARTS LIST - ITEM 6		
ITEM	QTY	PART DESCRIPTION
6.1	1	DN 500 PN16 FLANGE SANS 1123 (RF) TABLE 1600/3
6.2	1	DN 300 PN16 RESTRAINING FLANGE ADAPTOR, DRILLED TO SANS 1123 TABLE 1600/3 (RF)
6.3	1	DN 500 x 300 x 6 mm CONCENTRIC REDUCER TO SANS 719 GRADE C
6.4	1	DN 500 PIPE ANCHOR SUPPORT
6.5	1	DN 25 PRESSURE GAUGE UNIT
6.6	1	DN 50 BALL VALVE UNIT



ITEM 9 - PLAN VIEW

SCALE 1 : 25



ITEM 9 - ISOMETRIC

NTS

PARTS LIST - ITEM 9		
ITEM	QTY	PART DESCRIPTION
9.1	1	DN 650 PN16 FLANGE SANS 1123 (RF) TABLE 1600/3
9.2	1	DN 500 PN16 FLANGE SANS 1123 (RF) TABLE 1600/3
9.3	1	DN 500 x 650 x 6 mm CONCENTRIC REDUCER TO SANS 719 GRADE C

CONSULTING ENGINEERS
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17 HARRISON STREET
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2107

DESIGNED:	L. GWIJI	17.11.23	
DRAWN:	L. GWIJI	26.01.24	
CHECKED:	S. CHETTY	26.01.24	
APPROVED BY:	R. BARRY	26.01.24	
	SIGNATURE	DATE	
ECSA REG No:			
CHECKED BY:			
	SIGNATURE	DATE	
ECSA REG No:			

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

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FAX: (011) 688-1529

Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

TEMPORARY BRIXTON PUMP
MECHANICAL ARRANGEMENT
SHEET 2 OF 2

APPROVAL BY JW DEPOT			
CHECKED:			
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
APPROVED BY:			
	SIGNATURE BY:	DATE:	

SCALE: AS SHOWN

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	26.1.24

DRAWING No.

113503 - 3310-DRG-MM-0008 - T0

PROJECT No. | DRAWING No. | REV.

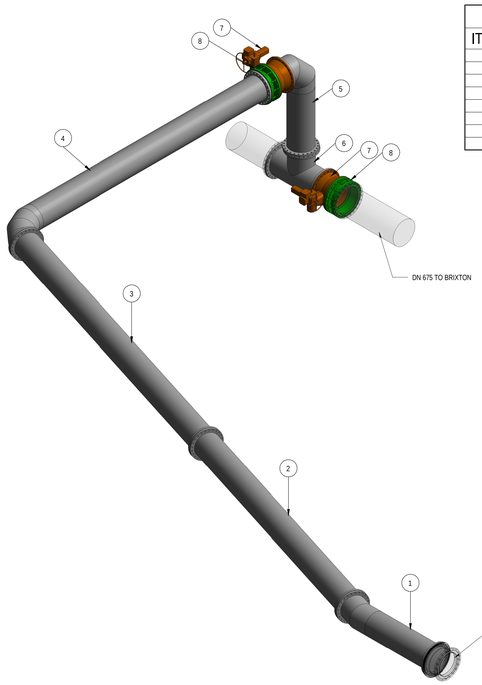
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SHEET 2 OF 2

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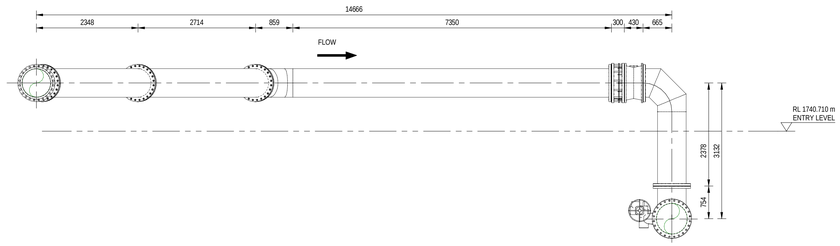
PART LIST - TEMPORARY DISCHARGE MECHANICAL ASSEMBLY

ITEM	QTY	PART DESCRIPTION
1	1	DN 650 x 6 mm 17.6 DEGREE MEDIUM RADIUS (2xD) BEND TO SANS 719 GRADE C WELDED TO DN 650 x 6 mm SPOOL PIECE TO SANS 719 GRADE C; FLANGED BOTH ENDS
2	1	DN 650 x 6 mm SPOOL PIECE TO SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1123 T1600/3 (RF)
3	1	DN 650 x 6 mm SPOOL PIECE TO SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1123 T1600/3 (RF)
4	1	DN 650 x 6 mm 72.4 DEGREE MEDIUM RADIUS (2xD) BEND TO WELDED TO DN 650 x 6 mm SPOOL PIECE TO SNS 719 GRADE C; FLANGED BOTH ENDS
5	1	DN 650 x 6 mm 90 DEGREE MEDIUM RADIUS (2xD) BEND TO WELDED TO DN 650 x 6 mm SPOOL PIECE TO SNS 719 GRADE C; FLANGED BOTH ENDS
6	1	DN 700 x 650 x 90 DEGREE TEE TO SANS 719 GRADE C; FLANGED BOTH ENDS
7	2	DN 700 PN 16 BUTTERFLY VALVE WITH GEARBOX TO SANS 1849 (RF)
8	2	DN 700 PN 16 DISMANTLING JOINT, DRILLED TO SANS 1123 TABLE 1600/3 (RF)



TEMPORARY DISCHARGE PIPEWORK - ISOMETRIC VIEW

NTS

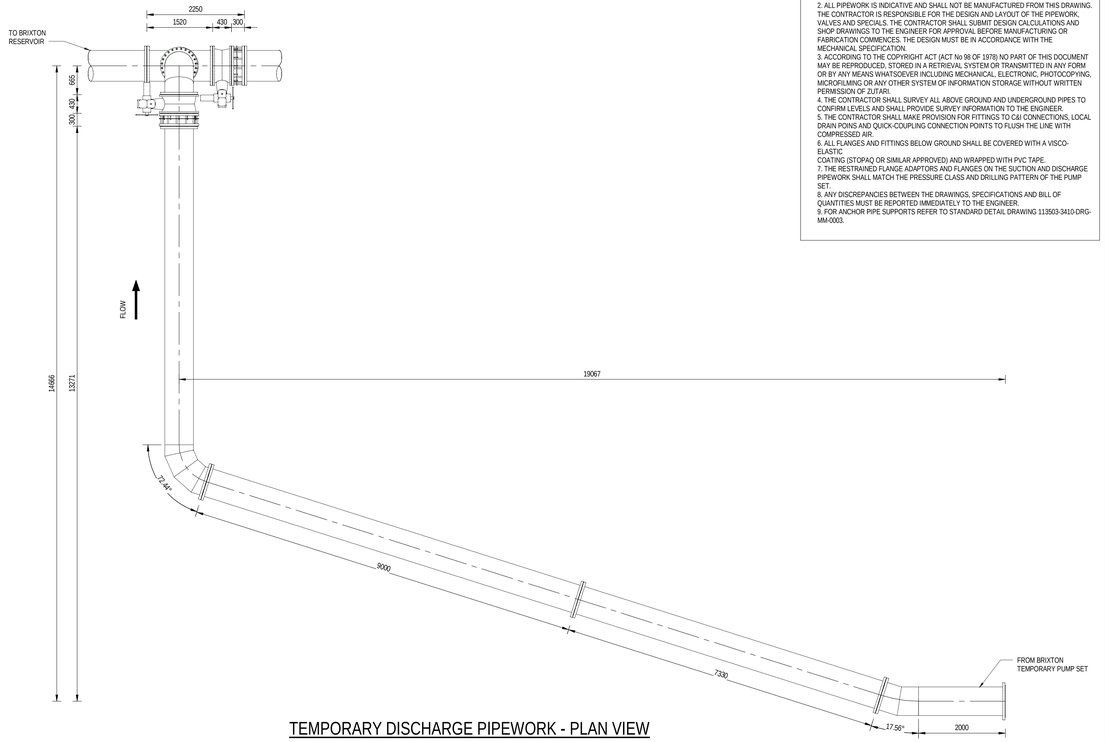


TEMPORARY DISCHARGE PIPEWORK - SIDE VIEW

SCALE 1 : 50

MECHANICAL NOTES:

1. DRAWINGS MUST NOT BE SCALED.
2. ALL PIPEWORK IS INDICATIVE AND SHALL NOT BE MANUFACTURED FROM THIS DRAWING. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE PIPEWORK, VALVES AND SPECIALS. THE CONTRACTOR SHALL SUBMIT DESIGN CALCULATIONS AND SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL BEFORE MANUFACTURING OR FABRICATION COMMENCES. THE DESIGN MUST BE IN ACCORDANCE WITH THE MECHANICAL SPECIFICATION.
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9. FOR ANCHOR PIPE SUPPORTS REFER TO STANDARD DETAIL DRAWING 113503-3410-DRG-MM-0003.

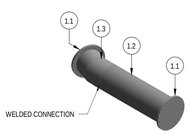


TEMPORARY DISCHARGE PIPEWORK - PLAN VIEW

SCALE 1 : 50

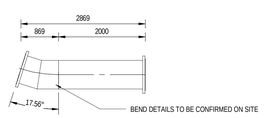
PARTS LIST - ITEM 1

ITEM	QTY	PART DESCRIPTION
1.1	2	DN 650 PN16 FLANGE SANS 1123 (RF) TABLE 1600/3
1.2	1	DN 650 x 6 mm 17.6 DEGREE MEDIUM RADIUS (2xD) BEND TO SANS 719 GRADE C
1.3	1	DN 650 x 6 mm SPOOL PIECE TO SANS 719 GRADE C



ITEM 1 - ISOMETRIC VIEW

NTS

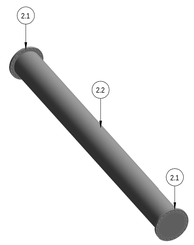


ITEM 1 - PLAN VIEW

SCALE 1 : 50

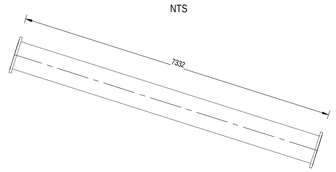
PARTS LIST - ITEM 2

ITEM	QTY	PART DESCRIPTION
2.1	2	DN 650 PN16 FLANGE SANS 1123 (RF) TABLE 1600/3
2.2	1	DN 650 x 6 mm SPOOL PIECE TO SANS 719 GRADE C



ITEM 2 - ISOMETRIC VIEW

NTS

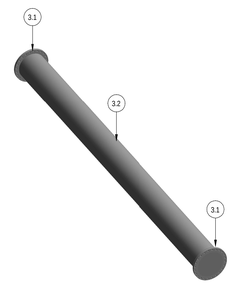


ITEM 2 - PLAN VIEW

SCALE 1 : 50

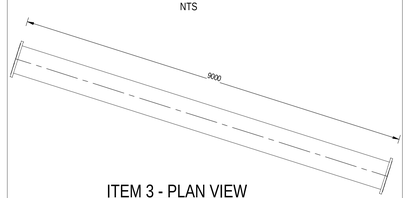
PARTS LIST - ITEM 3

ITEM	QTY	PART DESCRIPTION
3.1	2	DN 650 PN16 FLANGE SANS 1123 (RF) TABLE 1600/3
3.2	1	DN 650 x 6 mm SPOOL PIECE TO SANS 719 GRADE C



ITEM 3 - ISOMETRIC VIEW

NTS

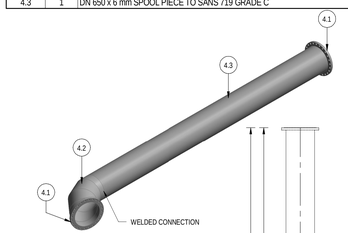


ITEM 3 - PLAN VIEW

SCALE 1 : 50

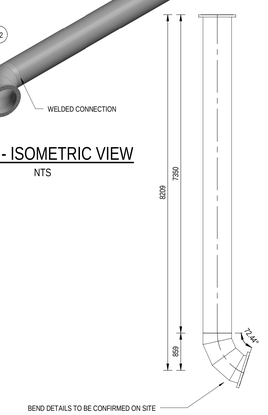
PARTS LIST - ITEM 4

ITEM	QTY	PART DESCRIPTION
4.1	2	DN 650 PN16 FLANGE SANS 1123 (RF) TABLE 1600/3
4.2	1	DN 650 x 6 mm 72.4 DEGREE MEDIUM RADIUS (2xD) BEND TO SANS 719 GRADE C
4.3	1	DN 650 x 6 mm SPOOL PIECE TO SANS 719 GRADE C



ITEM 4 - ISOMETRIC VIEW

NTS

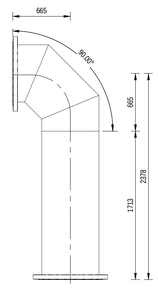


ITEM 4 - PLAN VIEW

SCALE 1 : 50

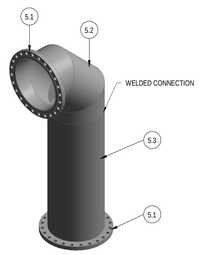
PARTS LIST - ITEM 5

ITEM	QTY	PART DESCRIPTION
5.1	2	DN 650 PN16 FLANGE SANS 1123 (RF) TABLE 1600/3
5.2	1	DN 650 x 6 mm 90 DEGREE MEDIUM RADIUS (1xD) BEND TO SANS 719 GRADE C
5.3	1	DN 650 x 6 mm SPOOL PIECE TO SANS 719 GRADE C



ITEM 5 - SIDE VIEW

SCALE 1 : 25

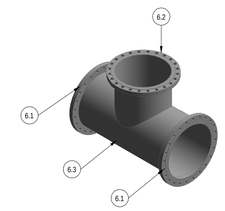


ITEM 5 - ISOMETRIC VIEW

NTS

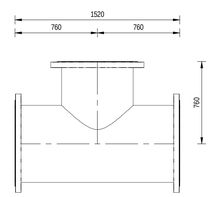
PARTS LIST - ITEM 6

ITEM	QTY	PART DESCRIPTION
6.1	2	DN 700 PN16 FLANGE SANS 1123 (RF) TABLE 1600/3
6.2	1	DN 650 16 FLANGE SANS 1123 (RF) TABLE 1600/3
6.3	1	DN 700 x 650 x 90 DEGREE TEE TO SANS 719 GRADE C



ITEM 6 - ISOMETRIC VIEW

NTS



ITEM 6 - SIDE VIEW

SCALE 1 : 20

CONSULTING ENGINEERS
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OXFORD CORNER
ROSEBANK
SOUTH AFRICA
TEL: +27 11 214 4500

CLIENT
17 HARRISON STREET
MARSHALLTOWN
2107

DESIGNED:	L. GWIJI		05.07.23
DRAWN:	L. GWIJI		26.01.24
CHECKED:	E. LOTTERING		26.01.24
APPROVED BY:	R. BARRY		26.01.24
	SIGNATURE	DATE	
ECSA REG No:	20160835		
CHECKED BY:			
	SIGNATURE	DATE	
ECSA REG No:			

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

TEL: (011) 688-1400

FAX: (011) 688-1529

Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

TEMPORARY BRIXTON PUMP DISCHARGE PIPEWORK
MECHANICAL DETAILS
SHEET 1 OF 1

APPROVAL BY JW DEPOT			SCALE
CHECKED:			AS SHOWN
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
APPROVED BY:			
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AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	26.01.24

DRAWING No.

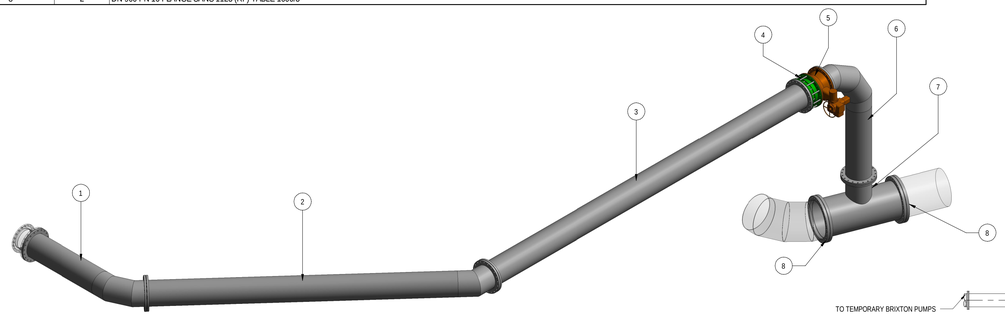
PROJECT No.	DRAWING No.	REV.
113503	- 3310 - DRG - MM - 0009 -	T0

A0 ORIGINAL PAGE SIZE — SHEET 1 OF 1

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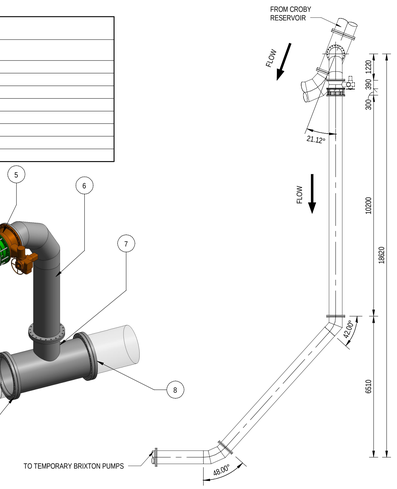
PART LIST - TEMPORARY SUCTION MECHANICAL ASSEMBLY

ITEM	QTY	PART DESCRIPTION
1	1	DN600 x 6 mm 48 DEGREE MEDIUM RADIUS (2xD) BEND WELDED TO A DN600 x 6 mm SPOOL PIECE TO SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1123 T1600/3 (RF)
2	1	DN600 x 6 mm 42 DEGREE MEDIUM RADIUS (2xD) BEND WELDED TO A DN600 x 6 mm SPOOL PIECE TO SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1123 T1600/3 (RF)
3	1	DN 600 x 6 mm SPOOL PIECE TO SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1123 T1600/3 (RF)
4	1	DN 600 PN 16 DISMANTLING JOINT, DRILLED TO SANS 1123 TABLE 1600/3 (RF)
5	1	DN 600 PN 16 BUTTERFLY VALVE TO SANS 1849 (RF)
6	1	DN 600 x 6 mm SPOOL PIECE TO SANS 719 GRADE C WELDED TO A 90 DEGREE MEDIUM RADIUS (2xD) BEND; FLANGED BOTH ENDS
7	1	DN 900 x 600 x 90 DEGREE EQUAL TEE; FLANGED BOTH ENDS
8	2	DN 900 PN 16 FLANGE SANS 1123 (RF) TABLE 1600/3



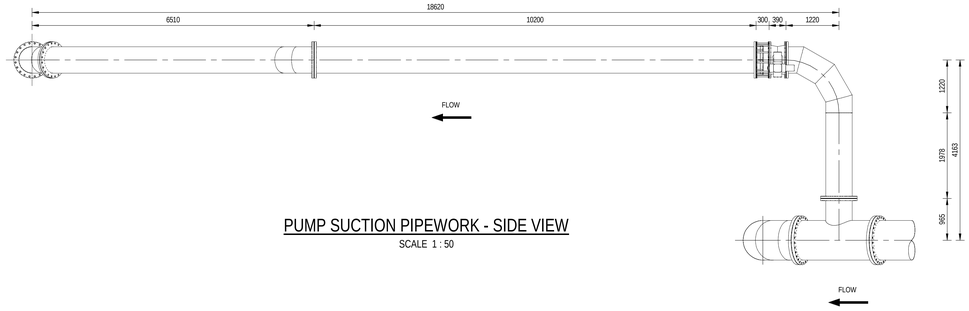
PUMP SUCTION PIPEWORK - ISOMETRIC VIEW

NTS



PUMP SUCTION PIPEWORK - PLAN VIEW

SCALE 1 : 100



PUMP SUCTION PIPEWORK - SIDE VIEW

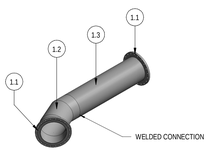
SCALE 1 : 50

MECHANICAL NOTES:

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9. FOR ANCHOR PIPE SUPPORTS REFER TO STANDARD DETAIL DRAWING 113503-3410-DRG MM-0003.

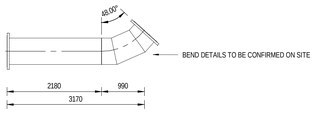
PARTS LIST - ITEM 1

ITEM	QTY	PART DESCRIPTION
1.1	2	DN 600 PN 16 FLANGE SANS 1123 (RF) TABLE 1600/3
1.2	1	DN 600 x 6 mm 48 DEGREE MEDIUM RADIUS (2xD) BEND TO SANS 719 GRADE C
1.3	1	DN 600 x 6 mm SPOOL PIECE TO SANS 719 GRADE C



ITEM 1 - ISOMETRIC VIEW

NTS

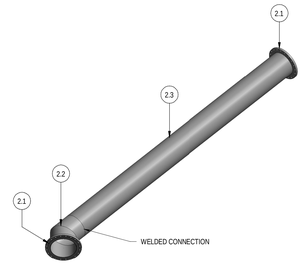


ITEM 1 - PLAN VIEW

SCALE 1 : 50

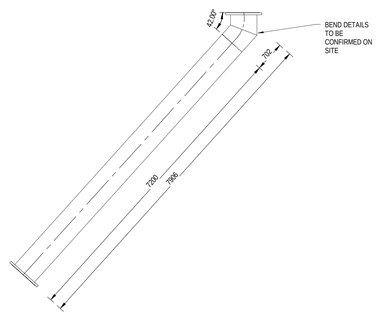
PARTS LIST - ITEM 2

ITEM	QTY	PART DESCRIPTION
2.1	2	DN 600 PN 16 FLANGE SANS 1123 (RF) TABLE 1600/3
2.2	1	DN 600 x 6 mm 42 DEGREE MEDIUM RADIUS (2xD) BEND TO SANS 719 GRADE C
2.3	1	DN 600 x 6 mm SPOOL PIECE TO SANS 719 GRADE C



ITEM 2 - ISOMETRIC VIEW

NTS

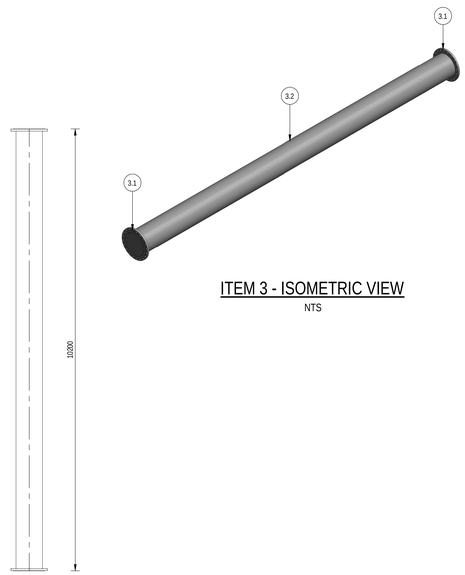


ITEM 2 - PLAN VIEW

SCALE 1 : 50

PARTS LIST - ITEM 3

ITEM	QTY	PART DESCRIPTION
3.1	2	DN 600 PN 16 FLANGE SANS 1123 (RF) TABLE 1600/3
3.2	1	DN 600 x 6 mm SPOOL PIECE TO SANS 719 GRADE C



ITEM 3 - ISOMETRIC VIEW

NTS

ITEM 3 - PLAN VIEW

SCALE 1 : 50

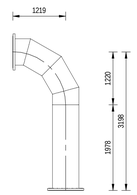
PARTS LIST - ITEM 6

ITEM	QTY	PART DESCRIPTION
6.1	2	DN 600 PN 16 FLANGE SANS 1123 (RF) TABLE 1600/3
6.2	1	DN 600 x 6 mm 90 DEGREE MEDIUM RADIUS (2xD) BEND TO SANS 719 GRADE C
6.3	1	DN 600 x 6 mm SPOOL PIECE TO SANS 719 GRADE C



ITEM 6 - ISOMETRIC VIEW

NTS

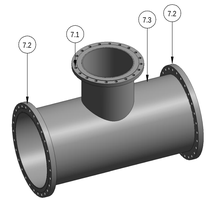


ITEM 6 - SIDE VIEW

SCALE 1 : 50

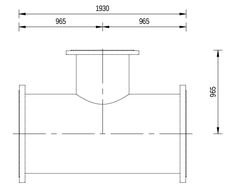
PARTS LIST - ITEM 7

ITEM	QTY	PART DESCRIPTION
7.1	1	DN 600 PN 16 FLANGE SANS 1123 (RF) TABLE 1600/3
7.2	2	DN 900 PN 16 FLANGE SANS 1123 (RF) TABLE 1600/3
7.3	1	DN 900 x 600 x 90 DEGREE EQUAL TEE TO SANS 719 GRADE C



ITEM 7 - ISOMETRIC VIEW

NTS



ITEM 7 - FRONT

SCALE 1 : 25

CONSULTING ENGINEERS
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MARSHALLTOWN
2107

DESIGNED:	L.GWIJI	05.07.23
DRAWN:	L.GWIJI	26.01.24
CHECKED:	E.LOTTERING	26.01.24
APPROVED BY:	R.BARRY	26.01.24
	SIGNATURE	DATE
ECSA REG No:	20160835	
CHECKED BY:		
	SIGNATURE	DATE
ECSA REG No:		

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

TEL: (011) 688-1400

FAX: (011) 688-1529

Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

TEMPORARY BRIXTON PUMP SUCTION PIPEWORK
MECHANICAL DETAILS
SHEET 1 OF 1

APPROVAL BY JW DEPOT			SCALE
CHECKED:			AS SHOWN
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
APPROVED BY:			
	SIGNATURE BY:	DATE:	

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	26.01.24

DRAWING No.

113503 - 3310-DRG-MM-0010 - T0

PROJECT No. | DRAWING No. | REV.

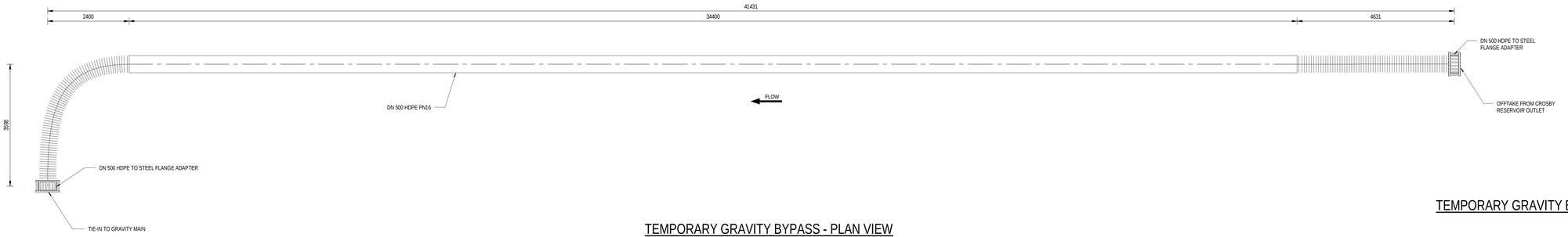
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SHEET 1 OF 1

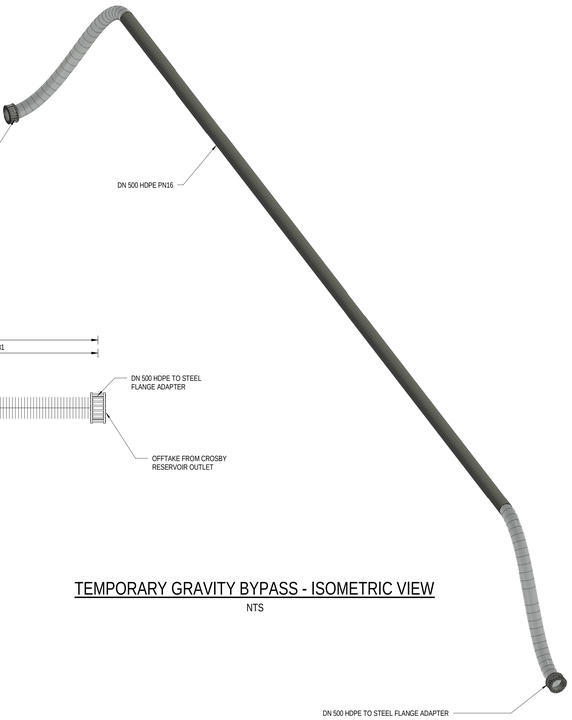
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Offset: Mid
Plot Date: 2024/01/26 15:47:04

MECHANICAL NOTES:

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TEMPORARY GRAVITY BYPASS - PLAN VIEW
SCALE 1 : 50



TEMPORARY GRAVITY BYPASS - ISOMETRIC VIEW
NTS



TEMPORARY GRAVITY BYPASS - SIDE VIEW
SCALE 1 : 50

CONSULTING ENGINEERS
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MARSHALLTOWN
2107

DESIGNED:	L. GWIJI	23.06.23	
DRAWN:	L. GWIJI	23.06.23	
CHECKED:	E. LOTTERING	23.06.23	
APPROVED BY:	R. BARRY	23.06.23	
	SIGNATURE	DATE	
ECSA REG No:	20160835		
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	SIGNATURE	DATE	
ECSA REG No:			

Johannesburg Water

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Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

TEMPORARY GRAVITY BYPASS
MECHANICAL DETAILS
SHEET 1 OF 1

APPROVAL BY JW DEPOT			
CHECKED:			
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
APPROVED BY:			
	SIGNATURE BY:	DATE:	

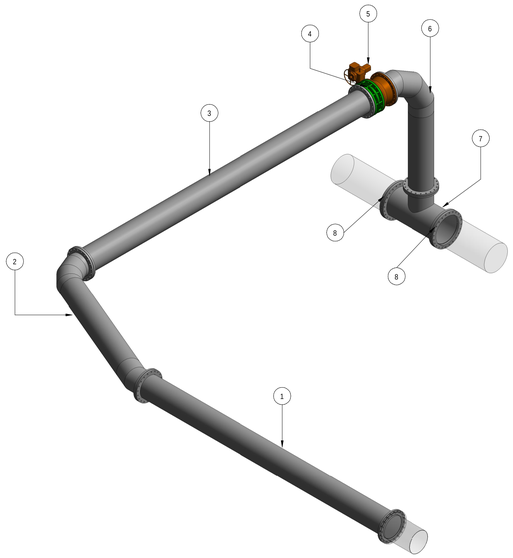
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REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	23.06.23

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PROJECT No. | DRAWING No. | REV.

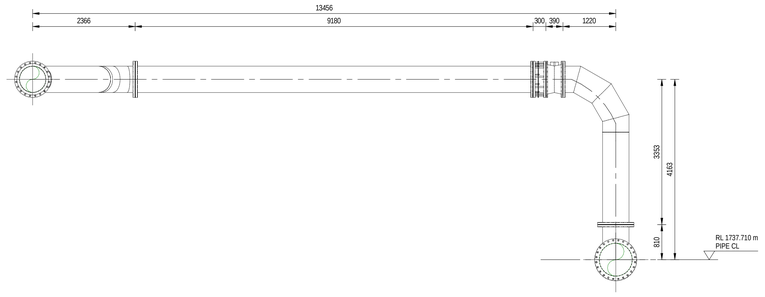
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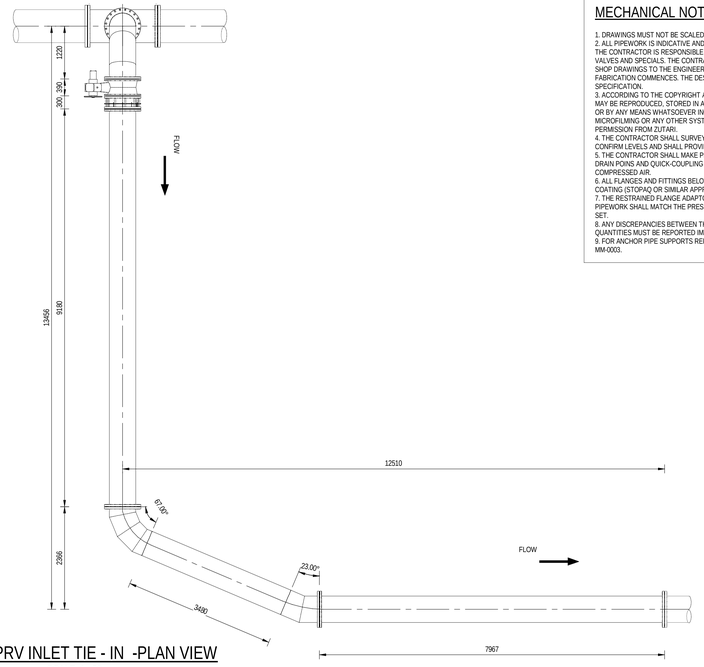
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PART LIST - BYPASS PRV INLET TIE-IN

ITEM	QTY	PART DESCRIPTION
1	1	DN 600 x 6 mm SPOOL PIECE TO SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1123 T1600/3 (RF)
2	1	DN 600 67 DEGREE AND DN 600 23 DEGREE MEDIUM RADIUS BEND WELDED TO DN 600 x 6 mm SPOOL PIECE TO SANS 719 GRADE C ; FLANGED BOTH ENDS SANS 1123 TABLE 1123 T1600/3 (RF)
3	1	DN 600 x 6 mm SPOOL PIECE TO SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1123 T1600/3 (RF)
4	1	DN 600 PN 16 DISMANTLING JOINT, DRILLED TO SANS 1123 TABLE 1600/3 (RF)
5	1	DN 600 PN 16 BUTTERFLY VALVE TO SANS 1849 (RF)
6	1	DN 600 90 DEGREE MEDIUM RADIUS BEND WELDED TO DN 600 x 6 mm SPOOL PIECE TO SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1123 T1600/3 (RF)
7	1	DN 750 x 600 x 90 DEGREE UNEQUAL TEE TO SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1123 T1600/3 (RF)
8	2	DN 750 PN16 FLANGE SANS 1123 (RF) TABLE 1600/3; WELDED TO EXISTING PIPEWORK





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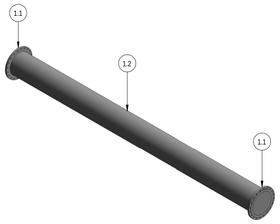
BYPASS PRV INLET TIE - IN - ISOMETRIC VIEW
NTS

BYPASS PRV INLET TIE - IN -SIDE VIEW
SCALE 1 : 50

BYPASS PRV INLET TIE - IN -PLAN VIEW
SCALE 1 : 50

PARTS LIST - ITEM 1

ITEM	QTY	PART DESCRIPTION
1.1	2	DN 600 PN16 FLANGE SANS 1123 (RF) TABLE 1600/3
1.2	1	DN 600 x 6 mm SPOOL PIECE TO SANS 719 GRADE C



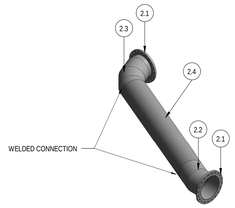
ITEM 1 - ISOMETRIC VIEW
NTS



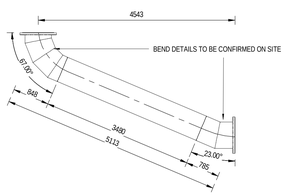
ITEM 1 - PLAN VIEW
SCALE 1 : 50

PARTS LIST - ITEM 2

ITEM	QTY	PART DESCRIPTION
2.1	2	DN 600 PN16 FLANGE SANS 1123 (RF) TABLE 1600/3
2.2	1	DN 600 x 6 mm 23 DEGREE MEDIUM RADIUS (2xD) BEND TO SANS 719 GRADE C
2.3	1	DN 600 x 6 mm 67 DEGREE MEDIUM RADIUS (2xD) BEND TO SANS 719 GRADE C
2.4	1	DN 600 x 6 mm SPOOL PIECE TO SANS 719 GRADE C



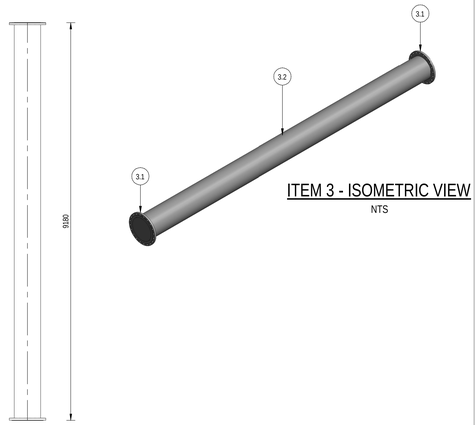
ITEM 2 - ISOMETRIC VIEW
NTS



ITEM 2 - PLAN VIEW
SCALE 1 : 50

PARTS LIST - ITEM 3

ITEM	QTY	PART DESCRIPTION
3.1	2	DN 600 PN16 FLANGE SANS 1123 (RF) TABLE 1600/3
3.2	1	DN 600 x 6 mm SPOOL PIECE TO SANS 719 GRADE C



ITEM 3 - ISOMETRIC VIEW
NTS

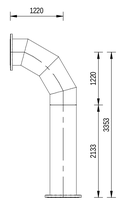
ITEM 3 - PLAN VIEW
SCALE 1 : 50

PARTS LIST - ITEM 6

ITEM	QTY	PART DESCRIPTION
6.1	2	DN 600 PN16 FLANGE SANS 1123 (RF) TABLE 1600/3
6.2	1	DN 600 x 6 mm 90 DEGREE MEDIUM RADIUS (2xD) BEND TO SANS 719 GRADE C
6.3	1	DN 600 x 6 mm SPOOL PIECE TO SANS 719 GRADE C



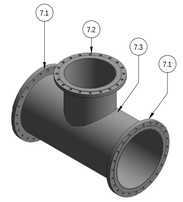
ITEM 6 - ISOMETRIC VIEW
NTS



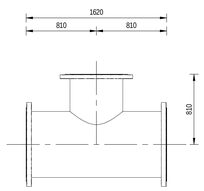
ITEM 6 - SIDE VIEW
SCALE 1 : 50

PARTS LIST - ITEM 7

ITEM	QTY	PART DESCRIPTION
7.1	2	DN 750 PN16 FLANGE SANS 1123 (RF) TABLE 1600/3
7.2	1	DN 600 PN16 FLANGE SANS 1123 (RF) TABLE 1600/3
7.3	1	DN 750 x 600 x 90 DEGREE EQUAL TEE TO SANS 719 GRADE C



ITEM 7 - ISOMETRIC VIEW
NTS



ITEM 7 - FRONT VIEW
SCALE 1 : 25

CONSULTING ENGINEERS
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PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

TEMPORARY PRV INLET PIPEWORK
MECHANICAL DETAILS
SHEET 1 OF 1

APPROVAL BY JW DEPOT			SCALE
CHECKED:			AS SHOWN
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
APPROVED BY:			
	SIGNATURE BY:	DATE:	

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	26.01.24

DRAWING No.

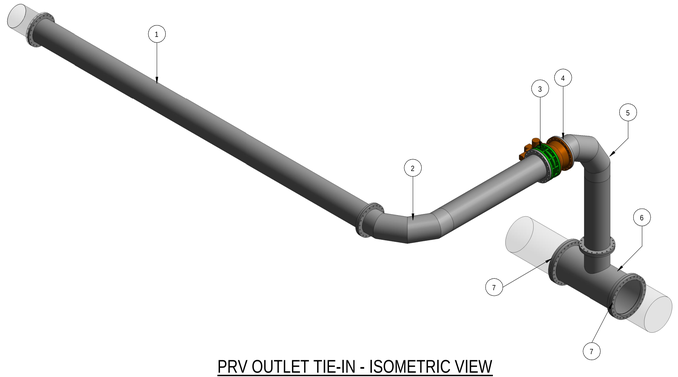
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113503	-	3310-DRG-MM-0012	-	T0

A0 ORIGINAL PAGE SIZE — SHEET 1 OF 1

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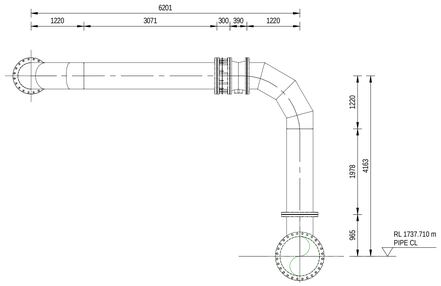
PART LIST - BYPASS PRV OUTLET TIE-IN ASSEMBLY

ITEM	QTY	PART DESCRIPTION
1	1	DN 600 x 6 mm SPOOL PIECE TO SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1123 T1600/3 (RF)
2	1	DN 600 90 DEGREE MEDIUM RADIUS (2xD) BEND WELDED TO DN 600 x 6 mm SPOOL PIECE TO SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1123 T1600/3 (RF)
3	1	DN 600 PN 16 DISMANTLING JOINT, DRILLED TO SANS 1123 TABLE 1600/3 (RF)
4	1	DN 600 PN 16 BUTTERFLY VALVE TO SANS 1849 (RF)
5	1	DN 600 90 DEGREE MEDIUM RADIUS (2xD) BEND WELDED TO DN 600 x 6 mm SPOOL PIECE TO SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1123 T1600/3 (RF)
6	1	DN 900 x 600 x 90 DEGREE EQUAL TEE TO SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1123 T1600/3 (RF)
7	2	DN 900 PN 16 FLANGNS 1123 (RF) TABLE 1600/3



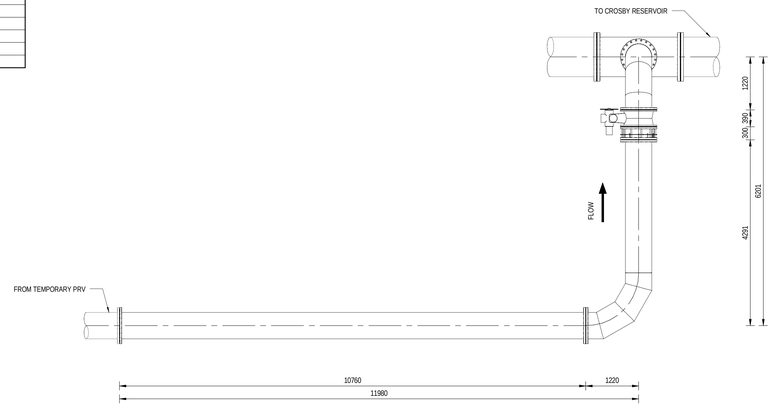
PRV OUTLET TIE-IN - ISOMETRIC VIEW

NTS



PRV OUTLET TIE-IN - SIDE VIEW

SCALE 1 : 50



PRV OUTLET TIE-IN - PLAN VIEW

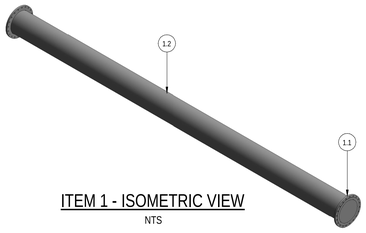
SCALE 1 : 50

MECHANICAL NOTES:

1. DRAWINGS MUST NOT BE SCALED.
2. ALL PIPEWORK IS INDICATIVE AND SHALL NOT BE MANUFACTURED FROM THIS DRAWING. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE PIPEWORK, VALVES AND SPECIALS. THE CONTRACTOR SHALL SUBMIT DESIGN CALCULATIONS AND SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL BEFORE MANUFACTURING OR FABRICATION COMMENCES. THE DESIGN MUST BE IN ACCORDANCE WITH THE MECHANICAL SPECIFICATION.
3. ACCORDING TO THE COPYRIGHT ACT (ACT No 98 OF 1978) NO PART OF THIS DOCUMENT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WHATSOEVER INCLUDING MECHANICAL, ELECTRONIC, PHOTOCOPYING, MICROFILMING OR ANY OTHER SYSTEM OF INFORMATION STORAGE WITHOUT WRITTEN PERMISSION FROM ZUTARI.
4. THE CONTRACTOR SHALL SURVEY ALL ABOVE GROUND AND UNDERGROUND PIPES TO CONFIRM LEVELS AND SHALL PROVIDE SURVEY INFORMATION TO THE ENGINEER.
5. THE CONTRACTOR SHALL MAKE PROVISION FOR FITTINGS TO C&I CONNECTIONS, LOCAL DRAIN POINS AND QUICK-COUPLING CONNECTION POINTS TO FLUSH THE LINE WITH COMPRESSED AIR.
6. ALL FLANGES AND FITTINGS BELOW GROUND SHALL BE COVERED WITH A VISCO-ELASTIC COATING (STOPAQ OR SIMILAR APPROVED) AND WRAPPED WITH PVC TAPE.
7. THE RESTRAINED FLANGE ADAPTORS AND FLANGES ON THE SUCTION AND DISCHARGE PIPEWORK SHALL MATCH THE PRESSURE CLASS AND DRILLING PATTERN OF THE PUMP SET.
8. ANY DISCREPANCIES BETWEEN THE DRAWINGS, SPECIFICATIONS AND BILL OF QUANTITIES MUST BE REPORTED IMMEDIATELY TO THE ENGINEER.
9. FOR ANCHOR PIPE SUPPORTS REFER TO STANDARD DETAIL DRAWING 113503-3410-DRG-MM-0003.

PARTS LIST - ITEM 1

ITEM	QTY	PART DESCRIPTION
1.1	1	DN 600 PN 16 FLANGE SANS 1123 (RF) TABLE 1600/3
1.2	1	DN 600 x 6 mm SPOOL PIECE TO SANS 719 GRADE C



ITEM 1 - ISOMETRIC VIEW

NTS

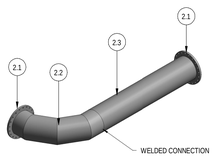


ITEM 1 - PLAN VIEW

SCALE 1 : 50

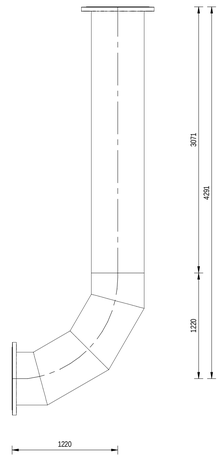
PARTS LIST - ITEM 2

ITEM	QTY	PART DESCRIPTION
2.1	2	DN 600 PN 16 FLANGE SANS 1123 (RF) TABLE 1600/3
2.2	1	DN 600 x 6 mm 90 DEGREE MEDIUM RADIUS (2xD) BEND TO SANS 719 GRADE C
2.3	1	DN 600 x 6 mm SPOOL PIECE TO SANS 719 GRADE C



ITEM 2 - ISOMETRIC VIEW

NTS



ITEM 2 - PLAN VIEW

SCALE 1 : 25

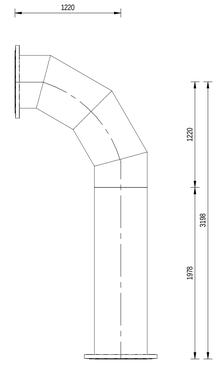
PARTS LIST - ITEM 5

ITEM	QTY	PART DESCRIPTION
5.1	1	DN 600 PN 16 FLANGE SANS 1123 (RF) TABLE 1600/3
5.2	1	DN 600 x 6 mm 90 DEGREE MEDIUM RADIUS (2xD) BEND TO SANS 719 GRADE C
5.3	1	DN 600 x 6 mm SPOOL PIECE TO SANS 719 GRADE C



ITEM 5 - ISOMETRIC VIEW

NTS

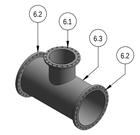


ITEM 5 - SIDE VIEW

SCALE 1 : 25

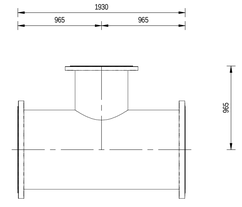
PARTS LIST - ITEM 6

ITEM	QTY	PART DESCRIPTION
6.1	1	DN 600 PN 16 FLANGE SANS 1123 (RF) TABLE 1600/3
6.2	2	DN 600 PN 16 FLANGE SANS 1123 (RF) TABLE 1600/3
6.3	1	DN 900 x 600 x 90 DEGREE EQUAL TEE TO SANS 719 GRADE C



ITEM 6 - ISOMETRIC VIEW

NTS



ITEM 6 - FRONT VIEW

SCALE 1 : 25

CONSULTING ENGINEERS
ZUTARI IMPACT. ENGINEERED.
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ROSEBANK
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TEL: +27 11 214 4500

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17 HARRISON STREET
MARSHALLTOWN
2107

DESIGNED:	L.GWIJI	05.07.23	
DRAWN:	L.GWIJI	05.07.23	
CHECKED:	E.LOTTERING	05.07.23	
APPROVED BY:	R.BARRY	05.07.23	
	SIGNATURE	DATE	
ECSA REG No:	20160835		
CHECKED BY:			
	SIGNATURE	DATE	
ECSA REG No:			

Johannesburg Water

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Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

TEMPORARY PRV OUTLET PIPEWORK
MECHANICAL DETAILS
SHEET 1 OF 1

APPROVAL BY JW DEPOT			SCALE
CHECKED:			AS SHOWN
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
APPROVED BY:			
	SIGNATURE BY:	DATE:	

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	14.07.2023

DRAWING No.

113503 - 3310-DRG-MM-0013 - T0

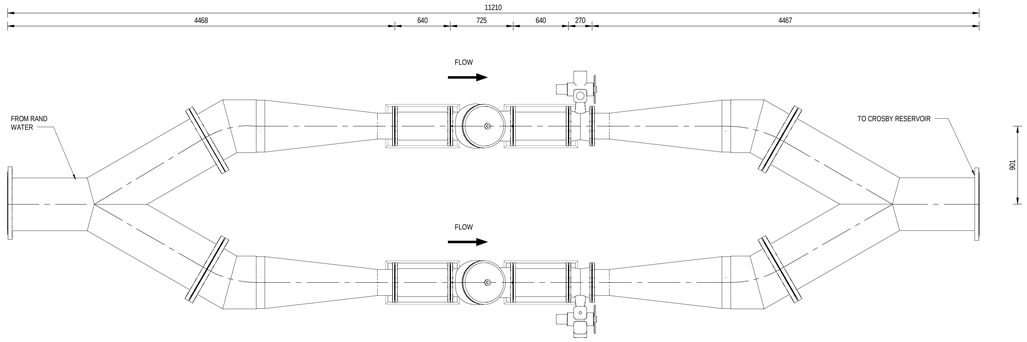
PROJECT No. | DRAWING No. | REV.

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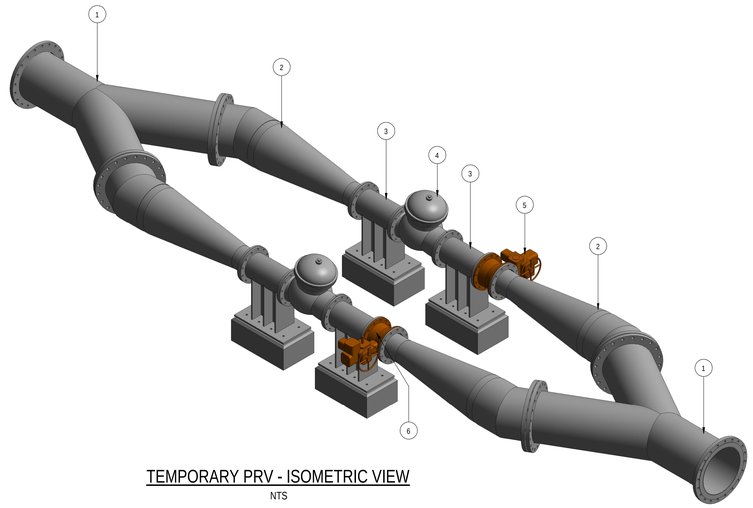
PART LIST - TEMPORARY PRV ASSEMBLY

ITEM	QTY	PART DESCRIPTION
1	2	DN 600 x 600 x 60 DEGREE EQUAL WYE TO SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1123 T1600/3 (RF)
2	4	DN 600 x 300 x 6 mm CONCENTRIC REDUCER (4xD LENTGTH) TO SANS 719 GRADE C WELDED TO A DN 700, 30 DEGREEE MEDIUM RADIUS BEND TO SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1123 T1600/3 (RF)
3	4	DN 300 x 6 mm SPOOL PIECE TO SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1123 T1600/3 (RF)
4	2	DN 300 PN 16 RESSURE REDUCING VALVE, FLANGED TO SANS 1123 TABLE 1600/3 (RF)
5	1	DN 300 PN 16 BUTTERFLY VALVE TO SANS 1849 (RF); RH PROJECTION
6	1	DN 300 PN 16 BUTTERFLY VALVE TO SANS 1849 (RF); LH PROJECTION



TEMPORARY PRV - PLAN VIEW

SCALE 1 : 25



TEMPORARY PRV - ISOMETRIC VIEW

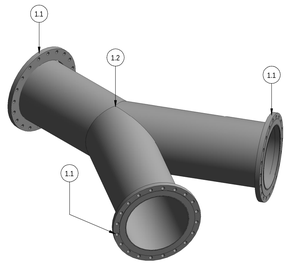
NTS

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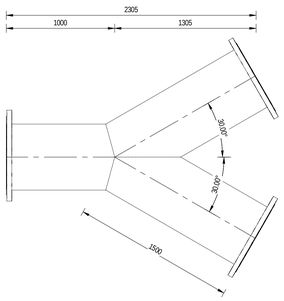
PARTS LIST - ITEM 1

ITEM	QTY	PART DESCRIPTION
1.1	3	DN 600 PN 16 FLANGE SANS 1123 (RF) TABLE 1600/3
1.2	1	DN 600 x 600 x 60 DEGREE EQUAL WYE TO SANS 719 GRADE C



ITEM 1 - ISOMETRIC VIEW

NTS

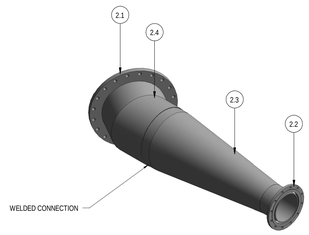


ITEM 1 - PLAN VIEW

SCALE 1 : 20

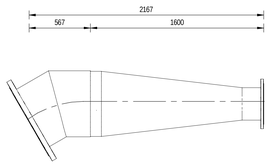
PARTS LIST - ITEM 2

ITEM	QTY	PART DESCRIPTION
2.1	1	DN 600 PN 16 FLANGE SANS 1123 (RF) TABLE 1600/3
2.2	1	DN 300 PN 16 FLANGE SANS 1123 (RF) TABLE 1600/3
2.3	1	DN 600 x 300 x 6 mm CONCENTRIC REDUCER (4xD LENTGTH) TO SANS 719 GRADE C
2.4	1	DN 600 x 6mm 30 DEGREEE MEDIUM RADIUS BEND TO SANS 719 GRADE C



ITEM 2 - ISOMETRIC VIEW

NTS

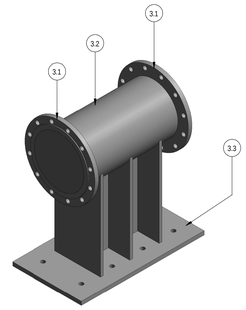


ITEM 2 - PLAN VIEW

SCALE 1 : 20

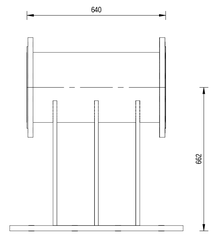
PARTS LIST - ITEM 3

ITEM	QTY	PART DESCRIPTION
3.1	2	DN 300 PN 16 FLANGE SANS 1123 (RF) TABLE 1600/3
3.2	1	DN 300 x 6 mm SPOOL PIECE TO SANS 719 GRADE C
3.3	1	DN 300 PIPE ANCHOR SUPPORT



ITEM 3 - ISOMETRIC VIEW

NTS



ITEM 3 - SIDE VIEW

SCALE 1 : 10

CONSULTING ENGINEERS
ZUTARI IMPACT. ENGINEERED.
32A JELLICOE AVENUE
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17 HARRISON STREET
MARSHALLTOWN
2107

DESIGNED:	L.GWIJI	05.07.23
DRAWN:	L.GWIJI	05.07.23
CHECKED:	E.LOTTERING	05.07.23
APPROVED BY:	R.BARRY	05.07.23
	SIGNATURE	DATE
ECSA REG No:	20160835	
CHECKED BY:		
	SIGNATURE	DATE
ECSA REG No:		

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
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FAX: (011) 688-1529

Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

TEMPORARY PRV SET
MECHANICAL DETAILS
SHEET 1 OF 1

APPROVAL BY JW DEPOT			SCALE
CHECKED:			AS SHOWN
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
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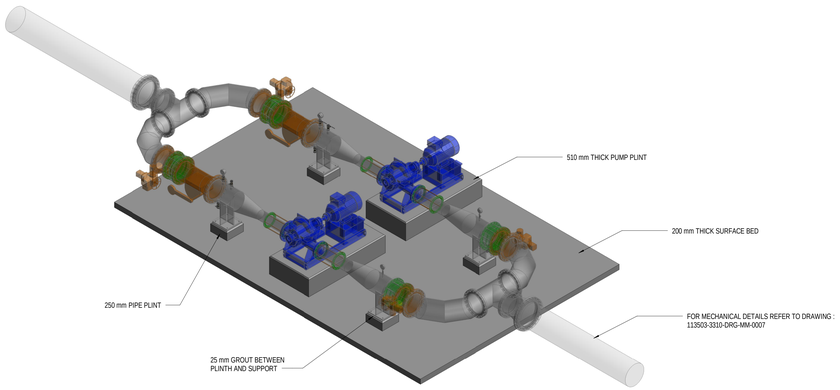
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T0	ISSUED FOR TENDER	05.07.23

DRAWING No.

PROJECT No.		DRAWING No.		REV.
113503	-	3310-DRG-MM-0014	-	T0

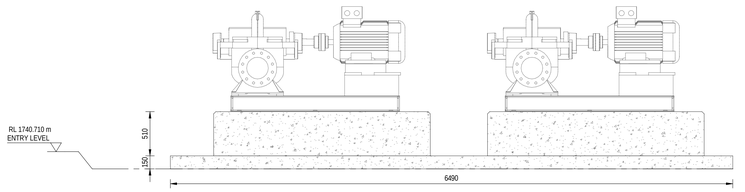
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TEMPORARY BRIXTON PUMPS - ISOMETRIC VIEW

NTS

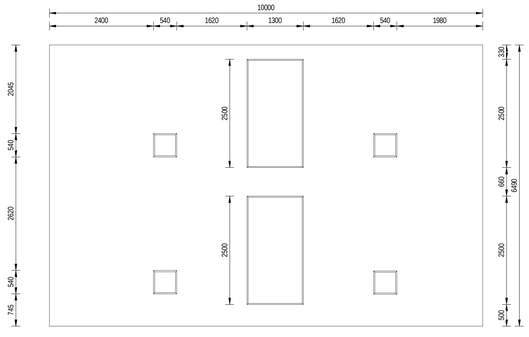


TEMPORARY BRIXTON PUMP SET - SECTION VIEW

SCALE 1 : 25

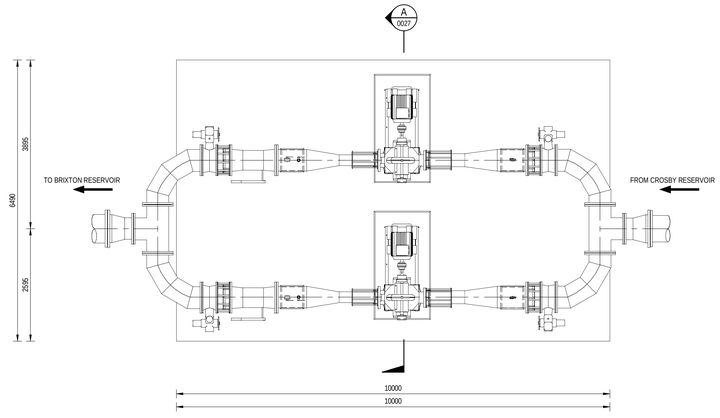
NOTES:

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3. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE GENERAL NOTES DRAWINGS AND ALL PROJECT SPECIFICATIONS.
4. THE CONTRACTOR SHALL SURVEY ALL ABOVE GROUND AND UNDERGROUND PIPES TO CONFIRM THE LEVELS AND SHALL PROVIDE SURVEY INFORMATION TO THE ENGINEER.
5. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN AND SHALL BE CHECKED BY THE CONTRACTOR BEFORE ORDERING ANY MATERIAL ANY DISCREPANCIES MUST BE REPORTED TO ENGINEER.
6. CONCRETE FINISHES SHALL BE AS FOLLOWS, EXCEPT WHERE OTHERWISE SHOWN:
   - SMOOTH SPECIAL TO SURFACES EXPOSED TO VIEW
   - ROUGH TO SURFACES AGAINST WHICH BACKFILL OR FURTHER CONCRETE WILL BE PLACED
   - FLOOR FINISHES INSIDE CHAMBERS AND PULP STATIONS TO BE WOOD FLOATED
7. INSULATION MATERIAL MUST BE PLACED BETWEEN DISSIMILAR METALS.
8. CONCRETE TO BE PLACED ON A 50 mm BLINDING LAYER
9. ALL BURIED SECTIONS OF STEEL PIPE, FLANGES AND BOLTS TO BE COVERED BY VISCO ELASTIC TAPE WITH PVC WRAPPING (STOPAQ OR SIMILAR APPROVED)
10. 28 DAY CONCRETE CUBE COMPRESSIVE STRENGTH
    - BLINDING LAYER: CLASS 15/19 15 MPa
    - FOOTINGS: CLASS 35/19 35 MPa
    - COLUMNS & WALLS: CLASS 35/19 35 MPa
    - SLABS: CLASS 35/19 35 MPa
11. PIPES THROUGH SLAB
    - POLYURETHANE APPLICATION AREA TO BE CLEAN, SOUND, FREE OF LOOSE PARTICLES, DUST, LAITANCE OILS AND OTHER CONTAMINANTS.
    - POLYURETHANE SEALANT TO BE APPLIED AROUND ENTIRE PIPE.
    - APPLICATION PROCEDURE TO BE ACCORDING TO MANUFACTURER SPECIFICATIONS.
12. ALL EXPOSED EXTERNAL EDGES IN CONCRETE WORK SHALL HAVE 20 mm x 20 mm CHAMFERS.
13. THE TOP OF THE CHAMBER NEEDS TO HAVE A SMOOTH FINISH TO ENSURE THE PRECAST COVER SEATS APPROPRIATELY.
14. ALL PIPEWORK IS INDICATIVE AND SHALL NOT BE MANUFACTURED FROM THIS DRAWING THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE PIPEWORK, VALVES AND SPECIALS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE DESIGN ENGINEER FOR APPROVAL BEFORE MANUFACTURING OR FABRICATION COMMENCES. THE DESIGN MUST BE IN ACCORDANCE WITH THE MECHANICAL SPECIFICATION.



PUMP MECHANICALS REMOVED - PLAN VIEW

SCALE 1 : 50



TEMPORARY BRIXTON PUMPS - PLAN VIEW

SCALE 1 : 50

CONSULTING ENGINEERS
ZUTARI IMPACT. ENGINEERED.
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OXFORD CORNER
ROSEBANK
SOUTH AFRICA
TEL: +27 11 214 4500

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17 HARRISON STREET
MARSHALLTOWN
2107

DESIGNED:	L. GWIJI	30.01.24
DRAWN:	N. NXUMALO	30.01.24
CHECKED:	S. MNQONYWA	30.01.24
APPROVED BY:	C. KAN	30.01.24
	SIGNATURE	DATE
ECSA REG No:		
CHECKED BY:		
	SIGNATURE	DATE
ECSA REG No:		

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

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Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

TEMPORARY BRIXTON PUMP
CIVIL ARRANGEMENT
SHEET 1 OF 1

APPROVAL BY JW DEPOT			SCALE
CHECKED:			AS SHOWN
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
APPROVED BY:			
	SIGNATURE BY:	DATE:	

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	30.01.24

DRAWING No.

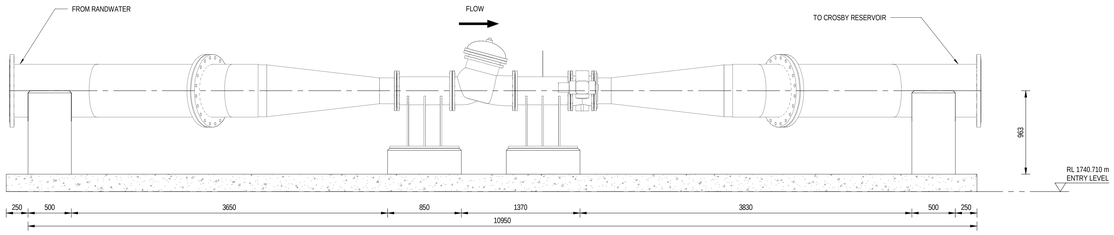
113503 - 3300 - DRG - CC - 0005 - T0

PROJECT No. DRAWING No. REV.

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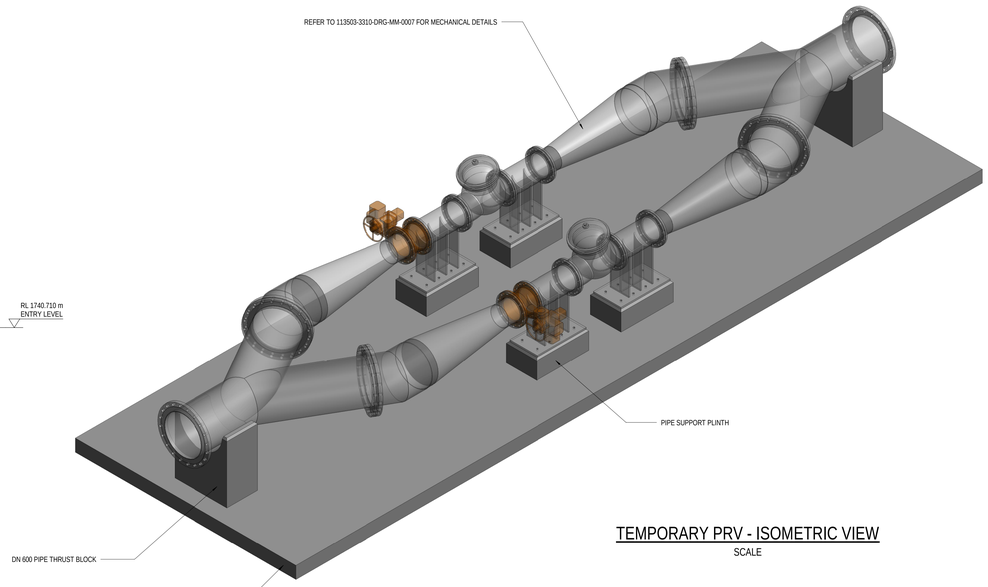
SHEET 1 OF 1

File Name: Bild 3\BUNK1130\0- Brixton Reservoir and Tower Area\4)TEMPORARY_PS_PIPEWORK.rvt
Plot Date: 2024/01/30 13:48:50
Offset: (1)C



TEMPORARY PRV - FRONT VIEW

SCALE 1 : 25

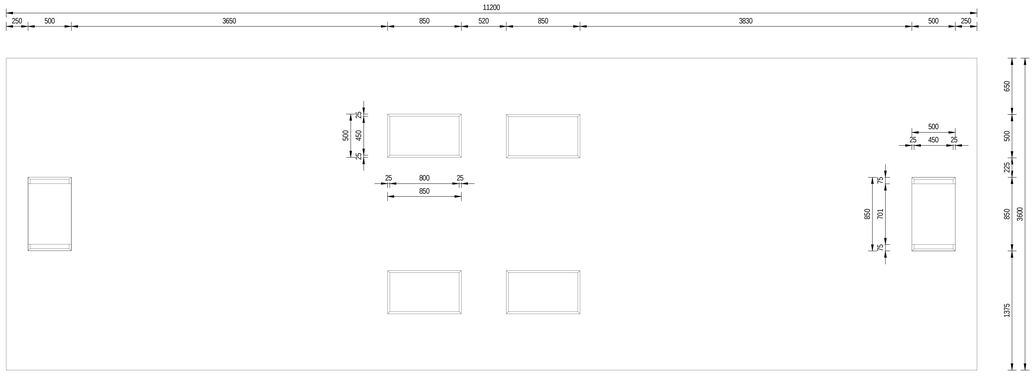


TEMPORARY PRV - ISOMETRIC VIEW

SCALE

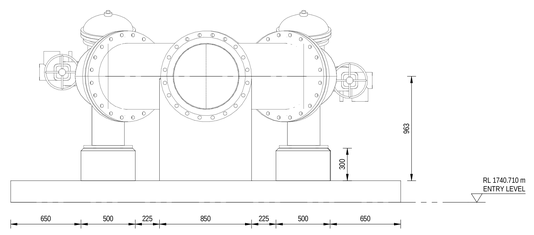
NOTES:

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3. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE GENERAL NOTES DRAWINGS AND ALL PROJECT SPECIFICATIONS.
4. THE CONTRACTOR SHALL SURVEY ALL ABOVE GROUND AND UNDERGROUND PIPES TO CONFIRM THE LEVELS AND SHALL PROVIDE SURVEY INFORMATION TO THE ENGINEER.
5. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN AND SHALL BE CHECKED BY THE CONTRACTOR BEFORE ORDERING ANY MATERIAL ANY DISCREPANCIES MUST BE REPORTED TO ENGINEER.
6. CONCRETE FINISHES SHALL BE AS FOLLOWS, EXCEPT WHERE OTHERWISE SHOWN:
   - SMOOTH SPECIAL TO SURFACES EXPOSED TO VIEW
   - ROUGH TO SURFACES AGAINST WHICH BACKFILL OR FURTHER CONCRETE WILL BE PLACED
   - FLOOR FINISHES INSIDE CHAMBERS AND PULP STATIONS TO BE WOOD FLOATED
7. INSULATION MATERIAL MUST BE PLACED BETWEEN DISSIMILAR METALS.
8. CONCRETE TO BE PLACED ON A 50 mm BUNDING LAYER
9. ALL BURIED SECTIONS OF STEEL PIPE, FLANGES AND BOLTS TO BE COVERED BY VISCO ELASTIC TAPE WITH PVC WRAPPING (STOPAQ OR SIMILAR APPROVED)
10. 28 DAY CONCRETE CUBE COMPRESSIVE STRENGTH
    - BLINDING LAYER: CLASS 15/19 15 MPa
    - FOOTINGS: CLASS 35/19 35 MPa
    - COLUMNS & WALLS: CLASS 35/19 35 MPa
    - SLABS: CLASS 35/19 35 MPa
11. PIPES THROUGH SLAB
    - POLYURETHANE APPLICATION AREA TO BE CLEAN, SOUND, FREE OF LOOSE PARTICLES, DUST, LAITANCE OILS AND OTHER CONTAMINANTS.
    - POLYURETHANE SEALANT TO BE APPLIED AROUND ENTIRE PIPE.
    - APPLICATION PROCEDURE TO BE ACCORDING TO MANUFACTURER SPECIFICATIONS.
12. ALL EXPOSED EXTERNAL EDGES IN CONCRETE WORK SHALL HAVE 20 mm x 20 mm CHAMFERS.
13. THE TOP OF THE CHAMBER NEEDS TO HAVE A SMOOTH FINISH TO ENSURE THE PRECAST COVER SEATS APPROPRIATELY.
14. ALL PIPEWORK IS INDICATIVE AND SHALL NOT BE MANUFACTURED FROM THIS DRAWING THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE PIPEWORK, VALVES AND SPECIALS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE DESIGN ENGINEER FOR APPROVAL BEFORE MANUFACTURING OR FABRICATION COMMENCES. THE DESIGN MUST BE IN ACCORDANCE WITH THE MECHANICAL SPECIFICATION.



TEMPORARY PRV - PLAN VIEW

SCALE 1 : 25



TEMPORARY PRV - SIDE VIEW

SCALE 1 : 20

CONSULTING ENGINEERS
ZUTARI IMPACT. ENGINEERED.
32A JELLICOE AVENUE
OXFORD CORNER
ROSEBANK
SOUTH AFRICA
TEL: +27 11 214 4500

CLIENT
17 HARRISON STREET
MARSHALLTOWN
2107

DESIGNED:	L.GWIJI	30.01.24
DRAWN:	N. NXUMALO	30.01.24
CHECKED:	S.MNQONYWA	30.01.24
APPROVED BY:	C.KAN	30.01.24
	SIGNATURE	DATE
ECSA REG No:	20160835	
CHECKED BY:		
	SIGNATURE	DATE
ECSA REG No:		

Johannesburg Water

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MARSHALLTOWN
2107

TEL: (011) 688-1400

FAX: (011) 688-1529

Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

GENERAL DETAILS
TEMPORARY PRV CIVILS

APPROVAL BY JW DEPOT			SCALE
CHECKED:			AS SHOWN
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
APPROVED BY:			
	SIGNATURE BY:	DATE:	

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	30.01.24

DRAWING No.

113503 - 3300 - DRG - CC - 0006 - T0

PROJECT No. | DRAWING No. | REV.

A0 ORIGINAL PAGE SIZE

SHEET 1 OF 1

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Office: DC
Plot Date: 2024/01/30 14:26:32

GENERAL NOTES

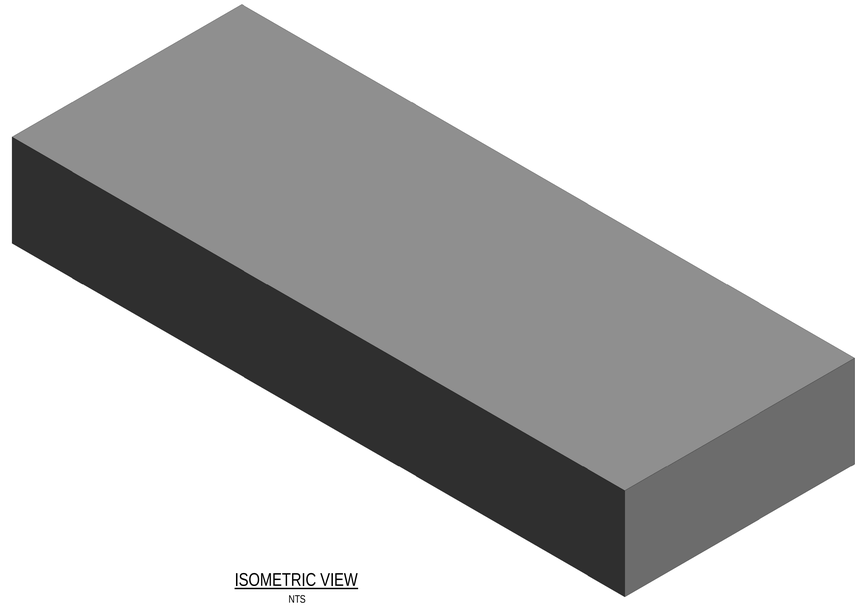
1. DRAWINGS MUST NOT BE SCALED.
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NOTES:

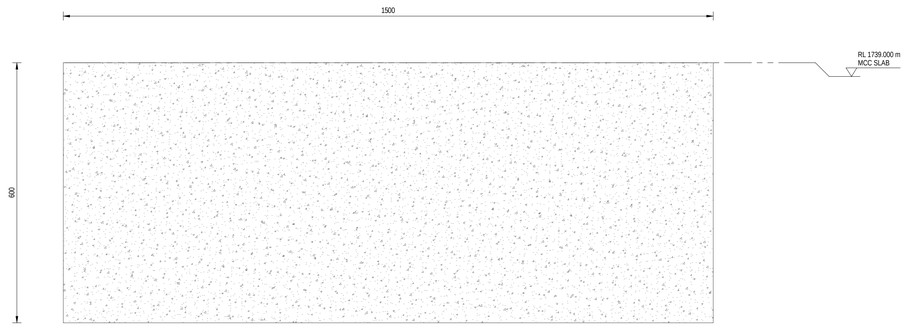
1. ALL PIPEWORK IS INDICATIVE AND SHALL NOT BE MANUFACTURED FROM THIS DRAWING. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE PIPEWORK, VALVES AND SPECIALS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE DESIGN ENGINEER FOR APPROVAL BEFORE MANUFACTURING OR FABRICATION COMMENCES. THE DESIGN MUST BE IN ACCORDANCE WITH THE MECHANICAL SPECIFICATION.
2. THE LEVELS AND DIMENSIONS ARE BASED ON THE TOPOGRAPHIC SURVEY AND AVAILABLE INFORMATION AT THE DESIGN STAGE. THE CONTRACTOR SHALL ENSURE THAT ALL EXISTING SERVICES ARE SURVEYED. IF ANY DISCREPANCIES ARISE OR DESIGN CHANGES ARE REQUIRED, IT MUST IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
3. ALL FLANGES AND FITTINGS BELOW GROUND SHALL BE COVERED WITH A VISCO-ELASTIC COATING (STOPAQ OR SIMILAR APPROVED) AND WRAPPED WITH PVC TAPE.
4. UNLESS OTHERWISE SPECIFIED ALL PIPE SPOOLS WILL BE MILD STEEL PIPES, HOT DIPPED GALVANISED IN ACCORDANCE WITH SANS 121.
5. ALL PIPEWORK, VALVES AND FITTINGS TO BE RATED PN16, ALL FLANGES TO BE ACCORDING TO SANS 1123 TABLE 1600/3 (RF).



PLAN VIEW
SCALE 1 : 10



ISOMETRIC VIEW
NTS



SIDE VIEW
SCALE 1 : 5

CONSULTING ENGINEERS
ZUTARI IMPACT. ENGINEERED.
32A JELLICOE AVENUE
OXFORD CORNER
ROSEBANK
SOUTH AFRICA
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CLIENT
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MARSHALLTOWN
2107

DESIGNED:	L. GWIJI	24.06.23
DRAWN:	L. GWIJI	24.06.23
CHECKED:	S.MQONYWA	24.06.23
APPROVED BY:	C.KAN	24.06.23
	SIGNATURE	DATE
ECSA REG No:	20160835	
CHECKED BY:		
	SIGNATURE	DATE
ECSA REG No:		

Johannesburg Water

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MARSHALLTOWN
2107

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FAX: (011) 688-1529

Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

GENERAL DETAIL
TEMPORARY MCC SLAB

APPROVAL BY JW DEPOT			SCALE
CHECKED:			AS SHOWN
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
APPROVED BY:			
	SIGNATURE BY:	DATE:	

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	21.06.23

DRAWING No.

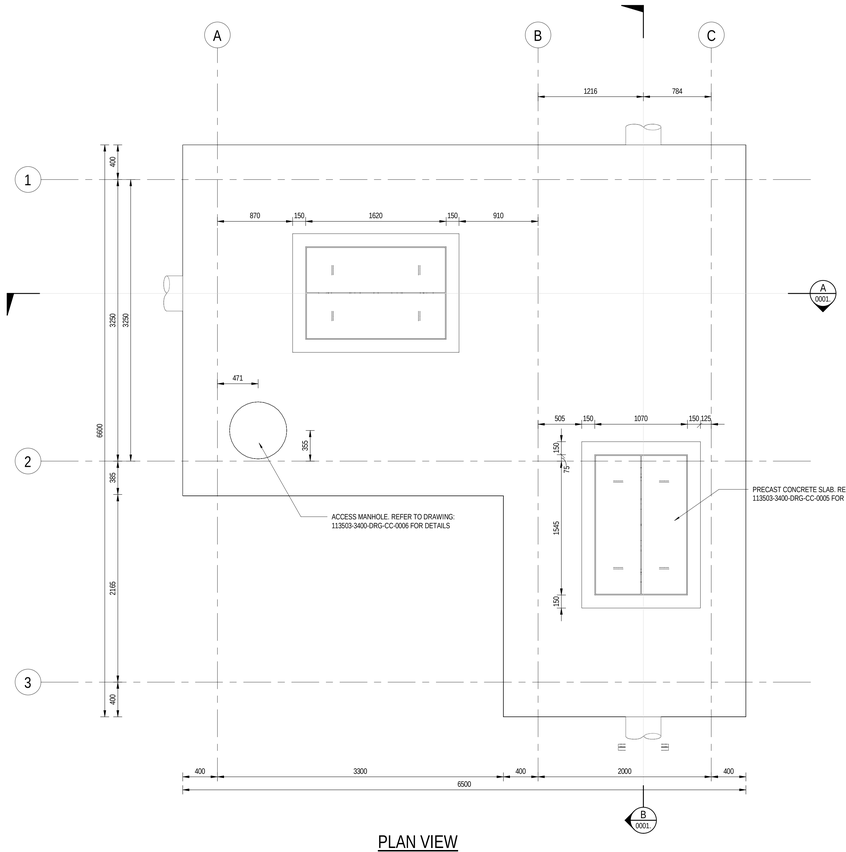
113503 - 3310 - DRG - CC - 0007 - T0

PROJECT No. | DRAWING No. | REV.

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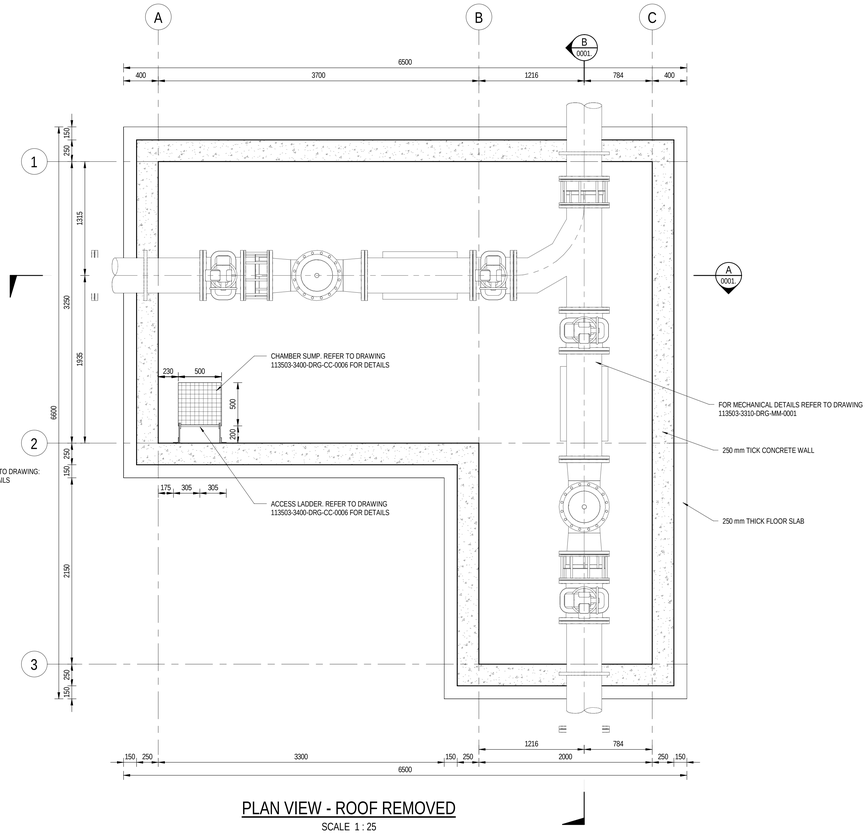
SHEET 1 OF 1

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PLAN VIEW

SCALE 1 : 25

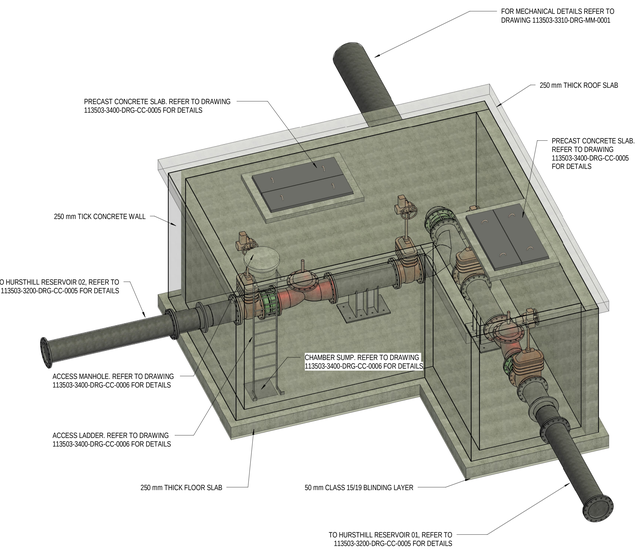


PLAN VIEW - ROOF REMOVED

SCALE 1 : 25

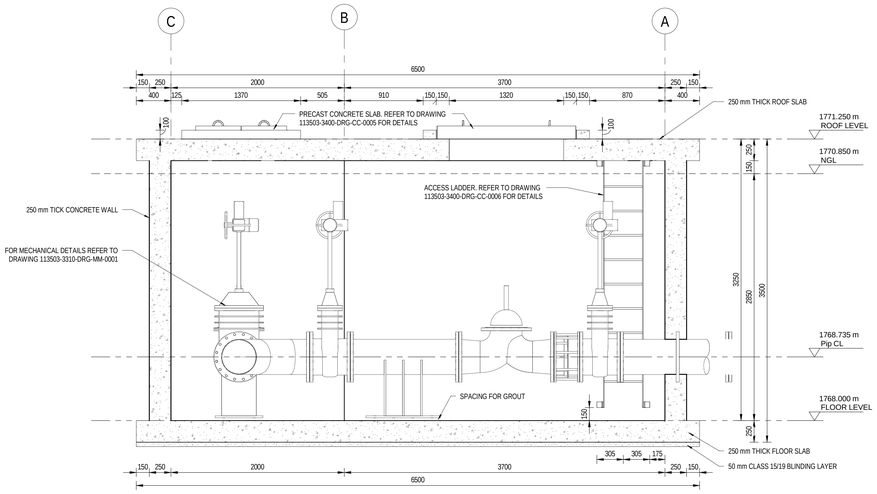
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7. INSULATION MATERIAL MUST BE PLACED BETWEEN DISSIMILAR METALS.
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    - POLYURETHANE SEALANT TO BE APPLIED AROUND ENTIRE PIPE.
    - APPLICATION PROCEDURE TO BE ACCORDING TO MANUFACTURER SPECIFICATIONS.
12. ALL EXPOSED EXTERNAL EDGES IN CONCRETE WORK SHALL HAVE 20 mm x 20 mm CHAMFERS.
13. THE TOP OF THE CHAMBER NEEDS TO HAVE A SMOOTH FINISH TO ENSURE THE PRECAST COVER SEATS APPROPRIATELY.
14. ALL PIPEWORK IS INDICATIVE AND SHALL NOT BE MANUFACTURED FROM THIS DRAWING THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE PIPEWORK, VALVES AND SPECIALS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE DESIGN ENGINEER FOR APPROVAL BEFORE MANUFACTURING OR FABRICATION COMMENCES. THE DESIGN MUST BE IN ACCORDANCE WITH THE MECHANICAL SPECIFICATION.



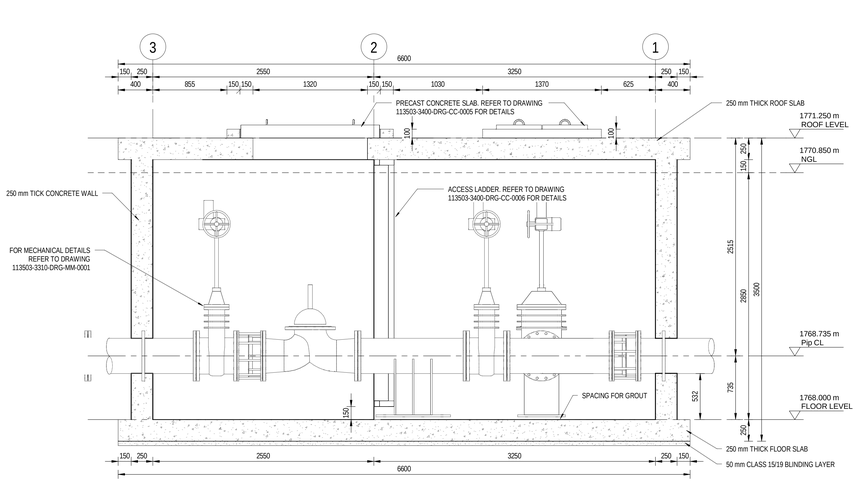
ISOMETRIC

NTS



SECION A

SCALE 1 : 25



SECTION B

SCALE 1 : 25

CONSULTING ENGINEERS ZUTARI IMPACT. ENGINEERED. 32A JELLICOE AVENUE OXFORD CORNER ROSEBANK SOUTH AFRICA TEL: +27 11 214 4500	DESIGNED:	N. NXUMALO	29.01.24	17 HARRISON STREET MARSHALLTOWN 2107 TEL: (011) 688-1400 FAX: (011) 688-1529	PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE CROSBY BULK INFRASTRUCTURE PROJECT HURSTHILL RESERVOIR DISTRIBUTION CHAMBER	APPROVAL BY JW DEPOT			SCALE
	DRAWN:	N. NXUMALO	29.01.24			CHECKED:			AS SHOWN
	CHECKED:	S. MNQONYWA	29.01.24			APPROVED BY:			
	APPROVED BY:	C. KAN	29.01.24				SIGNATURE BY:	DATE:	
		SIGNATURE	DATE			APPROVAL BY JW PLANNING			
	ECSA REG No:					CHECKED:			
CLIENT 17 HARRISON STREET MARSHALLTOWN 2107	CHECKED BY:					APPROVED BY:			
		SIGNATURE	DATE				SIGNATURE BY:	DATE:	
	ECSA REG No:								

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	29.01.24

DRAWING No.

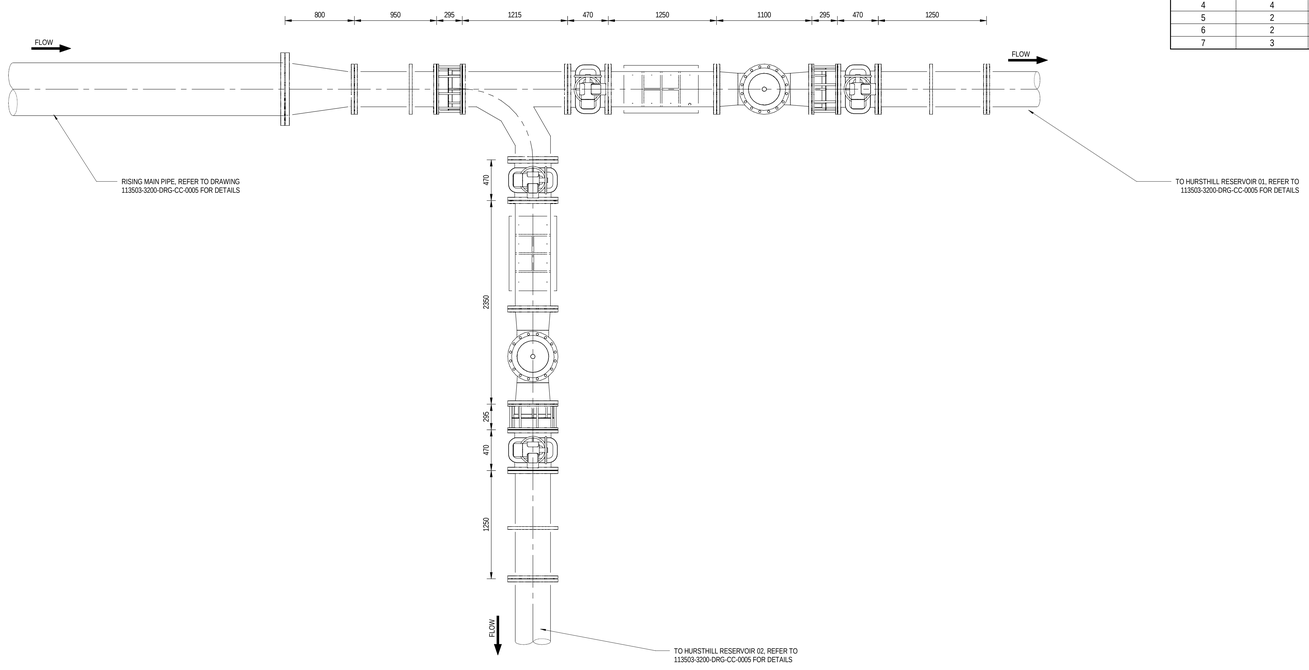
113503 - 3300 - DRG - CC - 0001 - T0

PROJECT No. | DRAWING No. | REV.

A0 ORIGINAL PAGE SIZE | SHEET 1 OF 1

FILE No.

Plot Date: 2024/01/30 10:18:06 Plotted By: CC Filename: BIM 360:/#113503 Boksburg and Tower #3/Acad 113503_3000_ASYRE/BUTTON_CHAMBER.dwt



DISTRIBUTION CHAMBER - PLAN VIEW

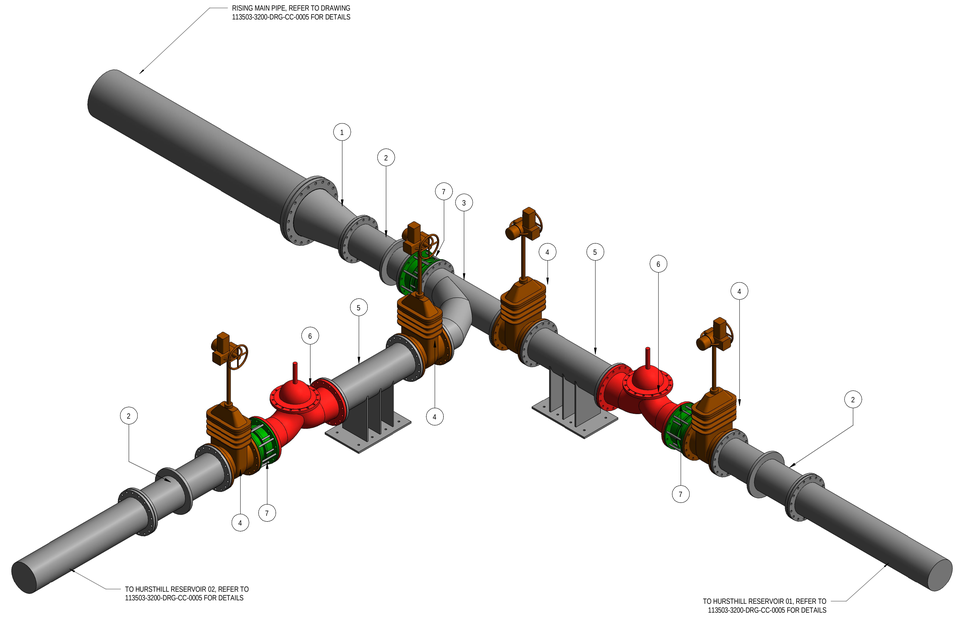
SCALE 1 : 25

DISTRIBUTION CHAMBER - PART LIST

ITEM	QTY	PART DESCRIPTION
1	1	DN600 TO DN400 CONCENTRIC REDUCER 6 mm, SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1600/3 (RF)
2	3	SPOOL PIECE DN400 x 6 mm; SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1600/3 (RF), PUDDLE FLANGE WELDED
3	1	DN400 X DN400 SEGMENTED SWEEPING TEE X 6 mm; SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1600/3 (RF)
4	4	WEDGE GATE VALVE DN400 PN16; SANS 664 NON RISING SPINDLE: FLANGED SANS 1123 TABLE 1600/1 (RF)
5	2	SPOOL PIECE DN400 x 6 mm; SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1600/3 (RF), ANCHOR SUPPORT WELDED
6	2	DN400 PN16 ALTITUDE LEVEL CONTROL VALVE FLANGED BOTH ENDS SANS 1123 TABLE 1600/3 (RF)
7	3	DN400 PN16 DISMANTLING JOINT, FLANGED SANS 1123 TABLE 1600/1 (RF)

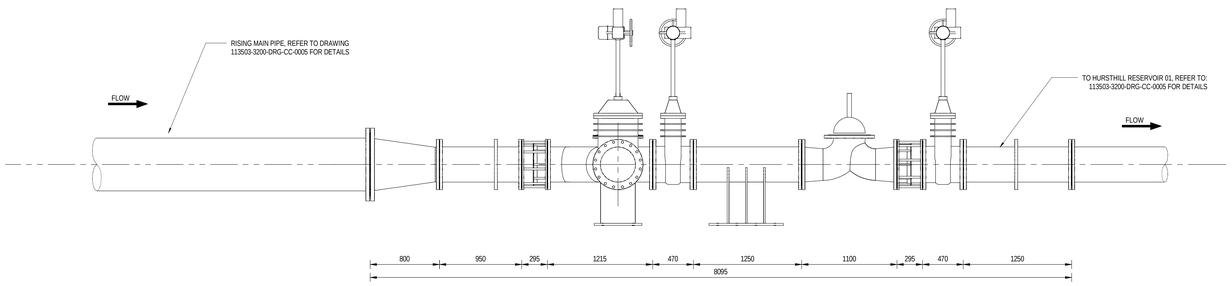
MECHANICAL NOTES:

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4. THE CONTRACTOR SHALL SURVEY ALL ABOVE GROUND AND UNDERGROUND PIPES TO CONFIRM LEVELS AND SHALL PROVIDE SURVEY INFORMATION TO THE ENGINEER.
5. THE CONTRACTOR SHALL MAKE PROVISION FOR FITTINGS TO C&I CONNECTIONS, LOCAL DRAIN POINTS AND QUICK-COUPLING CONNECTION POINTS TO FLUSH THE LINE WITH COMPRESSED AIR.
6. ALL FLANGES AND FITTINGS BELOW GROUND SHALL BE COVERED WITH A VISCO-ELASTIC COATING (STOPAQ OR SIMILAR APPROVED) AND WRAPPED WITH PVC TAPE.
7. THE RESTRAINED FLANGE ADAPTORS AND FLANGES ON THE SUCTION AND DISCHARGE PIPEWORK SHALL MATCH THE PRESSURE CLASS AND DRILLING PATTERN OF THE PUMP SET.
8. ANY DISCREPANCIES BETWEEN THE DRAWINGS, SPECIFICATIONS AND BILL OF QUANTITIES MUST BE REPORTED IMMEDIATELY TO THE ENGINEER.
9. FOR ANCHOR PIPE SUPPORTS REFER TO STANDARD DETAIL DRAWING 113503-3410-DRG-MM-0003.
10. FOR PIPE THRUST SUPPORTS REFER TO STANDARD DETAIL DRAWING 113503-3410-DRG-MM-0005.



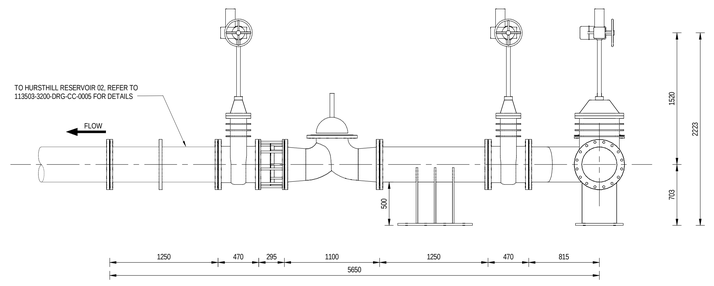
DISTRIBUTION CHAMBER - ISOMETRIC VIEW

NTS



DISTRIBUTION CHAMBER - FRONT VIEW

SCALE 1 : 25



DISTRIBUTION CHAMBER - SIDE VIEW

SCALE 1 : 25

Filename: BM_MO-113503-Bristol Reservoir and Tower Africa\113503_3200_DISTRIBUTION_CHAMBER.rvt
Offset: MM
Plot Date: 2024/01/26 11:26:07

CONSULTING ENGINEERS
ZUTARI IMPACT. ENGINEERED.
32A JELLICOE AVENUE
OXFORD CORNER
ROSEBANK
SOUTH AFRICA
TEL: +27 11 214 4500

CLIENT
17 HARRISON STREET
MARSHALLTOWN
2107

DESIGNED:	J V D LINDE	17.11.22
DRAWN:	L. VAN VELZE	26.01.24
CHECKED:	M. BULBULIA	26.01.24
APPROVED BY:	R. BARRY	26.01.24
	SIGNATURE	DATE
ECSA REG No:		
CHECKED BY:		
	SIGNATURE	DATE
ECSA REG No:		

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

TEL: (011) 688-1400

FAX: (011) 688-1529

Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

HURSTHILL RESERVOIR
DISTRIBUTION CHAMBER MECHANICALS
SHEET 1 OF 2

APPROVAL BY JW DEPOT			SCALE
CHECKED:			AS SHOWN
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
APPROVED BY:			
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AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	26.01.24

DRAWING No.

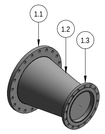
113503 - 3310-DRG-MM-0001.. - T0

PROJECT No. DRAWING No. REV.

A0 ORIGINAL PAGE SIZE

SHEET 1 OF 2

FILE No.



ITEM 1 - ISOMETRIC VIEW

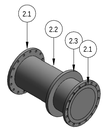
NTS



ITEM 1 - PLAN VIEW

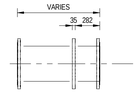
SCALE 1 : 25

PARTS LIST - ITEM 1		
ITEM	QTY	PART DESCRIPTION
1.1	1	DN600 PN16 FLANGE TO SANS 1123 TABLE 1600/3 (RF)
1.2	1	DN400 X DN400 SEGMENTED SWEEPING TEE X 6 m
1.3	1	DN400 PN16 FLANGE TO SANS 1123 TABLE 1600/3 (RF)



ITEM 4 - ISOMETRIC VIEW

NTS



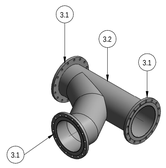
ITEM 4 - PLAN VIEW

SCALE 1 : 25

PARTS LIST - ITEM 4		
ITEM	QTY	PART DESCRIPTION
2.1	2	DN400 PN16 FLANGE TO SANS 1123 TABLE 1600/3 (RF)
2.2	1	SPOOL PIECE DN400 x 6 mm; SANS 719 GRADE C
2.3	1	DN400 PN16 PUDDLE FLANGE

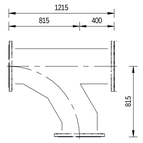
MECHANICAL NOTES:

1. DRAWINGS MUST NOT BE SCALED.
2. ALL PIPEWORK IS INDICATIVE AND SHALL NOT BE MANUFACTURED FROM THIS DRAWING. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE PIPEWORK, VALVES AND SPECIALS. THE CONTRACTOR SHALL SUBMIT DESIGN CALCULATIONS AND SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL BEFORE MANUFACTURING OR FABRICATION COMMENCES. THE DESIGN MUST BE IN ACCORDANCE WITH THE MECHANICAL SPECIFICATION.
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4. THE CONTRACTOR SHALL SURVEY ALL ABOVE GROUND AND UNDERGROUND PIPES TO CONFIRM LEVELS AND SHALL PROVIDE SURVEY INFORMATION TO THE ENGINEER.
5. THE CONTRACTOR SHALL MAKE PROVISION FOR FITTINGS TO C&I CONNECTIONS, LOCAL DRAIN POINTS AND QUICK-COUPLING CONNECTION POINTS TO FLUSH THE LINE WITH COMPRESSED AIR.
6. ALL FLANGES AND FITTINGS BELOW GROUND SHALL BE COVERED WITH A VISCO-ELASTIC COATING (STOPAQ OR SIMILAR APPROVED) AND WRAPPED WITH PVC TAPE.
7. THE RESTRAINED FLANGE ADAPTORS AND FLANGES ON THE SUCTION AND DISCHARGE PIPEWORK SHALL MATCH THE PRESSURE CLASS AND DRILLING PATTERN OF THE PUMP SET.
8. ANY DISCREPANCIES BETWEEN THE DRAWINGS, SPECIFICATIONS AND BILL OF QUANTITIES MUST BE REPORTED IMMEDIATELY TO THE ENGINEER.
9. FOR ANCHOR PIPE SUPPORTS REFER TO STANDARD DETAIL DRAWING 113503-3410-DRG-MM-0003.
10. FOR PIPE THRUST SUPPORTS REFER TO STANDARD DETAIL DRAWING 113503-3410-DRG-MM-0005.



ITEM 3 - ISOMETRIC VIEW

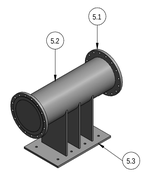
NTS



ITEM 3 - PLAN VIEW

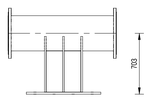
SCALE 1 : 25

PARTS LIST - ITEM 3		
ITEM	QTY	PART DESCRIPTION
3.1	3	DN400 PN16 FLANGE TO SANS 1123 TABLE 1600/3 (RF)
3.2	1	DN400 X DN400 SEGMENTED SWEEPING TEE X 6 m



ITEM 5 - ISOMETRIC VIEW

NTS



ITEM 5 - SIDE VIEW

SCALE 1 : 25

PARTS LIST - ITEM 5		
ITEM	QTY	PART DESCRIPTION
5.1	2	DN400 PN 16 FLANGE TO SANS 1123 TABLE 1600/3 (RF)
5.2	1	DN400 x PN 16 SANS 719; GRADE C SPOOL PIECE.
5.3	1	DN400 STEEL PIPE ANCHOR SUPPORT; REFER TO DRAWING: 113503-3410-DRG-MM-0003

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DESIGNED:	J V D LINDE	17.11.22
DRAWN:	L. VAN VELZE	26.01.24
CHECKED:	M. BULBULIA	26.01.24
APPROVED BY:	R. BARRY	26.01.24
	SIGNATURE	DATE
ECSA REG No:		
CHECKED BY:		
	SIGNATURE	DATE
ECSA REG No:		

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Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

HURSTHILL RESERVOIR
DISTRIBUTION CHAMBER MECHANICALS
SHEET 2 OF 2

APPROVAL BY JW DEPOT			SCALE
CHECKED:			AS SHOWN
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
APPROVED BY:			
	SIGNATURE BY:	DATE:	

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	26.01.24

DRAWING No.

113503 - 3310 - DRG - MM - 0002 - T0

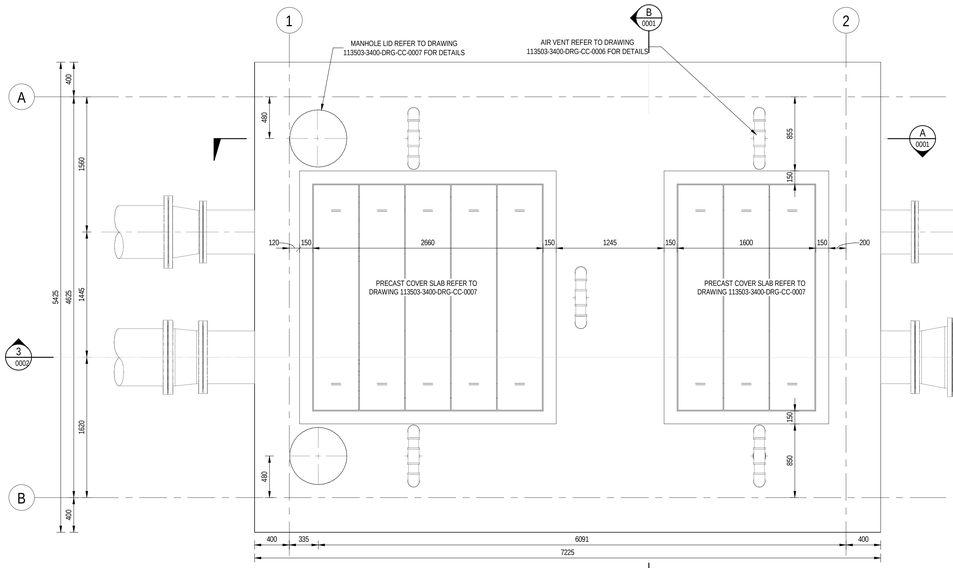
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A0 ORIGINAL PAGE SIZE

SHEET 2 OF 2

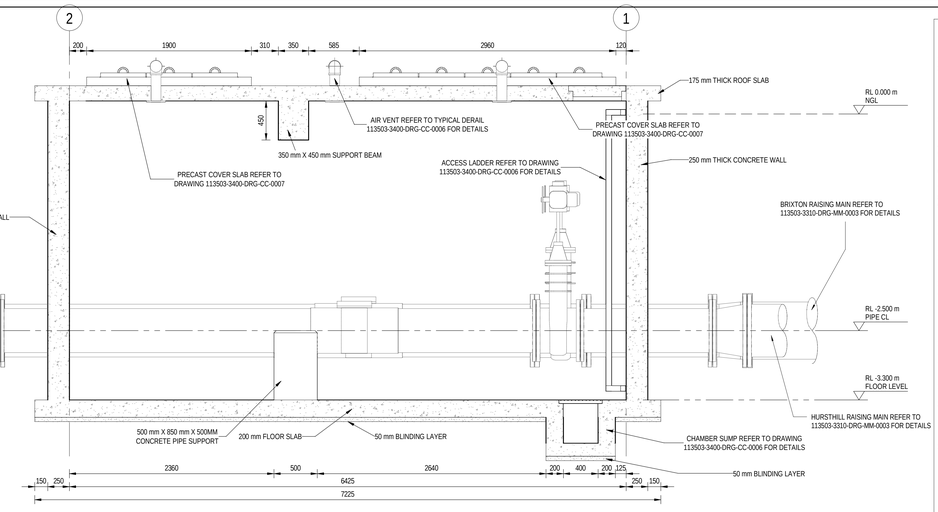
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File Name: BIM 3MUM 113503 Bronon Reservoir and Tower Africa 113503_3400_DRTREBUTION_CHAMVERS.rvt
Office: MM
Plot Date: 2024/01/29 12:00:36



PLAN VIEW

SCALE 1 : 25

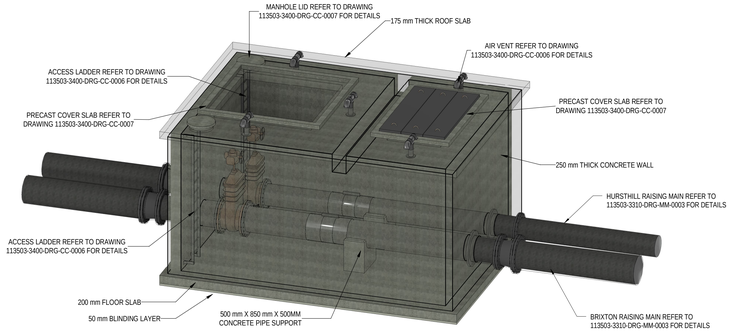


SECTION B

SCALE 1 : 25

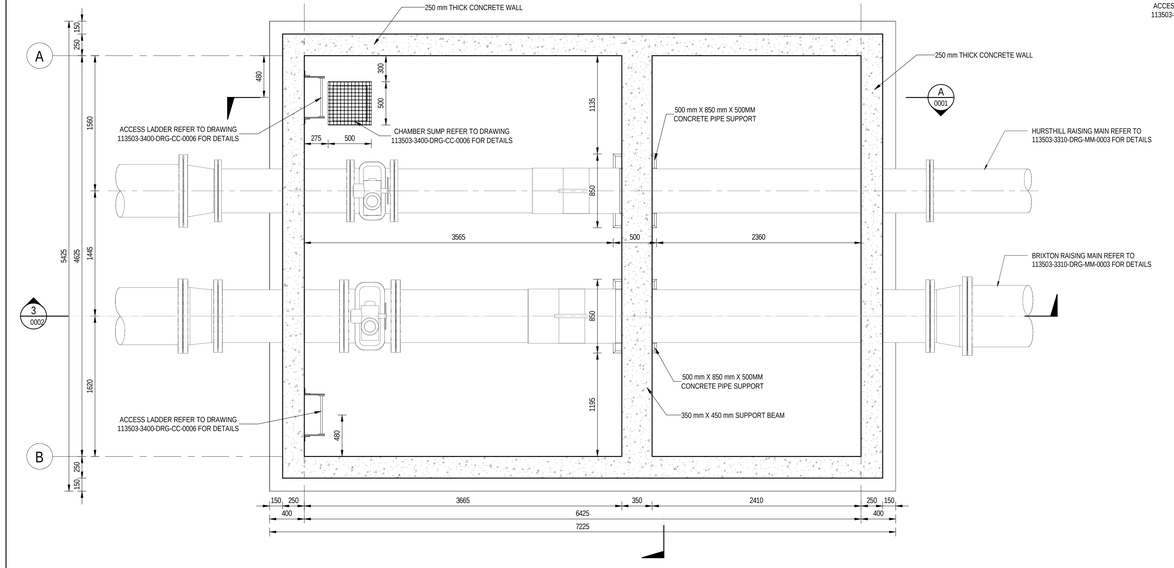
NOTES:

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3. THE CONTRACTOR SHALL SURVEY ALL ABOVE GROUND AND UNDERGROUND PIPES TO CONFIRM THE LEVELS AND SHALL PROVIDE SURVEY INFORMATION TO THE ENGINEER.
4. ALL DIMENSIONS ARE TO BE CONFIRMED BY THE CONTRACTOR ON SITE
5. CORROSION PROTECTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
6. RE-ENFORCEMENT STEEL SHALL BE MINIMUM 50 mm CLEAR OF PUDDLE PIPE AND FLANGES.
7. ALL PLINTHS ARE TO BE CAST AFTER SURFACE BED
8. ALL PLINTHS MUST HAVE A MINIMUM THICKNESS OF 200 mm
9. ALL BOLTS MUST BE AT LEAST 60 mm AWAY FROM THE EDGES AND INSIDE THE REINFORCEMENT
10. ANCHOR BOLTS MUST BE 150 mm DEEP INTO THE PLINTHS
11. ALL STEEL BOLTS, NUTS AND WASHERS SHALL BE GRADE 8.8 HOT DIPPED MILD STEEL, ANCHOR BOLTS TO BE 16 mm
12. FOR MECHANICAL DRAWINGS, REFER TO DRAWING No. 113503-3120-DRG-MM-0001
13. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN AND SHALL BE CHECKED BY THE CONTRACTOR BEFORE ORDERING ANY MATERIAL ANY DISCREPANCIES MUST BE REPORTED TO ENGINEER.
14. ALL LEVELS ARE IN METERS ABOVE SEA LEVEL UNLESS OTHERWISE SHOWN
15. CONCRETE FINISHES SHALL BE AS FOLLOWS, EXCEPT WHERE OTHERWISE SHOWN:
    - SMOOTH SPECIAL TO SURFACES EXPOSED TO VIEW
    - ROUGH TO SURFACES AGAINST WHICH BACKFILL OR FURTHER CONCRETE WILL BE PLACED
    - FLOOR FINISHES INSIDE CHAMBERS AND PULP STATIONS TO BE WOOD FLOATED
16. INSULATION MATERIAL MUST BE PLACED BETWEEN DISSIMILAR METALS.
17. CONCRETE TO BE PLACED ON A 50 mm BLINDING LAYER
18. FOR ISOLATION JOINT, SAWCUT JOINT AND GENERAL STRUCTURAL DETAILS SEE DRAWINGS:
    - 113503-2120-DRG-SS-0005
19. ALL BURIED SECTIONS OF STEEL PIPE, FLANGES AND BOLTS TO BE COVERED BY VISCO ELASTIC TAPE WITH PVC WRAPPING (STOPAQ OR SIMILAR APPROVED)
20. 28 DAY CONCRETE CUBE COMPRESSIVE STRENGTH
    - BLINDING LAYER: CLASS 15/19 15 MPa
    - FOOTINGS: CLASS 35/19 35 MPa
    - COLUMNS & WALLS: CLASS 35/19 35 MPa
    - SLABS: CLASS 35/19 35 MPa
21. PIPES THROUGH SLAB
    - POLYURETHANE APPLICATION AREA TO BE CLEAN, SOUND, FREE OF LOOSE PARTICLES, DUST, LAITANCE OILS AND OTHER CONTAMINANTS.
    - POLYURETHANE SEALANT TO BE APPLIED AROUND ENTIRE PIPE
    - MINIMUM THICKNESS OF REINFORCED CONCRETE TO BE 100mm ON EACH SIDE.
    - APPLICATION PROCEDURE TO BE ACCORDING TO MANUFACTURER SPECIFICATIONS.
22. ALL EXPOSED EXTERNAL EDGES IN CONCRETE WORK SHALL HAVE 20 mm x 20 mm CHAMFERS.
23. FINAL CHAMBER LEVEL TO BE AT LEAST 350 mm ABOVE NGL. CHAMBER HEIGHT TO BE CONFIRMED ON SITE.
24. CHAMBER HEIGHT INDICATED INDICATIVELY. MINIMUM COVER TO TOP OF PIPE TO BE 1000 mm, FINAL COVER SLAB LEVEL TO BE A MINIMUM OF 350 mm ABOVE NGL. FINAL HEIGHT OF CHAMBER TO BE CONFIRMED FROM PIPELINE LONGSECTIONS.
25. THE TOP OF THE CHAMBER NEEDS TO HAVE A SMOOTH FINISH TO ENSURE THE PRECAST COVER SEATS APPROPRIATELY.
26. 2 x 150 mm THICK G7 LAYERS COMPACTED TO 93% MOD AASTHO 1 x 150 mm THICK IN-SITU ROADBED COMPACTED TO 90% MOD AASTHO
27. ALL PIPEWORK IS INDICATIVE AND SHALL NOT BE MANUFACTURED FROM THIS DRAWING THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE PIPEWORK, VALVES AND SPECIALS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE DESIGN ENGINEER FOR APPROVAL BEFORE MANUFACTURING OR FABRICATION COMMENCES. THE DESIGN MUST BE IN ACCORDANCE WITH THE MECHANICAL SPECIFICATION.
28. THE LEVELS AND DIMENSIONS ARE BASED ON THE AVAILABLE INFORMATION AT THE TENDER STAGE THE CONTRACTOR SHALL ENSURE THAT ALL EXISTING SERVICES ARE SURVEYED. IF ANY DISCREPANCIES ARISE OR DESIGN CHANGES ARE REQUIRED, IT MUST IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.



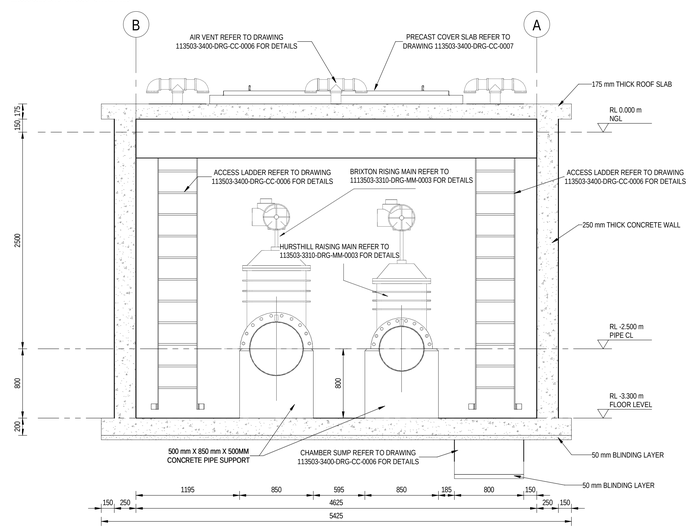
ISOMETRIC

NTS



PLAN VIEW- ROOF REMOVED

SCALE 1 : 25



SECTION A

SCALE 1 : 25

CONSULTING ENGINEERS
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DRAWN:	N. NXUMALO	29.01.2024
CHECKED:	S. MNQONYWA	29.01.2024
APPROVED BY:	C KAN	29.01.2024
	SIGNATURE	DATE
ECSA REG No:		
CHECKED BY:		
	SIGNATURE	DATE
ECSA REG No:		

Johannesburg Water

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Joburg

PERTH EMPIRE CORRIDORS OF FREEDOM WATER UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

CROSBY RISING MAIN
FLOW METER CHAMBER CIVILS

APPROVAL BY JW DEPOT			SCALE
CHECKED:			AS SHOWN
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
APPROVED BY:			
	SIGNATURE BY:	DATE:	

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	29.01.24

DRAWING No.

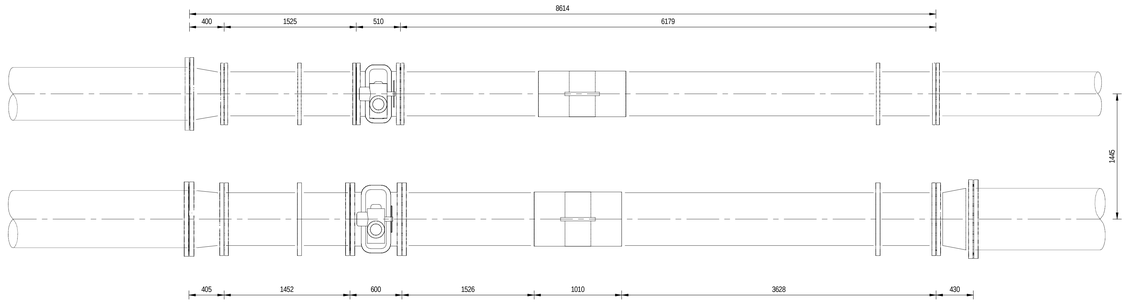
113503 - 3300 - DRG - CC - 0002 - T0

PROJECT No. | DRAWING No. | REV.

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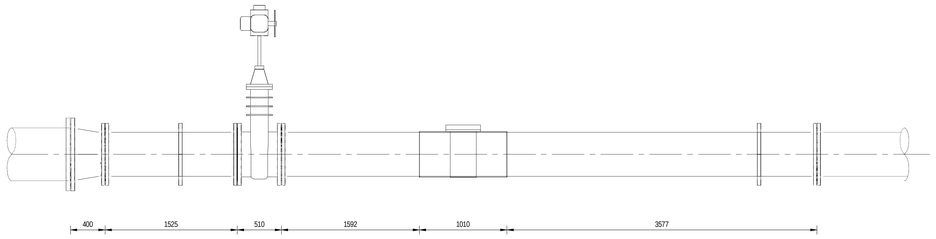
SHEET 1 OF 1

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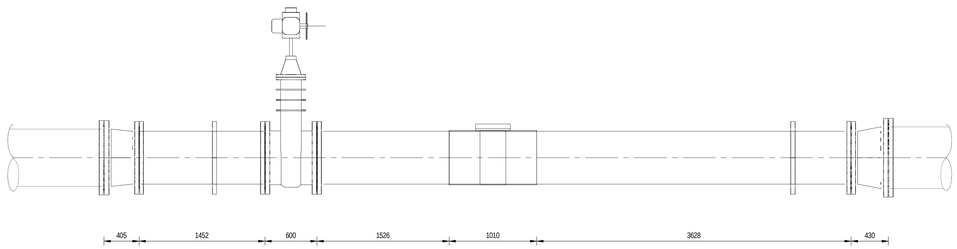
FLOW METER ARRANGEMENT - PLAN VIEW

SCALE 1 : 25



HURSTHILL FLOW METER - SIDE VIEW

SCALE 1 : 25



BIXTON FLOW METER - SIDE VIEW

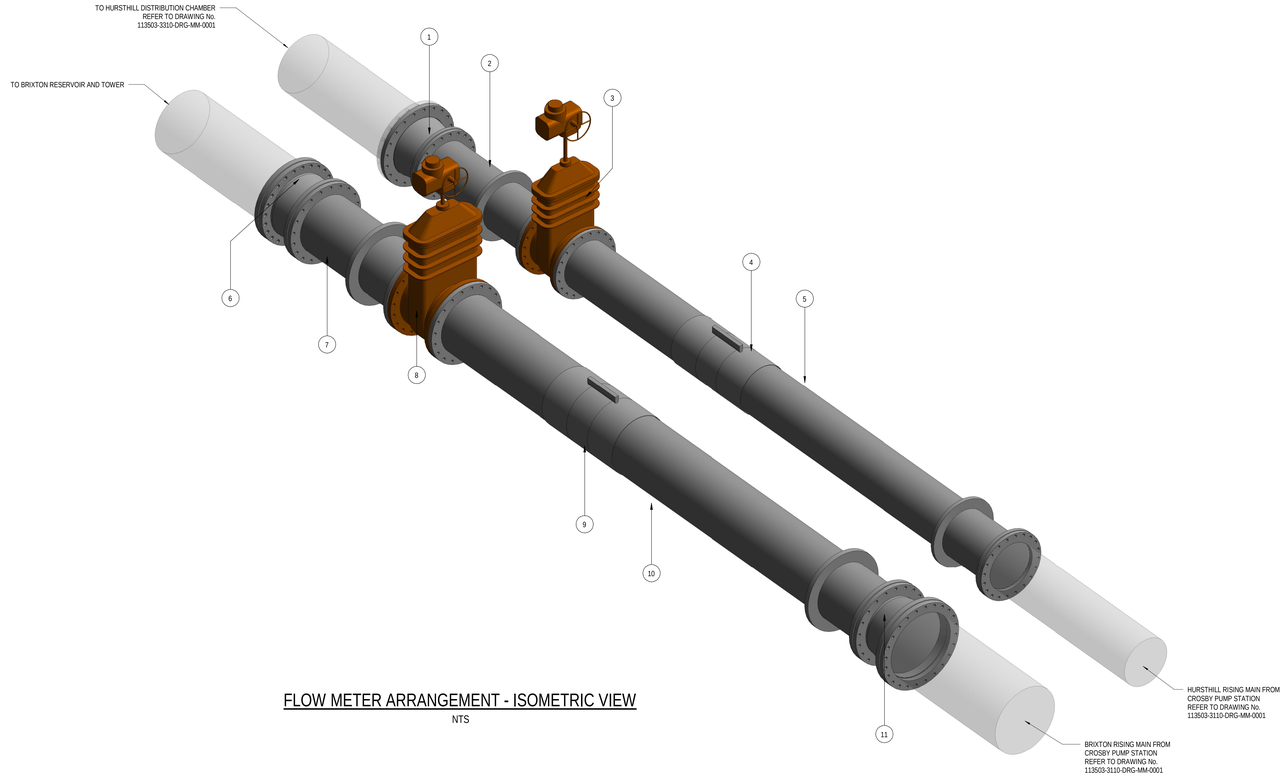
SCALE 1 : 25

PARTS LIST - FLOW METER CHAMBER

ITEM	QTY	PART DESCRIPTION
1	1	DN600 TO DN500 PN16 CONCENTRIC REDUCER 6 mm, SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1600/3 (RF)
2	1	DN500 6mm THICK SANS 719 GRADE C SPOOL PIECE ; FLANGED BOTH ENDS SANS 1123 TABLE 1600/3 (RF); PUDDLE FLANGE WELDED
3	1	DN500 PN16 GATE VALVE (WEDGE) ; SANS 664 NON-RISING SPINDLE - SHORT PATTERN WITH GEARBOX ; FLANGED SANS 1123 TABLE 1600/3 (RF)
4	1	DN500 PN16 ULTRASONIC FLOW METER
5	1	DN500 6mm THICK SANS 719 GRADE C SPOOL PIECE ; FLANGED BOTH ENDS SANS 1123 TABLE 1600/3 (RF); PUDDLE FLANGE WELDED
6	1	DN600 TO DN650 PN16 CONCENTRIC REDUCER 6 mm, SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1600/3 (RF)
7	1	DN600 6mm THICK SANS 719 GRADE C SPOOL PIECE ; FLANGED BOTH ENDS SANS 1123 TABLE 1600/3 (RF); PUDDLE FLANGE WELDED
8	1	DN600 PN16 GATE VALVE (WEDGE) ; SANS 664 NON-RISING SPINDLE - SHORT PATTERN WITH GEARBOX ; FLANGED SANS 1123 TABLE 1600/3 (RF)
9	1	DN600 PN16 ULTRASONIC FLOW METER
10	1	DN600 6mm THICK SANS 719 GRADE C SPOOL PIECE ; FLANGED BOTH ENDS SANS 1123 TABLE 1600/3 (RF); PUDDLE FLANGE WELDED
11	1	DN700 TO DN600 PN16 CONCENTRIC REDUCER 6 mm, SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1600/3 (RF)

MECHANICAL NOTES:

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5. THE CONTRACTOR SHALL MAKE PROVISION FOR FITTINGS TO C&I CONNECTIONS, LOCAL DRAIN POINS AND QUICK-COUPLING CONNECTION POINTS TO FLUSH THE LINE WITH COMPRESSED AIR.
6. ALL FLANGES AND FITTINGS BELOW GROUND SHALL BE COVERED WITH A VISCO-ELASTIC COATING (STOPAQ OR SIMILAR APPROVED) AND WRAPPED WITH PVC TAPE.
7. THE RESTRAINED FLANGE ADAPTORS AND FLANGES ON THE SUCTION AND DISCHARGE PIPEWORK SHALL MATCH THE PRESSURE CLASS AND DRILLING PATTERN OF THE PUMP SET.
8. ANY DISCREPANCIES BETWEEN THE DRAWINGS, SPECIFICATIONS AND BILL OF QUANTITIES MUST BE REPORTED IMMEDIATELY TO THE ENGINEER.
9. FOR ANCHOR PIPE SUPPORTS REFER TO STANDARD DETAIL DRAWING 113503-3410-DRG-MM-0003.
10. FOR PIPE THRUST SUPPORTS REFER TO STANDARD DETAIL DRAWING 113503-3410-DRG-MM-0005.



FLOW METER ARRANGEMENT - ISOMETRIC VIEW

NTS

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17 HARRISON STREET
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DESIGNED:	J V D LINDE	17.11.2022	
DRAWN:	L. GWIJI	26.01.24	
CHECKED:	S. CHETTY	26.01.24	
APPROVED BY:	R. BARRY	26.01.24	
	SIGNATURE	DATE	
ECSA REG No:			
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	SIGNATURE	DATE	
ECSA REG No:			

Johannesburg Water

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PERTH EMPIRE CORRIDORS OF FREEDOM WATER UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

CROSBY RISING MAIN
FLOW METER CHAMBER MECHANICALS
SHEET 1 OF 2

APPROVAL BY JW DEPOT			SCALE
CHECKED:			AS SHOWN
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
APPROVED BY:			
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AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	26.01.24

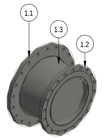
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113503 - 3310 - DRG - MM - 0003 - T0

PROJECT No. | DRAWING No. | REV.

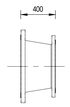
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ITEM 1 - ISOMETRIC VIEW

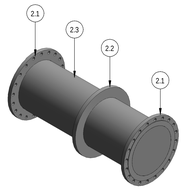
NTS



ITEM 1 - SIDE VIEW

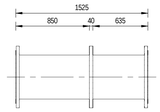
SCALE 1 : 25

PARTS LIST - ITEM 1		
ITEM	QTY	PART DESCRIPTION
1.1	1	DN600 FLANGE SANS 1123 TABLE 1600/3 (RF)
1.2	1	DN600 X 500 PN16 CONCENTRIC REDUCER 6mm, SANS 719 GRADE
1.3	1	DN500 FLANGE SANS 1123 TABLE 1600/3 (RF)



ITEM 2 - ISOMETRIC VIEW

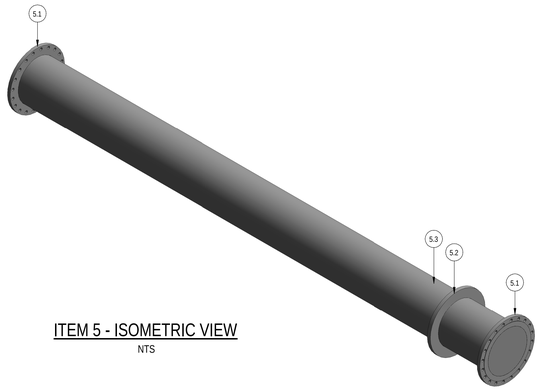
NTS



ITEM 2 - SIDE VIEW

SCALE 1 : 25

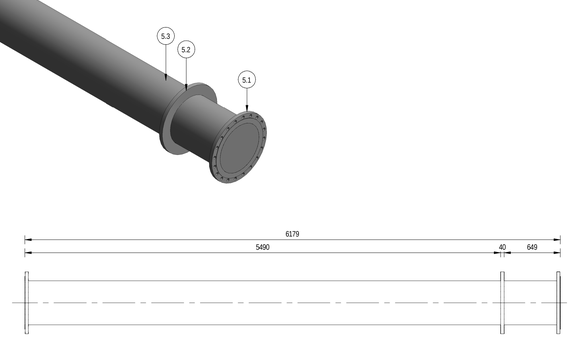
PARTS LIST - ITEM 2		
ITEM	QTY	PART DESCRIPTION
2.1	2	DN500 FLANGE TO SANS 1123 TABLE 1600/3 (RF)
2.2	1	DN500 PUDDLE FLANGE
2.3	1	DN500 SPOOL PIECE SANS 719 PN 16;GRADE C;FLANGED BOTH ENDS TO SANS 1123 1600/3 (RF)



ITEM 5 - ISOMETRIC VIEW

NTS

PARTS LIST - ITEM 5		
ITEM	QTY	PART DESCRIPTION
5.1	2	DN500 FLANGE TO SANS 1123 TABLE 1600/3 (RF)
5.2	1	DN500 PUDDLE FLANGE
5.3	1	DN 500 SPOOL PIECE SANS 719;GRADE C;FLANGED BOTH ENDS TO SANS 1123 1600/3 (RF)



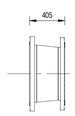
ITEM 5 SIDE VIEW

SCALE 1 : 25



ITEM 6 - ISOMETRIC VIEW

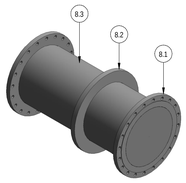
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ITEM 6 - SIDE VIEW

SCALE 1 : 25

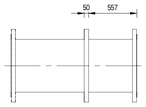
PARTS LIST - ITEM 6		
ITEM	QTY	PART DESCRIPTION
6.1	1	DN 650 FLANGE TO SANS 1123 TABLE 1600/3 (RF)
6.2	1	DN650 TO DN600 PN16 CONCENTRIC REDUCER 6mm, SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1600/3 (RF)
6.3	1	DN 600 FLANGE TO SANS 1123 TABLE 1600/3 (RF)



ITEM 8 - ISOMETRIC VIEW

NTS

PARTS LIST - ITEM 8		
ITEM	QTY	PART DESCRIPTION
8.1	1	DN 600 FLANGE TO SANS 1123 TABLE 1600/3 (RF)
8.2	1	DN600 PUDDLE FLANGE
8.3	1	DN 500 SPOOL PIECE SANS 719;GRADE C;FLANGED BOTH ENDS TO SANS 1123 1600/3 (RF)

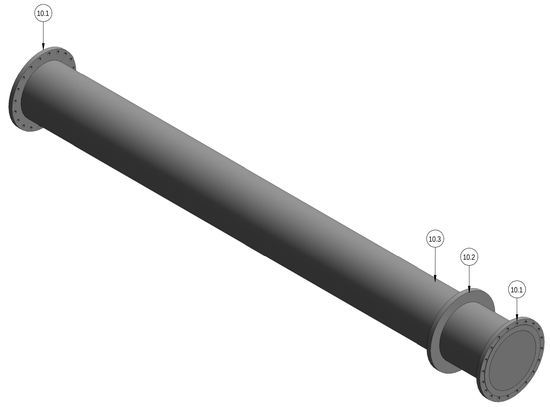


ITEM 8 - SIDE VIEW

SCALE 1 : 25

MECHANICAL NOTES:

1. DRAWINGS MUST NOT BE SCALED.
2. ALL PIPEWORK IS INDICATIVE AND SHALL NOT BE MANUFACTURED FROM THIS DRAWING. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE PIPEWORK, VALVES AND SPECIALS. THE CONTRACTOR SHALL SUBMIT DESIGN CALCULATIONS AND SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL BEFOR MANUFACTURING OR FABRICATION COMMENCES. THE DESIGN MUST BE IN ACCORDANCE WITH THE MECHANICAL SPECIFICATION.
3. ACCORDING TO THE COPYRIGHT ACT (ACT No 98 OF 1978) NO PART OF THIS DOCUMENT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WHATSOEVER INCLUDING MECHANICAL, ELECTRONIC, PHOTOCOPYING, MICROFILMING OR ANY OTHER SYSTEM OF INFORMATION STORAGE WITHOUT WRITTEN PERMISSION OF ZUTARI.
4. THE CONTRACTOR SHALL SURVEY ALL ABOVE GROUND AND UNDERGROUND PIPES TO CONFIRM LEVELS AND SHALL PROVIDE SURVEY INFORMATION TO THE ENGINEER.
5. THE CONTRACTOR SHALL MAKE PROVISION FOR FITTINGS TO C&I CONNECTIONS, LOCAL DRAIN POINS AND QUICK-COUPLING CONNECTION POINTS TO FLUSH THE LINE WITH COMPRESSED AIR.
6. ALL FLANGES AND FITTINGS BELOW GROUND SHALL BE COVERED WITH A VISCO-ELASTIC COATING (STOPAQ OR SIMILAR APPROVED) AND WRAPPED WITH PVC TAPE.
7. THE RESTRAINED FLANGE ADAPTORS AND FLANGES ON THE SUCTION AND DISCHARGE PIPEWORK SHALL MATCH THE PRESSURE CLASS AND DRILLING PATTERN OF THE PUMP SET.
8. ANY DISCREPANCIES BETWEEN THE DRAWINGS, SPECIFICATIONS AND BILL OF QUANTITIES MUST BE REPORTED IMMEDIATELY TO THE ENGINEER.
9. FOR ANCHOR PIPE SUPPORTS REFER TO STANDARD DETAIL DRAWING 113503-3410-DRG-MM-0003.
10. FOR PIPE THRUST SUPPORTS REFER TO STANDARD DETAIL DRAWING 113503-3410-DRG-MM-0005.



ITEM 10 - ISOMETRIC VIEW

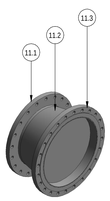
NTS

PARTS LIST - ITEM 10		
ITEM	QTY	PART DESCRIPTION
10.1	2	DN 600 FLANGE TO SANS 1123 TABLE 1600/3 (RF)
10.2	1	DN500 PUDDLE FLANGE
10.3	1	DN600 SPOOL PIECE SANS 719 PN 16;GRADE C;FLANGED BOTH ENDS TO SANS 1123 1600/3 (RF)



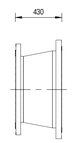
ITEM 10 - SIDE VIEW

SCALE 1 : 25



ITEM 11 - ISOMETRIC VIEW

NTS



ITEM 11 - SIDE VIEW

SCALE 1 : 20

PARTS LIST - ITEM 11		
ITEM	QTY	PART DESCRIPTION
11.1	1	DN 600 FLANGE TO SANS 1123 TABLE 1600/3 (RF)
11.2	1	DN700 X 600 CONCENTRIC REDUCER 6mm, SANS 719 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1600/3 (RF)
11.3	1	DN 700 FLANGE TO SANS 1123 TABLE 1600/3 (RF)

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Offset: MM
Plot Date: 2024/01/26 11:57:20

CONSULTING ENGINEERS

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2107

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DRAWN:	L. GWIJI		30.10.23
CHECKED:	S. CHETTY		01.11.23
APPROVED BY:	R. BARRY		01.11.23
	SIGNATURE		DATE
ECSA REG No:			
CHECKED BY:			
	SIGNATURE		DATE
ECSA REG No:			

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PERTH EMPIRE CORRIDORS OF FREEDOM WATER UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

CROSBY RISING MAIN
FLOW METER CHAMBER MECHANICALS
SHEET 2 OF 2

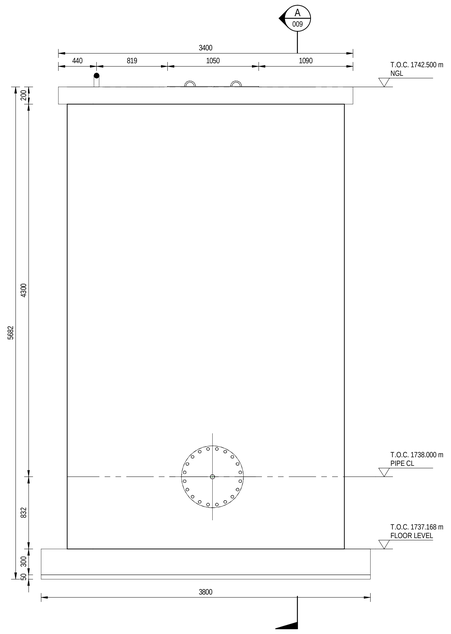
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APPROVED BY:			
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APPROVAL BY JW PLANNING			
CHECKED:			
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AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	26.01.24

DRAWING No.

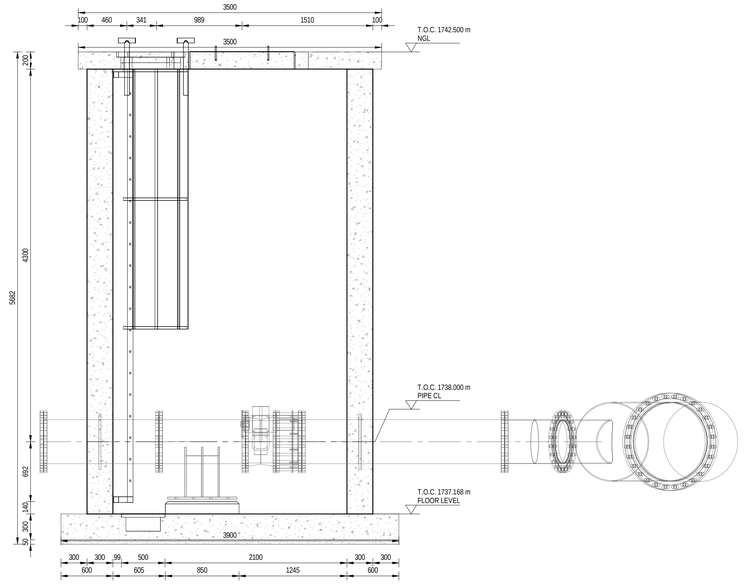
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113503	-	3310 - DRG - MM - 0004	-	T0

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SIDE VIEW - PIPE OUTLET

SCALE 1 : 25

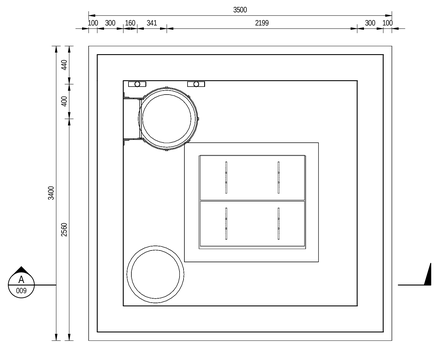


SECTION A

SCALE 1 : 25

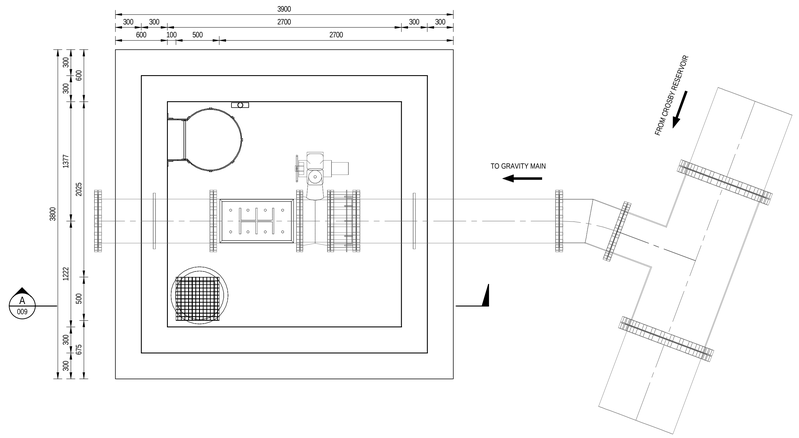
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4. ALL DIMENSIONS ARE TO BE CONFIRMED BY THE CONTRACTOR ON SITE
5. CORROSION PROTECTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
6. RE-ENFORCEMENT STEEL SHALL BE MINIMUM 50 mm CLEAR OF PUDDLE PIPE AND FLANGES.
7. ALL PLINTHS ARE TO BE CAST AFTER SURFACE BED
8. ALL PLINTHS MUST HAVE A MINIMUM THICKNESS OF 200 mm
9. ALL BOLTS MUST BE AT LEAST 60 mm AWAY FROM THE EDGES AND INSIDE THE REINFORCEMENT
10. ANCHOR BOLTS MUST BE 150 mm DEEP INTO THE PLINTHS
11. ALL STEEL BOLTS, NUTS AND WASHERS SHALL BE GRADE 8.8 HOT DIPPED MILD STEEL. ANCHOR BOLTS TO BE 16 mm
12. FOR MECHANICAL DRAWINGS, REFER TO DRAWING No. 113503-3120-DRG-MM-0001
13. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN AND SHALL BE CHECKED BY THE CONTRACTOR BEFORE ORDERING ANY MATERIAL ANY DISCREPANCIES MUST BE REPORTED TO ENGINEER.
14. ALL LEVELS ARE IN METERS ABOVE SEA LEVEL UNLESS OTHERWISE SHOWN
15. CONCRETE FINISHES SHALL BE AS FOLLOWS. EXCEPT WHERE OTHERWISE SHOWN:
    - SMOOTH SPECIAL TO SURFACES EXPOSED TO VIEW
    - ROUGH TO SURFACES AGAINST WHICH BACKFILL OR FURTHER CONCRETE WILL BE PLACED
    - FLOOR FINISHES INSIDE CHAMBERS AND PULP STATIONS TO BE WOOD FLOATED
16. INSULATION MATERIAL MUST BE PLACED BETWEEN DISSIMILAR METALS.
17. CONCRETE TO BE PLACED ON A 50 mm BLINDING LAYER
18. FOR ISOLATION JOINT, SAWCUT JOINT AND GENERAL STRUCTURAL DETAILS SEE DRAWINGS:
    - 113503-2120-DRG-SS-0005
19. ALL BURIED SECTIONS OF STEEL PIPE, FLANGES AND BOLTS TO BE COVERED BY VISCO ELASTIC TAPE WITH PVC WRAPPING (STOPAQ OR SIMILAR APPROVED)
20. 28 DAY CONCRETE CUBE COMPRESSIVE STRENGTH
    - BLINDING LAYER: CLASS 15/19 15 MPa
    - FOOTINGS: CLASS 35/19 35 MPa
    - COLUMNS & WALLS: CLASS 35/19 35 MPa
    - SLABS: CLASS 35/19 35 MPa
21. PIPES THROUGH SLAB
    - POLYURETHANE APPLICATION AREA TO BE CLEAN, SOUND, FREE OF LOOSE PARTICLES, DUST, LAITANCE OILS AND OTHER CONTAMINANTS.
    - POLYURETHANE SEALANT TO BE APPLIED AROUND ENTIRE PIPE.
    - MINIMUM THICKNESS OF REINFORCED CONCRETE TO BE 100mm ON EACH SIDE.
    - APPLICATION PROCEDURE TO BE ACCORDING TO MANUFACTURER SPECIFICATIONS.
22. ALL EXPOSED EXTERNAL EDGES IN CONCRETE WORK SHALL HAVE 20 mm x 20 mm CHAMFERS.
23. FINAL CHAMBER LEVEL TO BE AT LEAST 350 mm ABOVE NGL. CHAMBER HEIGHT TO BE CONFIRMED ON SITE.
24. CHAMBER HEIGHT INDICATED INDICATIVELY. MINIMUM COVER TO TOP OF PIPE TO BE 1000 mm. FINAL COVER SLAB LEVEL TO BE A MINIMUM OF 350 mm ABOVE NGL. FINAL HEIGHT OF CHAMBER TO BE CONFIRMED FROM PIPELINE LONGSECTIONS.
25. THE TOP OF THE CHAMBER NEEDS TO HAVE A SMOOTH FINISH TO ENSURE THE PRECAST COVER SEATS APPROPRIATELY.
26. 2 x 150 mm THICK G7 LAYERS COMPACTED TO 93% MOD AASTHO 1 x 150 mm THICK IN-SITU ROADBED COMPACTED TO 90% MOD AASTHO
27. ALL PIPEWORK IS INDICATIVE AND SHALL NOT BE MANUFACTURED FROM THIS DRAWING THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE PIPEWORK, VALVES AND SPECIALS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE DESIGN ENGINEER FOR APPROVAL BEFORE MANUFACTURING OR FABRICATION COMMENCES. THE DESIGN MUST BE IN ACCORDANCE WITH THE MECHANICAL SPECIFICATION.
28. THE LEVELS AND DIMENSIONS ARE BASED ON THE AVAILABLE INFORMATION AT THE TENDER STAGE THE CONTRACTOR SHALL ENSURE THAT ALL EXISTING SERVICES ARE SURVEYED. IF ANY DISCREPANCIES ARISE OR DESIGN CHANGES ARE REQUIRED, IT MUST IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.



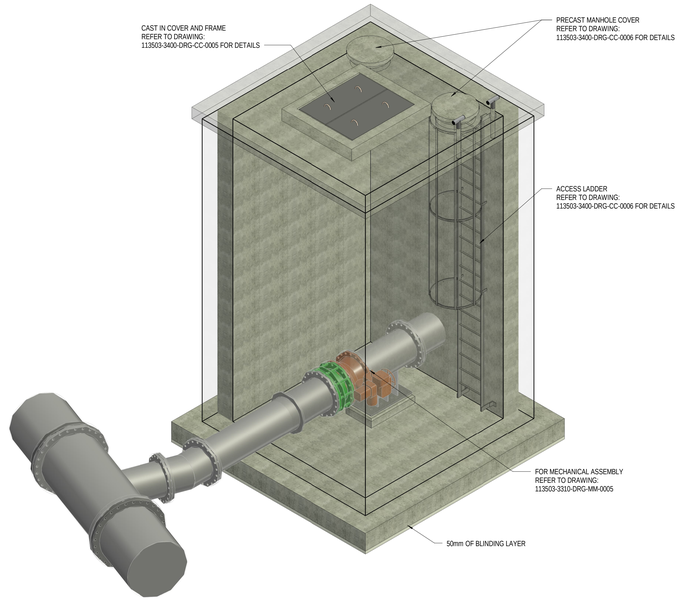
ISOLATION VALVE CHAMBER PLAN VIEW

SCALE 1 : 25



ISOLATION VALVE CHAMBER PLAN VIEW - ROOF REMOVED

SCALE 1 : 25



ISOMETRIC VIEW

NTS

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CHECKED:	S.MNQONYWA	29.01.2024
APPROVED BY:	C.KAN	30.04.2023
	SIGNATURE	DATE
ECSA REG No:		
CHECKED BY:		
	SIGNATURE	DATE
ECSA REG No:		

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Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

GENERAL DETAILS
ISOLATION VALVE CHAMBER CIVILS
RESERVOIR OUTLET

APPROVAL BY JW DEPOT			SCALE
CHECKED:			AS SHOWN
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
APPROVED BY:			
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AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	29.01.24

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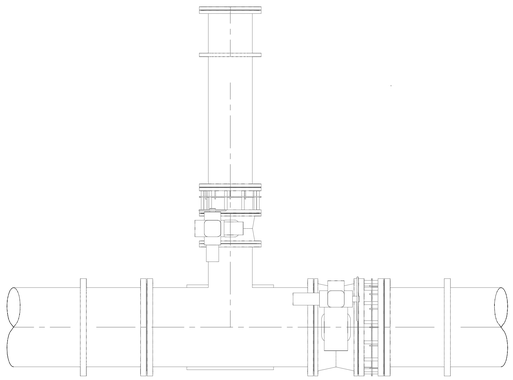
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PROJECT No. | DRAWING No. | REV.

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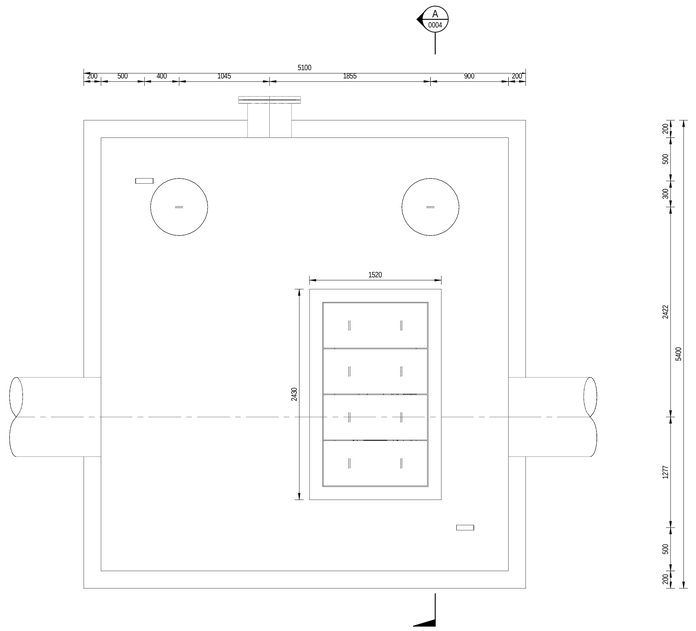
SHEET 1 OF 1

Plot Date: 2024/01/29 10:30:06 Plotted By: CC Office: CC Filename: BM:\BC\113503\ Bulk\In Reservoir and Tower Arkaia\ ISOLATION VALVE CHAMBER FROM RESERVOIR OUTLET.rvt



ISOLATION VALVE CHAMBER PLAN VIEW - ROOF REMOVED

SCALE 1 : 25

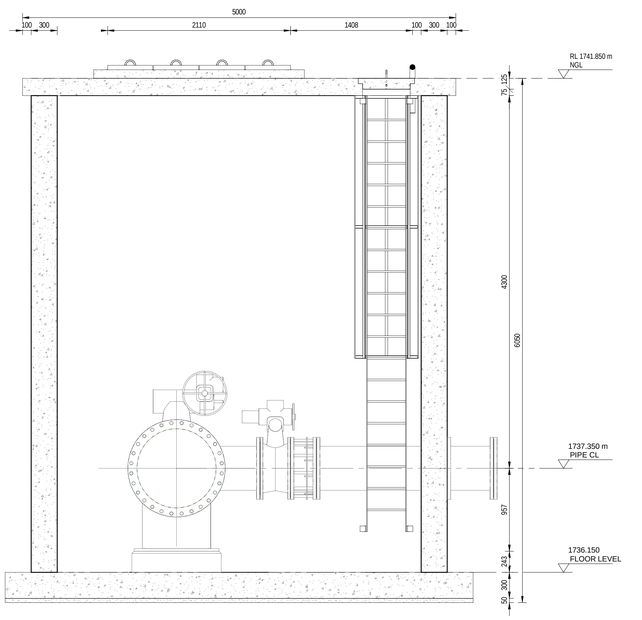


ISOLATION VALVE CHAMBER PLAN VIEW

SCALE 1 : 25

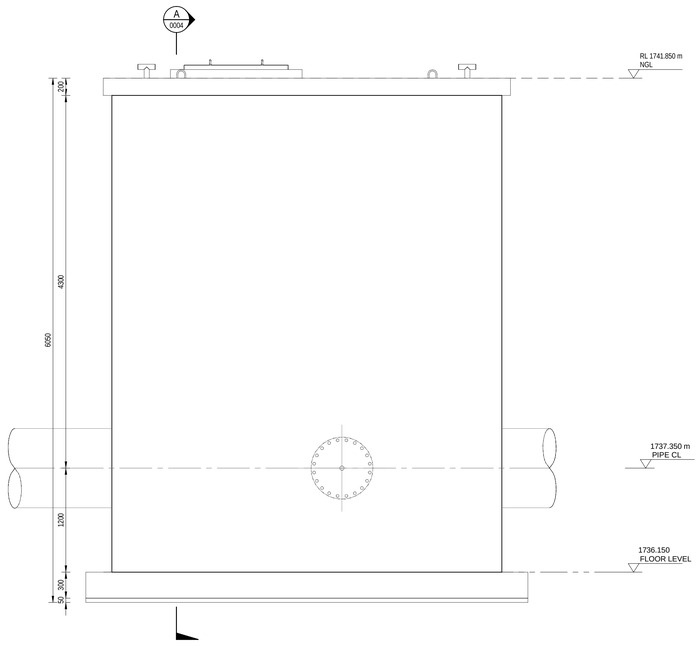
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5. CORROSION PROTECTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
6. RE-ENFORCEMENT STEEL SHALL BE MINIMUM 50 mm CLEAR OF PUDDLE PIPE AND FLANGES.
7. ALL PLINTHS ARE TO BE CAST AFTER SURFACE BED
8. ALL PLINTHS MUST HAVE A MINIMUM THICKNESS OF 200 mm
9. ALL BOLTS MUST BE AT LEAST 50 mm AWAY FROM THE EDGES AND INSIDE THE REINFORCEMENT
10. ANCHOR BOLTS MUST BE 150 mm DEEP INTO THE PLINTHS
11. ALL STEEL BOLTS, NUTS AND WASHERS SHALL BE GRADE 8.8 HOT DIPPED MILD STEEL, ANCHOR BOLTS TO BE 16 mm
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    - ROUGH TO SURFACES AGAINST WHICH BACKFILL OR FURTHER CONCRETE WILL BE PLACED
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19. ALL BURIED SECTIONS OF STEEL PIPE, FLANGES AND BOLTS TO BE COVERED BY VISCO ELASTIC TAPE WITH PVC WRAPPING (STOPAQ OR SIMILAR APPROVED)
20. 28 DAY CONCRETE CUBE COMPRESSIVE STRENGTH
    - BLINDING LAYER: CLASS: 15/19 15 MPa
    - FOOTINGS: CLASS 35/19 35 MPa
    - COLUMNS & WALLS: CLASS 35/19 35 MPa
    - SLABS: CLASS 35/19 35 MPa
21. PIPES THROUGH SLAB
    - POLYURETHANE APPLICATION AREA TO BE CLEAN, SOUND, FREE OF LOOSE PARTICLES, DUST, LAITANCE OILS AND OTHER CONTAMINANTS.
    - POLYURETHANE SEALANT TO BE APPLIED AROUND ENTIRE PIPE.
    - MINIMUM THICKNESS OF REINFORCED CONCRETE TO BE 100mm ON EACH SIDE.
    - APPLICATION PROCEDURE TO BE ACCORDING TO MANUFACTURER SPECIFICATIONS.
22. ALL EXPOSED EXTERNAL EDGES IN CONCRETE WORK SHALL HAVE 20 mm x 20 mm CHAMFERS.
23. FINAL CHAMBER LEVEL TO BE AT LEAST 350 mm ABOVE NGL. CHAMBER HEIGHT TO BE CONFIRMED ON SITE.
24. CHAMBER HEIGHT INDICATED INDICATIVELY. MINIMUM COVER TO TOP OF PIPE TO BE 1000 mm, FINAL COVER SLAB LEVEL TO BE A MINIMUM OF 350 mm ABOVE NGL. FINAL HEIGHT OF CHAMBER TO BE CONFIRMED FROM PIPELINE LONGSECTIONS.
25. THE TOP OF THE CHAMBER NEEDS TO HAVE A SMOOTH FINISH TO ENSURE THE PRECAST COVER SEATS APPROPRIATELY.
26. 2 x 150 mm THICK G7 LAYERS COMPACTED TO 93% MOD AASTHO 1 x 150 mm THICK IN-SITU ROADBED COMPACTED TO 90% MOD AASTHO
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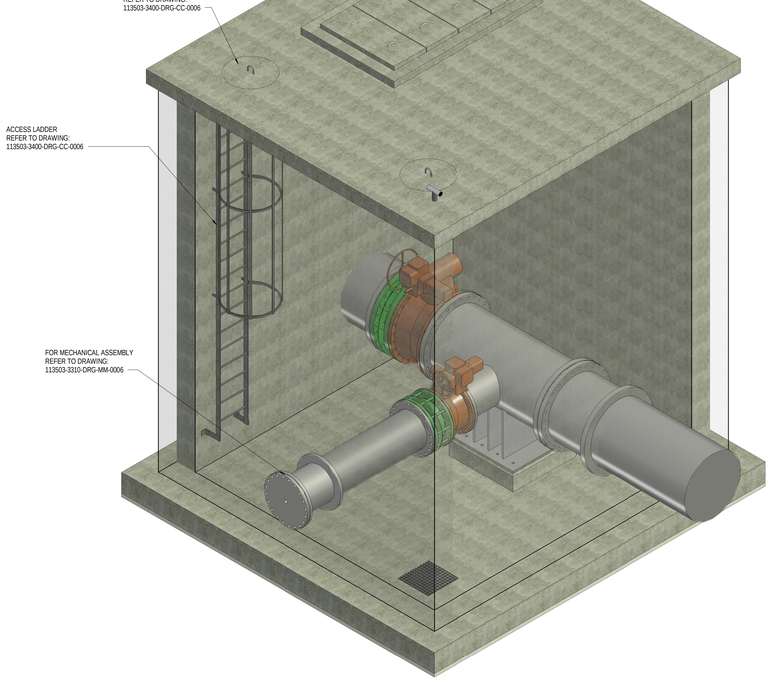
Section A

SCALE 1 : 25



SIDE VIEW - PS BYPASS PIPE

SCALE 1 : 25



ISOMETRIC VIEW

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CHECKED:	S.MNQONYWA	29.01.24
APPROVED BY:	C.KAN	29.01.24
	SIGNATURE	DATE
ECSA REG No:		
CHECKED BY:		
	SIGNATURE	DATE
ECSA REG No:		

Johannesburg Water

17 HARRISON STREET
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Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

GENERAL DETAILS
ISOLATION VALVE CHAMBER CIVILS
GRAVITY MAIN

APPROVAL BY JW DEPOT			SCALE
CHECKED:			AS SHOWN
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
APPROVED BY:			
	SIGNATURE BY:	DATE:	

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	29.01.24

DRAWING No.

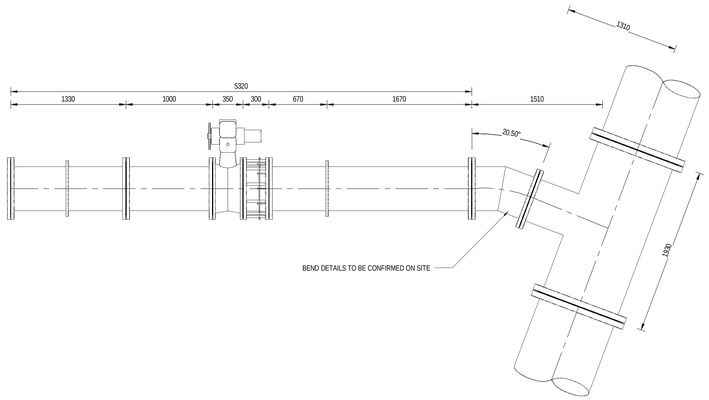
113503 - 3300 - DRG - CC - 0004 - T0

PROJECT No. | DRAWING No. | REV.

A0 ORIGINAL PAGE SIZE

SHEET 1 OF 1

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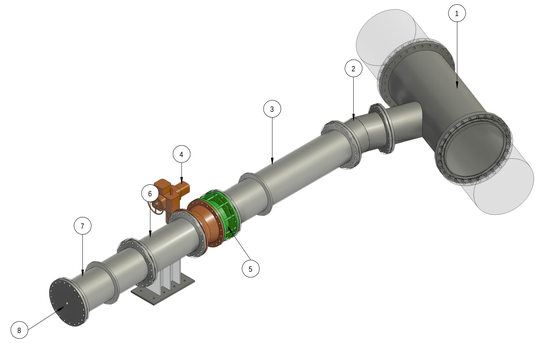


ISOLATION VALVE CHAMBER - PLAN VIEW

SCALE 1 : 25

PARTS LIST - ISOLATION VALVE CHAMBER

ITEM	QTY	PART DESCRIPTION
1	1	DN 900 x 500 x 90 DEGREE UNEQUAL TEE TO SANS 719 GRADE C: FLANGED ON ALL SIDES; FLANGED TO SANS1123 TABLE 1600/3 (FF)
2	1	DN 500 x 20.5 DEGREEE MEDIUM RADIUS BEND
3	1	DN 500 x 6 mm SAN 719; GRADE C SPOOL PIECE FLANGED BOTH ENDS SANS 1123 TABLE 1600/3 (FF) INCLUDING PUDDLE FLANGE
4	1	DN 500 PN 16 BUTTERFLY VALVE TO SANS 1849
5	1	DN 500 PN 16 DISMANTLING JOINT, DRILLED TO SANS 1123 TABLE 1600/3 (FF)
6	1	DN 500 PN SPOOL PIECE WITH PIPE ANHOR SUPPORT
7	1	DN 500 SANS 719; GRADE C SPOOL PIECE FLANGED BOTH ENDS SANS 1123 TABLE 1600/3 (FF) INCLUDING PUDDLE AND BLANK FLANG
8	1	DN 500 PN 16 BLANK FLANGE TO SANS 1123 TABLE 1600/8 (FF)



ISOLATION VALVE CHAMBER - ISOMETRIC VIEW

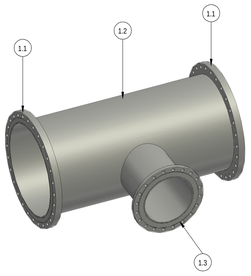
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MECHANICAL NOTES:

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4. THE CONTRUCTOR SHALL SURVEY ALL ABOVE GROUND AND UNDERGROUND PIPES TO CONFIRM LEVELS AND SHALL PROVIDE SURVEY INFORMATION TO THE ENGINEER.
5. THE CONTRACTOR SHALL MAKE PROVISION FOR FITTINGS TO C&I CONNECTIONS, LOCAL DRAIN POINS AND QUICK-COUPLING CONNECTION POINTS TO FLUSH THE LINE WITH COMPRESSED AIR.
6. ALL FLANGES AND FITTINGS BELOW GROUND SHALL BE COVERED WITH A VISCO-ELASTIC COATING (STOPAQ OR SIMILAR APPROVED) AND WRAPPED WITH PVC TAPE.
7. THE RESTRAINED FLANGE ADAPTORS AND FLANGES ON THE SUCTION AND DISCHARGE PIPEWORK SHALL MATCH THE PRESSURE CLASS AND DRILLING PATTERN OF THE PUMP SET.
8. ANY DISCREPANCIES BETWEEN THE DRAWINGS, SPECIFICATIONS AND BILL OF QUANTITIES MUST BE REPORTED IMMEDIATELY TO THE ENGINEER.
9. FOR ANCHOR PIPE SUPPORTS REFER TO STANDARD DETAIL DRAWING 113503-3410-DRG-MM-0003.
10. FOR PIPE THRUST SUPPORTS REFER TO STANDARD DETAIL DRAWING 113503-3410-DRG-MM-0005.

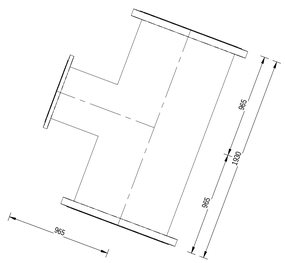
ITEM 1 - PARTS LIST

ITEM	QTY	PART DESCRIPTION
1.1	2	DN 900 PN 16 FLANGE TO SANS1123 TABLE 1600/3 (FF)
1.2	1	DN 900 (10 mm) x 500 (6 mm) x 90 DEGREE UNEQUAL TEE TO SANS 719 GRADE C
1.3	1	DN 500 PN 16 FLANGE TO SAN1123 TABLE 1600/3 (FF)



ITEM 1 - ISOMETRIC VIEW

NTS

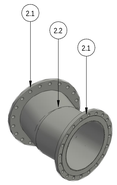


ITEM 1 - PLAN VIEW

SCALE 1 : 20

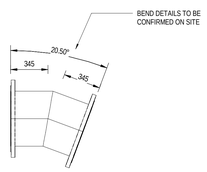
ITEM 2 - PARTS LIST

ITEM	QTY	PART DESCRIPTION
2.1	2	DN 500 PN 16 FLANGE TO SANS 1123 TABLE 1600/3 (FF)
2.2	1	DN 500 x 20.5 DEGREE MEDIUM RADIUS (2xD) BEND TO SANS 719 GRADE, (6 mm)



ITEM 2 - ISOMETRIC VIEW

NTS

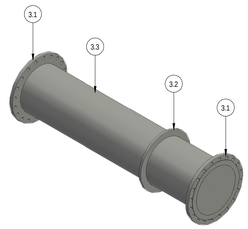


ITEM 2 - PLAN VIEW

SCALE 1 : 20

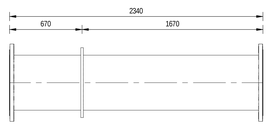
ITEM 3 - PARTS LIST

ITEM	QTY	PART DESCRIPTION
3.1	2	DN 500 PN 16 FLANGE TO SANS 1123 TABLE 1600/3 (FF)
3.2	1	DN 500 PN 16 PUDDLE FLANGE SANS 1123 TABLE 1600/8 (FF)
3.3	1	DN 500 SPOOL PIECE TO SANS 719 GRADE C, (6 mm)



ITEM 3 - ISOMETRIC VIEW

NTS

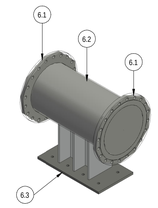


ITEM 3 - PLAN VIEW

SCALE 1 : 20

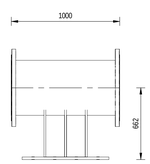
ITEM 6 - PARTS LIST

ITEM	QTY	PART DESCRIPTION
6.1	2	DN 500 PN 16 FLANGE TO SANS 1123 TABLE 1600/3 (FF)
6.2	1	DN 500 SPOOL PIECE TO SANS 719 GRADE C, (6 mm)
6.3	1	DN 500 STEEL PIPE ANCHOR SUPPORT; REFER TO DRAWING:113503-3410-DRG-MM-0003



ITEM 6 - ISOMETRIC VIEW

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ITEM 6 - SIDE VIEW

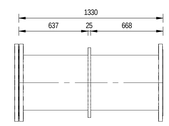
SCALE 1 : 20

ITEM 7 - PARTS LIST

ITEM	QTY	PART DESCRIPTION
7.1	2	DN 500 PN 16 FLANGE TO SANS 1123 TABLE 1600/3 (FF)
7.2	1	DN 500 PN 16 PUDDLE FLANGE SANS 1123 TABLE 1600/8 (FF)
7.3	1	DN 500 SPOOL PIECE TO SANS 719 GRADE, (6 mm)

ITEM 7 - ISOMETRIC VIEW

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ITEM 7 - PLAN VIEW

SCALE 1 : 20

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DRAWN:	L.GWIJI	26.01.24
CHECKED:	S.MNQONYWA	26.01.24
APPROVED BY:	C.KAN	26.01.24
	SIGNATURE	DATE
ECSA REG No:		
CHECKED BY:		
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ECSA REG No:		

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Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

GENERAL DETAILS
ISOLATION VALVE CHAMBER MECHANICALS
RESERVOIR OUTLET

APPROVAL BY JW DEPOT			SCALE
CHECKED:			AS SHOWN
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
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	SIGNATURE BY:	DATE:	

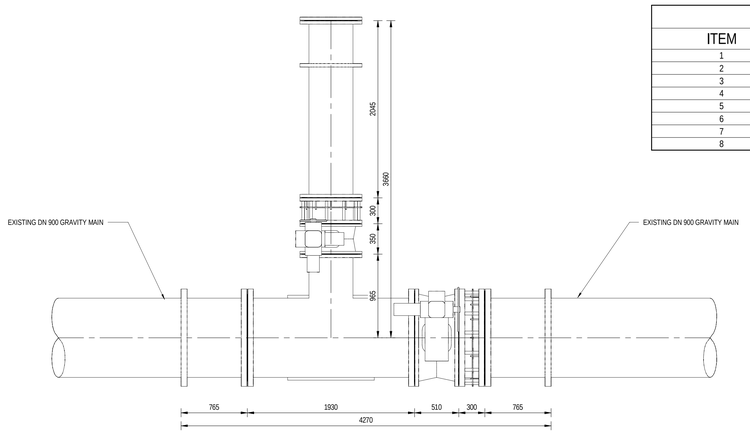
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REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	26.01.24

DRAWING No.

113503	-	3310-DRG-MM-0005	-	T0
PROJECT No.		DRAWING No.		REV.

A0 ORIGINAL PAGE SIZE — SHEET 1 OF 1

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Office: JHB

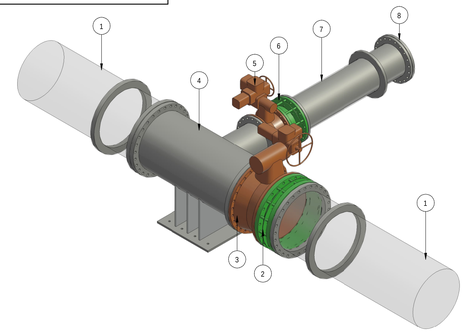


ISOLATION VALVE CHAMBER - PLAN VIEW

SCALE 1 : 25

PART LIST - ISOLATION VALVE CHAMBER

ITEM	QTY	PART DESCRIPTION
1	2	EXISTING DN 900 GRAVITY MAIN, FLANGED ON ONE END SANS 1123 TABLE 1600/3 (FF) INCLUDING PUDDLE FLANGE
2	1	DN 500 PN 16 DISMANTLING JOINT, DRILLED TO SANS 1123 TABLE 1600/3 (FF)
3	1	DN 900 PN 16 BUTTERFLY VALVE TO SANS 1849
4	1	DN 900 x 500 x 90 DEGREE STRAIGHT TEE PIECE FLANGED ON BOTH END SANS 1123 TABLE 1600/3 (FF) WITH PIPE ANHOR SUPPORT; REFER TO ITEM DETAIL
5	1	DN 500 PN 16 BUTTERFLY VALVE TO SANS 1849
6	1	DN 500 PN 16 DISMANTLING JOINT, DRILLED TO SANS 1123 TABLE 1600/3 (FF)
7	1	DN 500 x PN 16 SAN 719; GRADE C SPOOL PIECE FLANGED BOTH ENDS SANS 1123 TABLE 1600/3 (FF) INCLUDINGBLANK FLANGE; REFER TO ITEM 7 DETAI
8	1	DN 500 PN 16 BLANK FLANGE TO SANS 1123 TABLE 1600/8 (FF)



ISOLATION VALVE CHAMBER - ISOMETRIC VIEW

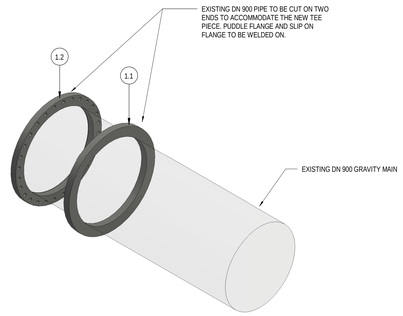
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10. FOR PIPE THRUST SUPPORTS REFER TO STANDARD DETAIL DRAWING 113503-3410-DRG-MM-0005.

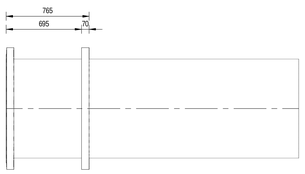
PARTS LIST - ITEM 1

ITEM	QTY	PART DESCRIPTION
1.1	1	DN 900 PN16 PUDDLE FLANGE TO SANS 1123 TABLE 1600/3 (FF)
1.2	1	DN 900 PN16 PUDDLE FLANGE TO SANS 1123 TABLE 1600/3



ITEM 1 - ISOMETRIC VIEW

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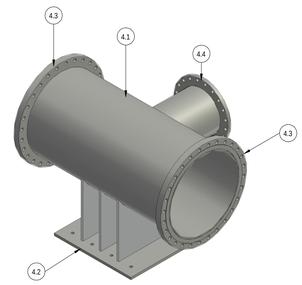


ITEM 1 - PLAN VIEW

SCALE 1 : 20

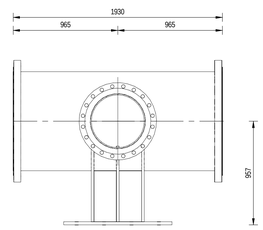
PARTS LIST - ITEM 4

ITEM	QTY	PART DESCRIPTION
4.1	1	DN 900 (10 mm) x 500 (6 mm) x 90 DEGREE STRAIGHT TEE PIECE
4.2	1	DN 900 STEEL PIPE ANCHOR SUPPORT; REFER TO DRAWING: 113503-3410-DRG-MM-0004
4.3	2	DN 900 PN 16 FLANGE TO SANS 1123 TABLE 1600/3 (FF)
4.4	1	DN 500 PN 16 FLANGE TO SANS 1123 TABLE 1600/3 (FF)



ITEM 4 - ISOMETRIC VIEW

NTS

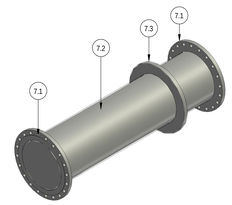


ITEM 4 - SIDE VIEW

SCALE 1 : 20

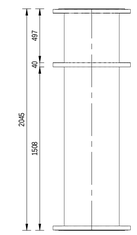
PARTS LIST - ITEM 7

ITEM	QTY	PART DESCRIPTION
7.1	2	DN 500 PN 16 FLANGE TO SANS 1123 TABLE 1600/3 (FF)
7.2	1	DN 500 x PN 16 SAN 719; GRADE C SPOOL PIECE FLANGED BOTH ENDS SANS 1123 TABLE 1600/3 (FF) INCLUDING PUDDLE AND BLANK FLANGE, (6 mm)
7.3	1	DN 900 PN16 PUDDLE FLANGE TO SANS 1123 TABLE 1600/3 (FF)



ITEM 7 - ISOMETRIC VIEW

NTS



ITEM 7 - PLAN VIEW

SCALE 1 : 20

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DRAWN:	L.GWIJI	26.01.24
CHECKED:	M. BULBULIA	26.01.24
APPROVED BY:	R. BARRY	26.01.24
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GENERAL DETAILS
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GRAVITY MAIN

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AMENDMENTS		
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T0	ISSUED FOR TENDER	26.01.24

DRAWING No.

113503 - 3310 - DRG - MM - 0006 - T0

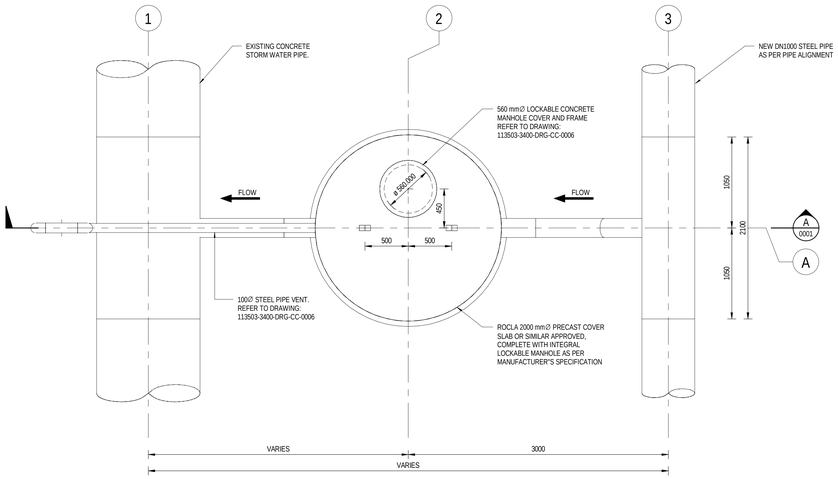
PROJECT No. | DRAWING No. | REV.

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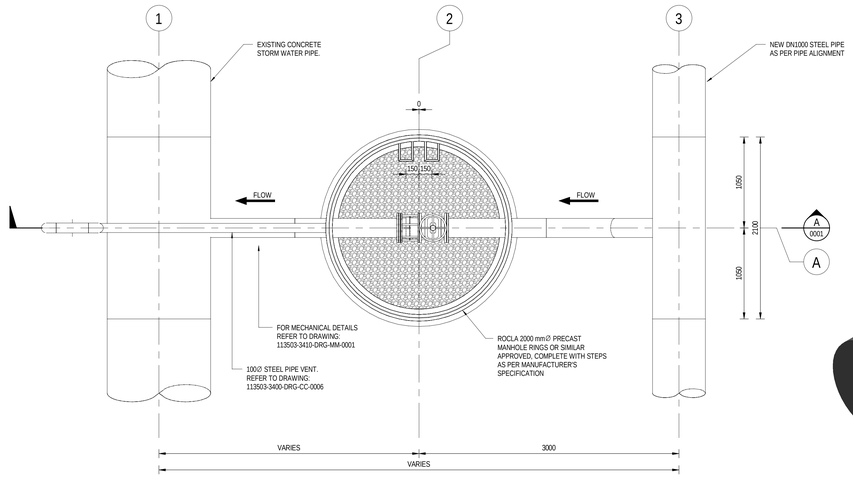
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3. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE GENERAL NOTES DRAWINGS AND ALL PROJECT SPECIFICATIONS.
4. THE CONTRACTOR SHALL SURVEY ALL ABOVE GROUND AND UNDERGROUND PIPES TO CONFIRM THE LEVELS AND SHALL PROVIDE SURVEY INFORMATION TO THE ENGINEER.
5. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN AND SHALL BE CHECKED BY THE CONTRACTOR BEFORE ORDERING ANY MATERIAL ANY DISCREPANCIES MUST BE REPORTED TO ENGINEER.
6. CONCRETE FINISHES SHALL BE AS FOLLOWS. EXCEPT WHERE OTHERWISE SHOWN:
   - SMOOTH SPECIAL TO SURFACES EXPOSED TO VIEW
   - ROUGH TO SURFACES AGAINST WHICH BACKFILL OR FURTHER CONCRETE WILL BE PLACED
   - FLOOR FINISHES INSIDE CHAMBERS AND PULP STATIONS TO BE WOOD FLOATED
7. INSULATION MATERIAL MUST BE PLACED BETWEEN DISSIMILAR METALS.
8. CONCRETE TO BE PLACED ON A 50 mm BLINDING LAYER.
9. ALL BURIED SECTIONS OF STEEL PIPE, FLANGES AND BOLTS TO BE COVERED BY VISCO ELASTIC TAPE WITH PVC WRAPPING (STOPAQ OR SIMILAR APPROVED)
10. 28 DAY CONCRETE CUBE COMPRESSIVE STRENGTH
    - BLINDING LAYER: CLASS 15/19 15 MPa
    - FOOTINGS: CLASS 35/19 35 MPa
    - COLUMNS & WALLS: CLASS 35/19 35 MPa
    - SLABS: CLASS 35/19 35 MPa
11. PIPES THROUGH SLAB
    - POLYURETHANE APPLICATION AREA TO BE CLEAN, SOUND, FREE OF LOOSE PARTICLES, DUST, LAITANCE OILS AND OTHER CONTAMINANTS.
    - POLYURETHANE SEALANT TO BE APPLIED AROUND ENTIRE PIPE.
    - APPLICATION PROCEDURE TO BE ACCORDING TO MANUFACTURER SPECIFICATIONS.
12. ALL EXPOSED EXTERNAL EDGES IN CONCRETE WORK SHALL HAVE 20 mm x 20 mm CHAMFERS.
13. THE TOP OF THE CHAMBER NEEDS TO HAVE A SMOOTH FINISH TO ENSURE THE PRECAST COVER SEATS APPROPRIATELY
14. ALL PIPEWORK IS INDICATIVE AND SHALL NOT BE MANUFACTURED FROM THIS DRAWING THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE PIPEWORK, VALVES AND SPECIALS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE DESIGN ENGINEER FOR APPROVAL BEFORE MANUFACTURING OR FABRICATION COMMENCES. THE DESIGN MUST BE IN ACCORDANCE WITH THE MECHANICAL SPECIFICATION.



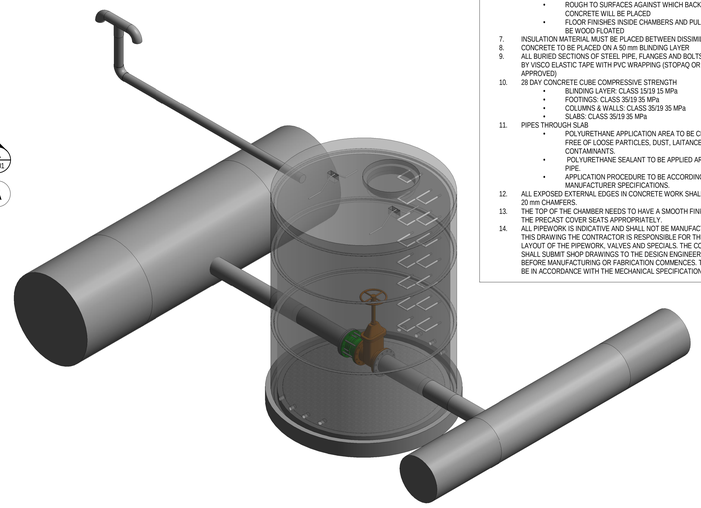
ROOF PLAN: SCOUR VALVE CHAMBER

SCALE 1 : 25



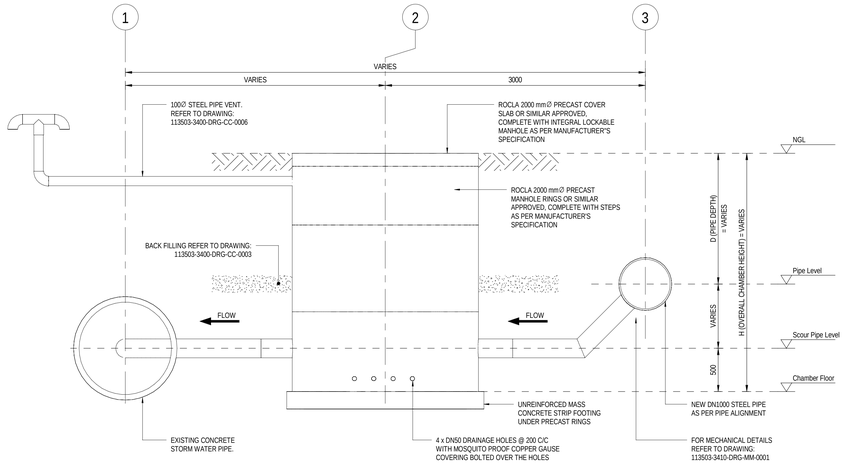
PLAN: SCOUR VALVE CHAMBER

SCALE 1 : 25



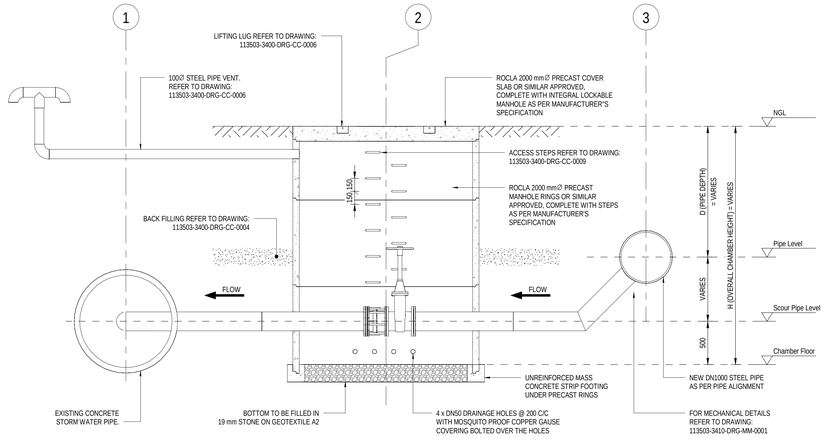
ISOMETRIC: AIR VALVE CHAMBER

SCALE



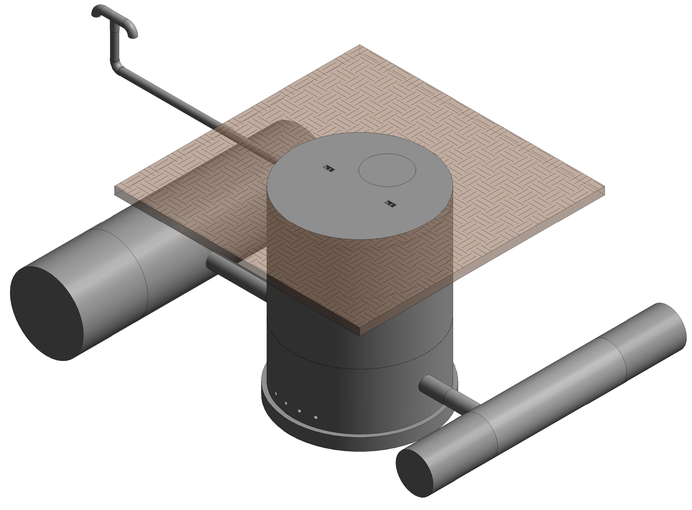
ELEVATION: SCOUR VALVE CHAMBER

SCALE 1 : 25



SECTION A

SCALE 1 : 25



ISOMETRIC: AIR VALVE CHAMBER

NTS

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DRAWN:	N. NXUMALO	29.01.2024	
CHECKED:	S. MNQONYWA	29.01.2024	
APPROVED BY:	C. KAN	29.01.2024	
	SIGNATURE	DATE	
ECSA REG No:			
CHECKED BY:			
	SIGNATURE	DATE	
ECSA REG No:			

Johannesburg Water

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Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
FROM CROSBY BELOW GROUND RESERVOIR TO HURSTHILL RESERVOIR COMPLEX

TYPICAL DETAILS AND STANDARDS
SCOUR VALVE CHAMBER IN THE ROAD PRISM

APPROVAL BY JW DEPOT			SCALE
CHECKED:			AS SHOWN
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
APPROVED BY:			
	SIGNATURE BY:	DATE:	

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	29.01.2024

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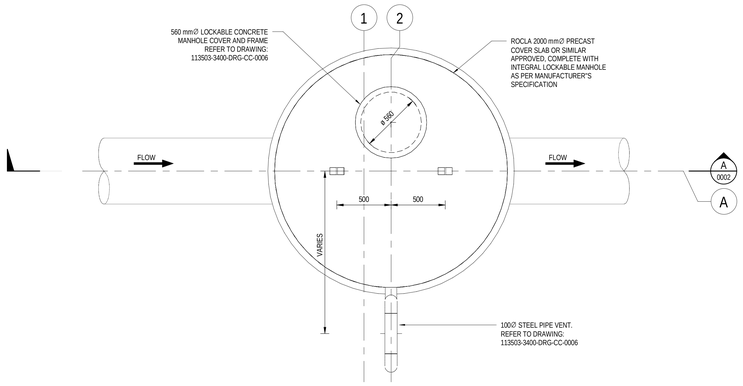
113503 - 3400 - DRG - CC - 0001 - T0

PROJECT No. | DRAWING No. | REV.

A0 | SHEET 1 OF 2

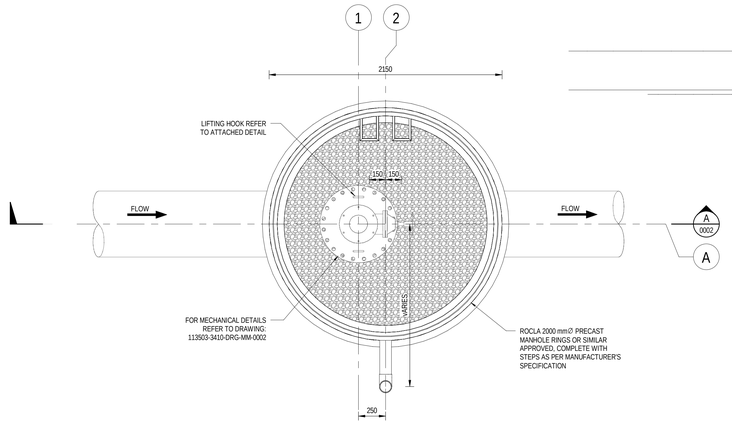
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FILE No. BIM 360:/PA 113503- Bloton Reservoir and Tower Africa/113503_3000_TYPICAL_SCOUR_VALVE_CHAMBER.rvt



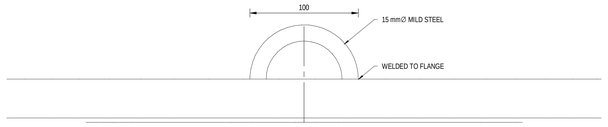
ROOF PLAN: AIR VALVE CHAMBER

SCALE 1 : 20



PLAN: AIR VALVE CHAMBER

SCALE 1 : 20

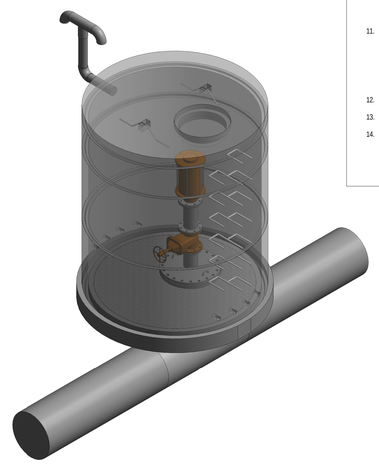


LIFTING HOOK DETAIL

SCALE 1 : 2

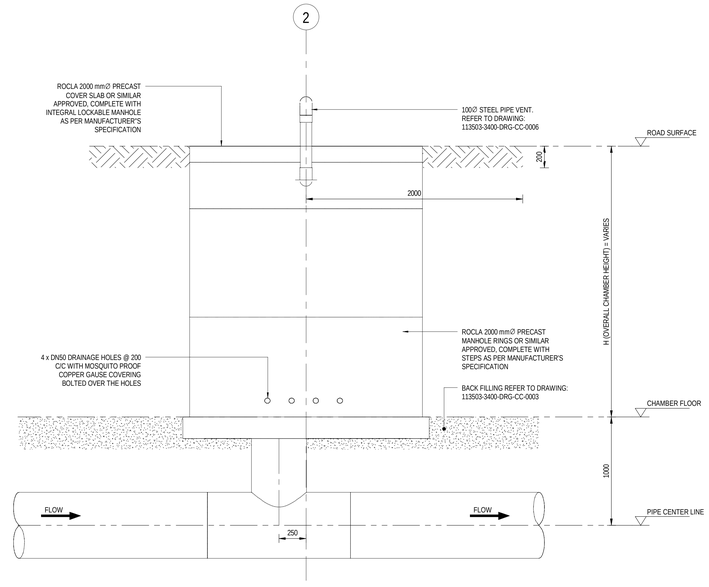
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3. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE GENERAL NOTES DRAWINGS AND ALL PROJECT SPECIFICATIONS.
4. THE CONTRACTOR SHALL SURVEY ALL ABOVE GROUND AND UNDERGROUND PIPES TO CONFIRM THE LEVELS AND SHALL PROVIDE SURVEY INFORMATION TO THE ENGINEER.
5. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN AND SHALL BE CHECKED BY THE CONTRACTOR BEFORE ORDERING ANY MATERIAL ANY DISCREPANCIES MUST BE REPORTED TO ENGINEER.
6. CONCRETE FINISHES SHALL BE AS FOLLOWS. EXCEPT WHERE OTHERWISE SHOWN:
   - SMOOTH SPECIAL TO SURFACES EXPOSED TO VIEW
   - ROUGH TO SURFACES AGAINST WHICH BACKFILL OR FURTHER CONCRETE WILL BE PLACED
   - FLOOR FINISHES INSIDE CHAMBERS AND PULP STATIONS TO BE WOOD FLOATED
7. INSULATION MATERIAL MUST BE PLACED BETWEEN DISSIMILAR METALS.
8. CONCRETE TO BE PLACED ON A 50 mm BLINDING LAYER
9. ALL BURIED SECTIONS OF STEEL PIPE, FLANGES AND BOLTS TO BE COVERED BY VISCO ELASTIC TAPE WITH PVC WRAPPING (STOPAQ OR SIMILAR APPROVED)
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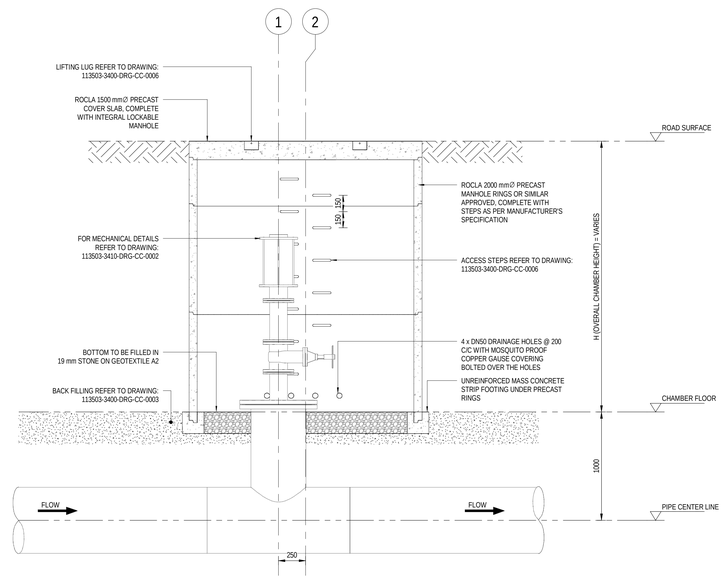
ISOMETRIC: AIR VALVE CHAMBER

NTS



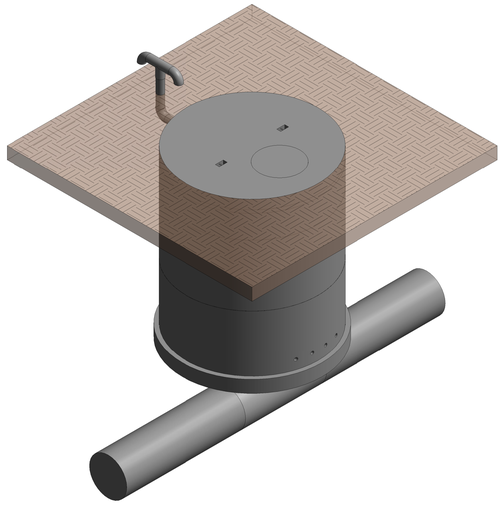
ELEVATION: AIR VALVE CHAMBER

SCALE 1 : 20



SECTION A

SCALE 1 : 20



ISOMETRIC: AIR VALVE CHAMBER

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Johannesburg Water

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Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
RAND WATER CONNECTION TO CROSBY RESERVOIR PIPELINE

TYPICAL DETAILS AND STANDARDS
AIR VALVE CHAMBER

APPROVAL BY JW DEPOT			SCALE
CHECKED:			AS SHOWN
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
APPROVED BY:			
	SIGNATURE BY:	DATE:	

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	29.01.2024

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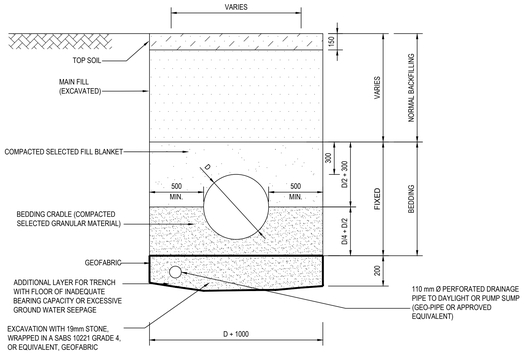
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PROJECT No. | DRAWING No. | REV.

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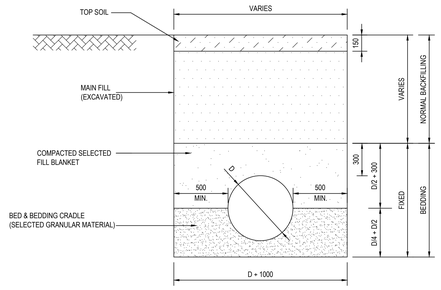
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Plot Date: 2024/01/29 22:27:02 Office: JJC Filename: BIM 360:/RA 113503- Brixton Reservoir and Tower Africa/113503_3000_TYPICAL_AIR_VALVE_CHAMBER.rvt



PROPOSED TYPICAL TRENCH GEOMETRY FOR PAYMENT PURPOSES IN AREAS WITH EXCESSIVE GROUND WATER FOR PIPES =>1000Ø AND ABOVE IN CLASS B BEDDING (STEEL PIPES)

SCALE 1:20



PROPOSED TYPICAL TRENCH GEOMETRY FOR PAYMENT PURPOSES FOR PIPES =< 1000Ø AND BELOW IN CLASS B BEDDING (STEEL PIPES)

SCALE 1:20

ROAD LAYERWORKS				
LAYER	**TREATMENT**		**LAYER THICKNESS (mm)**	**DEPTH (mm)**
SURFACING	PERMANENT SURFACING 30 mm BITUMEN HOT-MIX FINE 70 mm BITUMEN HOT-MIX BTB		100	
BASE	MATERIAL FROM TOP 400 (550) mm STOCKPILE STABILIZE WITH 4% OPC COMPACT TO 98% MOD AASHTO		150	100
SUBBASE	MATERIAL FROM TOP 400 (550) mm STOCKPILE STABILIZE WITH 4% OPC COMPACT TO 95% MOD AASHTO		150	250
SELECTED SUBGRADE	LOCAL STREETS COMPACT TO 93% MOD AASHTO	ARTERIALS, COLLECTORS AND INDUSTRIAL STREETS MATERIAL FROM TOP 550 mm STOCKPILE STABILIZE WITH 4% OPC COMPACT TO 93% MOD AASHTO	150	400
SUBGRADE	COMPACT TO 90% MOD AASHTO		250	550
THESE LAYERWORKS NEEDS TO BE CONFIRMED IN THE WAYLEAVE APPLICATION THAT THE CONTRACTOR IS TO SUBMIT TO THE JOHANNESBURG ROAD AGENCY. CONSTRUCTION WORK CAN ONLY COMMENCE ONCE THE WAYLEAVE APPLICATION HAS BEEN APPROVED				

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ROADBED:

- INSITU MATERIAL COMPACTED TO 93% MOD AASHTO UNDER ROADS AND 90% IN OTHER LOCATIONS

BED & CRADDLE MATERIAL:

- LESS THAN 2% PASSING 0,075mm
- 0-10% PASSING THE 1,180mm SIEVE
- 90-100% PASSING THE 4,475mm SIEVE

FILL BLANKET MATERIAL:

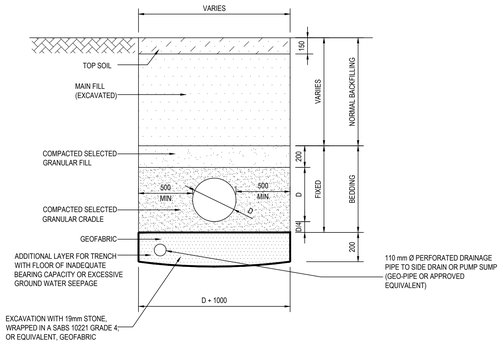
- > 50% BIGGER THAN 0,075mm
- < 15% SMALLER THAN 0,002mm
- PI WEIGHTED ≤ 15

MAIN BACKFILL

- EXCAVATED MATERIAL CONTAINING LITTLE OR NO ORGANIC MATERIAL
- NO BOULDERS > 150mm
- MATERIAL MUST BE COMPACTED TO AVOID SETTLEMENT

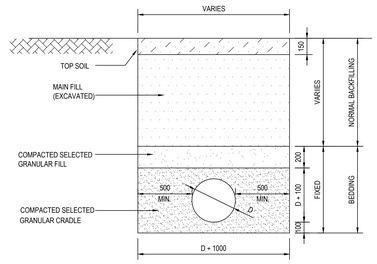
IN AREAS SUBJECT OF TRAFFIC ROADS:

- PI < 12
- MIN. CBR OF 15% AT SPECIFIED DENSITY IF BACKFILL IS PLACED IN UPPER 150mm OF SUBGRADE
- MIN. CBR OF 21% IF BACKFILL IS PLACED LOWER IN SUBGRADE



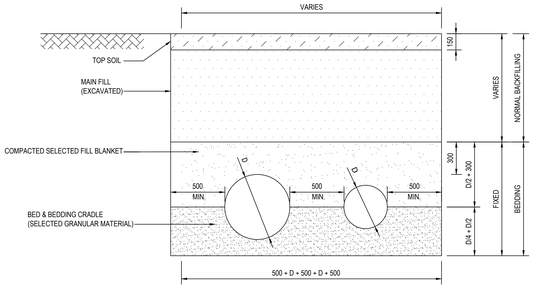
PROPOSED TYPICAL TRENCH GEOMETRY FOR PAYMENT PURPOSES IN AREAS WITH EXCESSIVE GROUND WATER FOR PIPES =>1000Ø AND BELOW IN FLEXIBLE BEDDING (STEEL PIPES)

SCALE 1:20



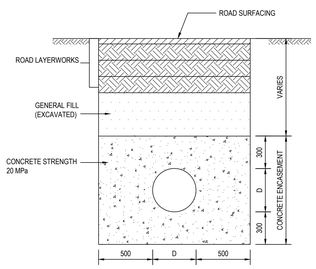
PROPOSED TYPICAL TRENCH GEOMETRY FOR PAYMENT PURPOSES IN AREAS FOR PIPES =<1000Ø AND BELOW IN FLEXIBLE BEDDING (STEEL PIPES)

SCALE 1:20



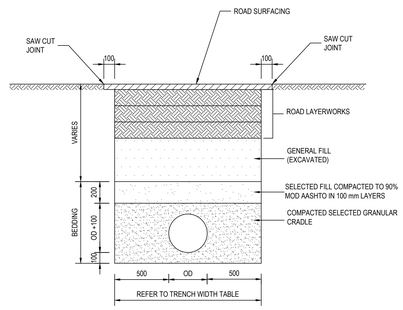
PROPOSED TYPICAL TRENCH GEOMETRY FOR PAYMENT PURPOSES FOR PIPES SHARING A TRENCH IN CLASS B BEDDING

SCALE 1:20



CONCRETE ENCASEMENT DETAIL & UNDER ROAD OR SHALLOW COVER

1:20



TYPICAL FLEXIBLE PIPE TRENCH AND BEDDING DETAIL
(UNDER ROADS)

1:20

CONSULTING ENGINEERS ZUTARI IMPACT. ENGINEERED. 32A JELLICOE AVENUE OXFORD CORNER ROSEBANK TEL: +27 11 214 4500 SOUTH AFRICA	DESIGNED	H. GERBER	31.01.24	Johannesburg Water	17 HARRISON STREET MARSHALLTOWN 2107 TEL: (011) 688-1400 FAX: (011) 688-1529	Joburg	APPROVAL BY JW DEPOT		SCALE
	DRAWN	H. GERBER	31.01.24				CHECKED		
	CHECKED	S. MNQONYWA	31.01.24				APPROVED BY:		
	APPROVED BY:							SIGNATURE	DATE
		SIGNATURE	DATE				APPROVAL BY JW PLANNING		
	ECSA REG. No.						CHECKED		
CLIENT 17 HARRISON STREET MARSHALLTOWN 2107	CHECKED BY:					PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE CROSBY BULK INFRASTRUCTURE PROJECT TYPICAL DETAILS AND STANDARDS TRENCH EXCAVATION AND BACKFILL	APPROVED BY:		
		SIGNATURE	DATE					SIGNATURE	DATE
	ECSA REG. No.								

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	FOR TENDER	31.01.24

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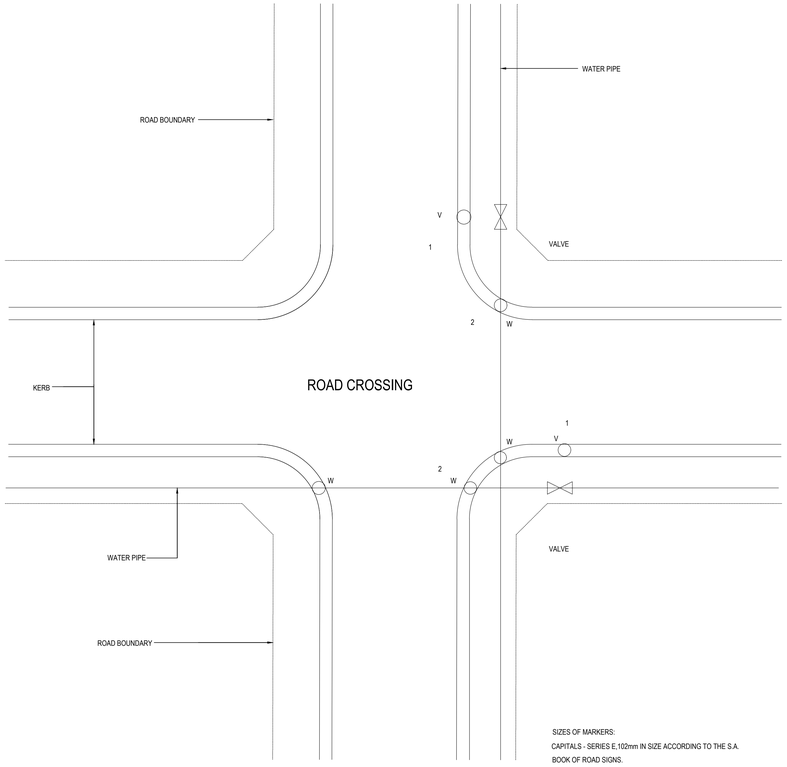
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A0 SHEET 1 OF 1

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FILE No.

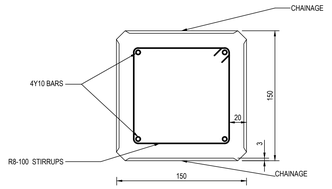


SIZES OF MARKERS:

CAPITALS - SERIES E,102mm IN SIZE ACCORDING TO THE S.A. BOOK OF ROAD SIGNS.

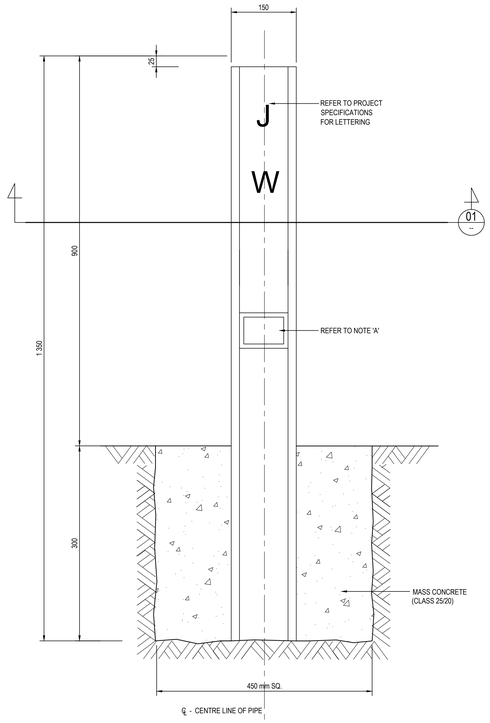
① VALVE MARKER-"V" MUST BE PAINTED

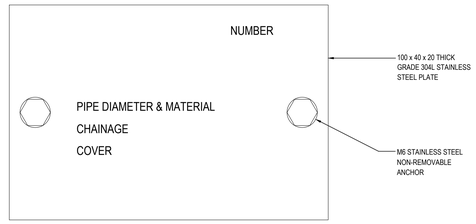
② WATER PIPE MARKER-"W"



SECTION 01-01

SCALE 1:5



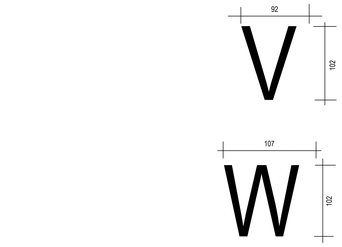


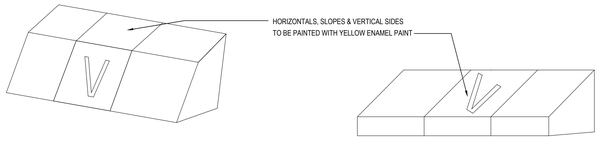
NOTE 'A'

SCALE 1:5

NOTES

* REFER TO PROJECT SPECIFICATIONS FOR MARKER PLATE DETAILS





BARRIER KERB

MOUNTABLE KERB

DETAILS OF SERVICE MARKERS

NOTE

1) TOP SURFACE OF COVERS TO BE PAINTED AS FOLLOWS:

VALVES NORMALLY OPEN	: BLUE
VALVES NORMALLY CLOSED	: SIGNAL RED
SCOUR VALVES	: GREEN
AIR VALVES	: BROWN

PIPELINE PRECAST CONCRETE MARKER POST

SCALE 1:5

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DESIGNED	ZUT		31.01.24
DRAWN	ZUT		31.01.24
CHECKED	S. MNQONYWA		31.01.24
APPROVED BY:			
	SIGNATURE		DATE
ECSA REG. No.			
CHECKED BY:			
	SIGNATURE		DATE
ECSA REG. No.			

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

TEL: (011) 688-1400

FAX: (011) 688-1529

Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
FROM CROSBY BELOW GROUND RESERVOIR TO HURSTHILL RESERVOIR COMPLEX

TYPICAL DETAILS AND STANDARDS
PIPE MARKER BLOCK

APPROVAL BY JW DEPOT			SCALE
CHECKED			
APPROVED BY:			
	SIGNATURE	DATE	
APPROVAL BY JW PLANNING			
CHECKED			
APPROVED BY:			
	SIGNATURE	DATE	

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	31.01.24

DRAWING No.

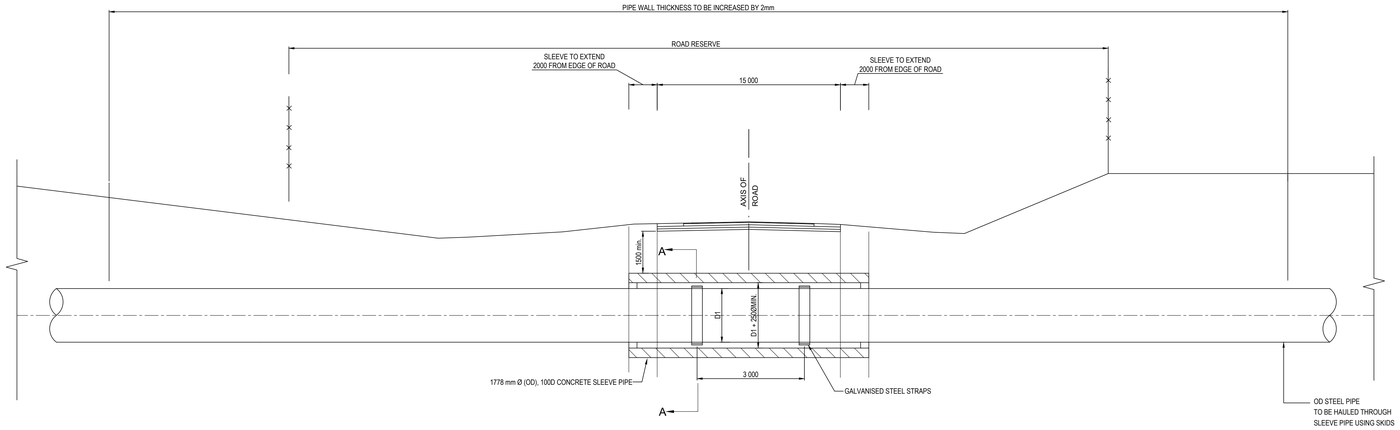
113503 - 3400-DRG-CC-0004 - T0

PROJECT No. DRAWING No. REV.

A0 SHEET 1 OF 1

ORIGINAL PAGE SIZE

FILE No.



TYPICAL ROAD CROSSING
N.T.S.

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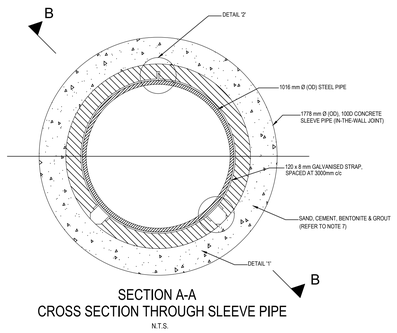
NOTES:

1. PIPE LENGTH (m) Y (m) SKIDS PER LENGTH

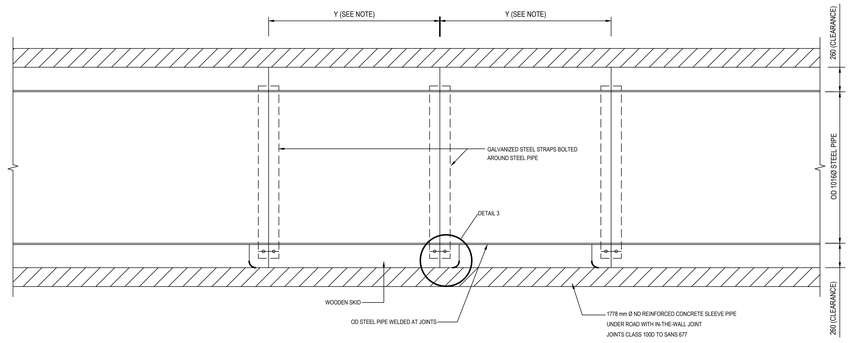
   6.0 2.0 3

2. SLEDGE BLOCK OF APPROVED HARDWOOD SHAPED TO FIT HDPE/STEEL PIPE IN SLEEVE. WOOD TO BE PRETREATED WITH CREOSOTE AND SHALL COMPLY TO SANS 616.
3. ENDS OF SLEEVE TO BE GROUTED AND CLOSED OFF WITH 230mm BRICK WORK AFTER INSTALLATION OF STEEL PIPES.
4. SOILCRETE AT SLEEVE ENDS TO BE PROVIDED AROUND PIPE IF REQUIRED BY RESIDENT ENGINEER.
5. SPECIAL ATTENTION SHOULD BE GIVEN TO THE INSTALLATION OF THE SLEEVE PIPE - MINIMUM DEFLECTION SHOULD BE ALLOWED AT JOINTS.
6. STEEL PIPES TO BE WELDED.
7. GROUT: 5% CEMENT 3% BENTONITE RIVERSAND MIX

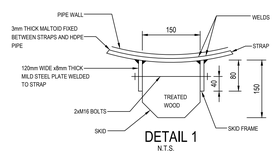
STEEL PIPE (mm)	SLEEVE PIPE OUTSIDE DIAMETER (mm)
1016Ø STEEL	1778Ø



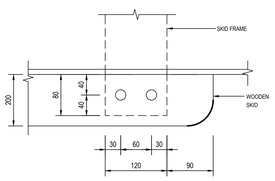
SECTION A-A
CROSS SECTION THROUGH SLEEVE PIPE
N.T.S.



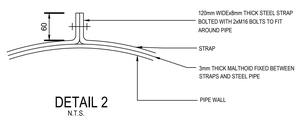
SECTION B-B
N.T.S.



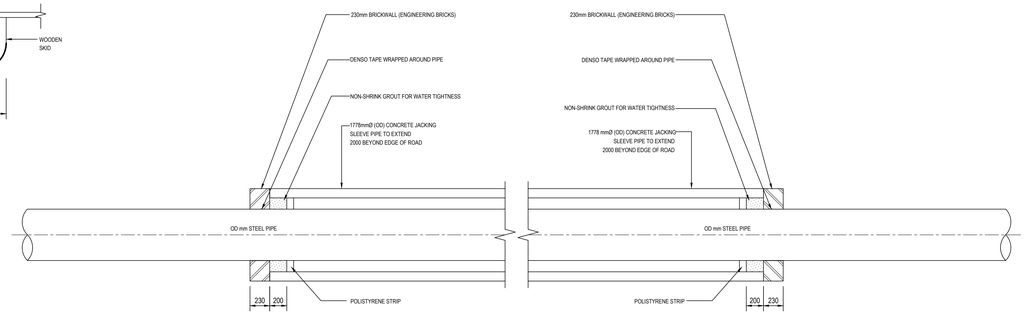
DETAIL 1
N.T.S.



DETAIL 3
N.T.S.



DETAIL 2
N.T.S.



END OF SLEEVE
N.T.S.

CONSULTING ENGINEERS

32A JELLICOE AVENUE
OXFORD CORNER
ROSEBANK
SOUTH AFRICA
TEL: +27 11 214 4500

CLIENT

17 HARRISON STREET
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DESIGNED	A. LESHALABE	31.01.24	
DRAWN	A. LESHALABE	31.01.24	
CHECKED	S. MNQONYWA	31.01.24	
APPROVED BY:	C. KAN	31.01.24	
	SIGNATURE	DATE	
ECSA REG. No.			
CHECKED BY:			
	SIGNATURE	DATE	
ECSA REG. No.			

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

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Joburg

PERTH EMPIRE CORRIDORS OF FREEDOM MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

TYPICAL DETAILS AND STANDARDS
PIPE JACKING SECTION

APPROVAL BY JW DEPOT			SCALE
CHECKED			
APPROVED BY:			
	SIGNATURE	DATE	
APPROVAL BY JW PLANNING			
CHECKED			
APPROVED BY:			
	SIGNATURE	DATE	

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	31.01.24

DRAWING No.

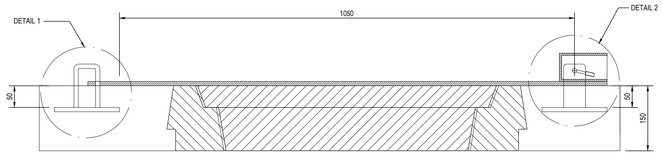
113503 - 3400-DRG-CC-0005 - T0

PROJECT No. DRAWING No. REV.

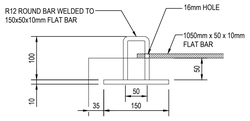
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SHEET 1 OF 1

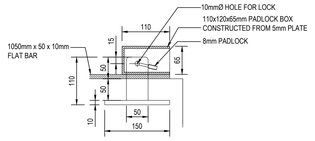
FILE No.



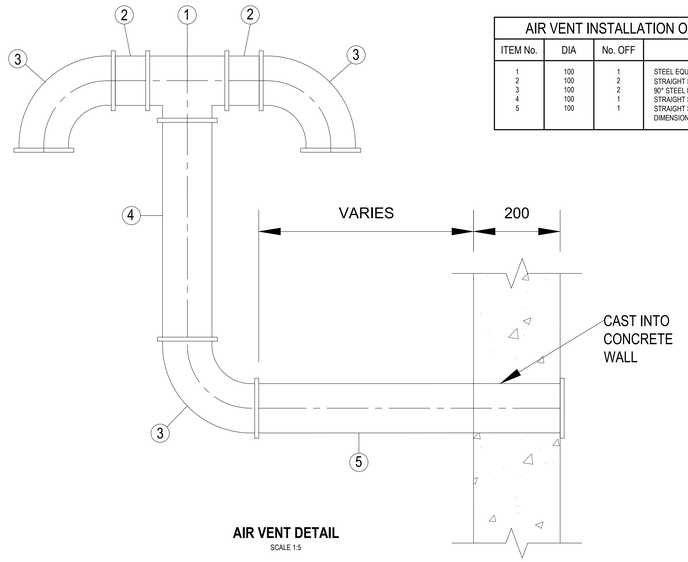
MANHOLE LOCKING DEVICE
SCALE 1:5



DETAIL 1
SCALE 1:5



DETAIL 2
SCALE 1:5

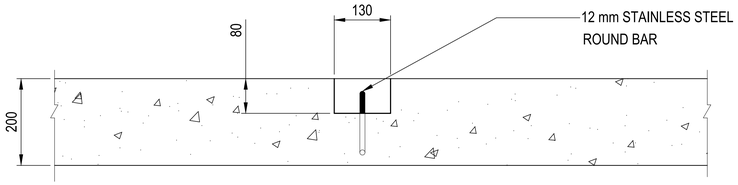


AIR VENT DETAIL
SCALE 1:5

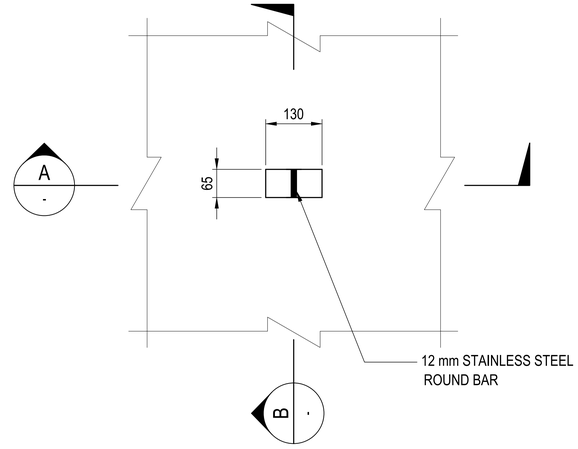
AIR VENT INSTALLATION ON SINGLE PIPE AND DOUBLE PIPE AIR VALVE CHAMBER			
ITEM No.	DIA	No. OFF	DESCRIPTION
1	100	1	STEEL EQUAL TEE PIECE, FEMALE THREADED BOTH ENDS, 96mm CENTER TO END
2	100	2	STRAIGHT STEEL PIPE, MALE THREADED BOTH ENDS, 89mm LONG
3	100	2	90° STEEL ELBOW, FEMALE THREADED BOTH ENDS, 165mm CENTER TO END
4	100	1	STRAIGHT STEEL PIPE, MALE THREADED BOTH ENDS, 504 mm LONG
5	100	1	STRAIGHT STEEL PIPE, MALE THREADED ONE END AND 250x250x10mm BASE PLATE WELDED WITH 100mmØ HOLE CUT IN ONE END. DIMENSION TO BE CONFIRMED ON SITE

GENERAL NOTES:

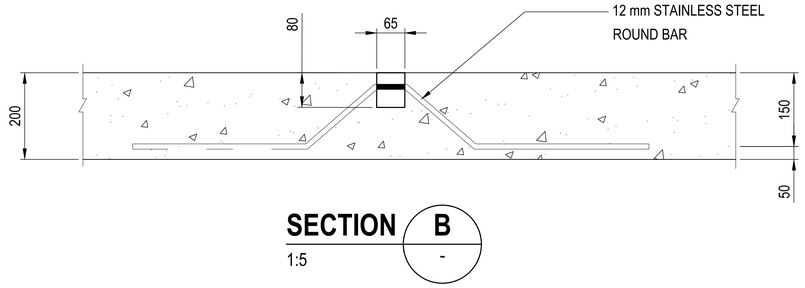
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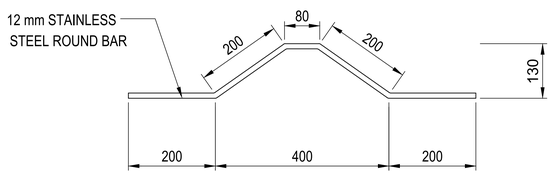
SECTION A - A
1:5



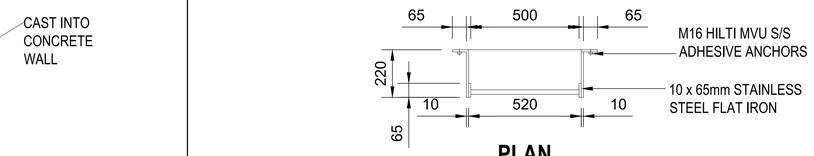
LIFTING HOOK
SCALE 1:10



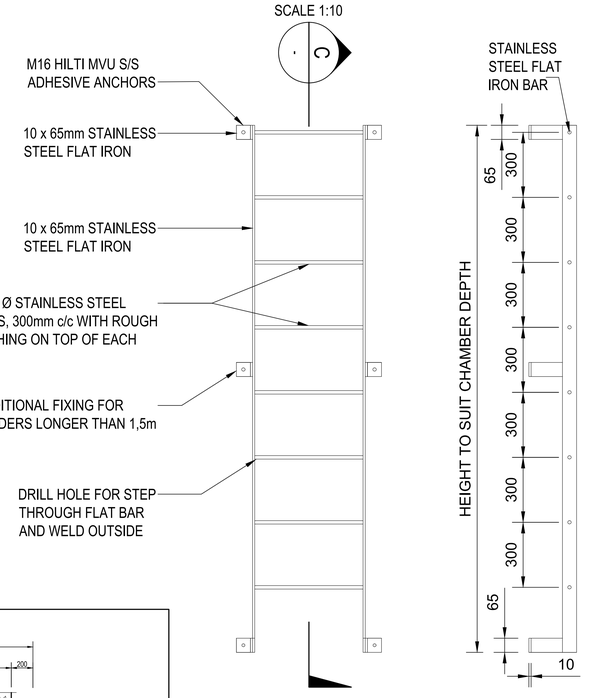
SECTION B - B
1:5



LIFTING HOOK
SCALE 1:5



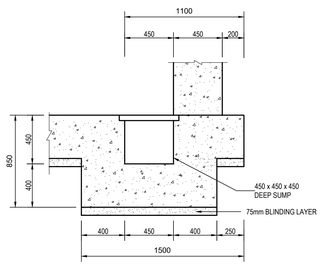
PLAN
SCALE 1:10



FRONT ELEVATION
SCALE 1:10

SECTION C-C
SCALE 1:10

STAINLESS STEEL ACCESS LADDER
SCALE 1:10



TYPICAL CROSS-SECTION OF CHAMBER SUMP
SCALE 1:20

CONSULTING ENGINEERS
ZUTARI IMPACT. ENGINEERED.
32A JELLICOE AVENUE
OXFORD CORNER
ROSEBANK
SOUTH AFRICA
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CLIENT
17 HARRISON STREET
MARSHALLTOWN
2107

DESIGNED	ZUT		29.01.2024
DRAWN	ZUT		29.01.2024
CHECKED	S. MNQONYWA		29.01.2024
APPROVED BY:	C. KAN	SIGNATURE	DATE
ECSA REG. No.			
CHECKED BY:		SIGNATURE	DATE
ECSA REG. No.			

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

TEL: (011) 688-1400
FAX: (011) 688-1529

Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

TYPICAL DETAILS AND STANDARDS
STEEL ACCESS LADDERS, STEEL STEPS, VENTS, LIFTING LUG AND MANHOLE COVER

APPROVAL BY JW DEPOT			SCALE
CHECKED			
APPROVED BY:			
	SIGNATURE	DATE	
APPROVAL BY JW PLANNING			
CHECKED			
APPROVED BY:			
	SIGNATURE	DATE	

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	29.01.2024

DRAWING No.

113503 - 3400-DRG-CC-0006 - T0
PROJECT No. | DRAWING No. | REV.

A0 ORIGINAL PAGE SIZE | SHEET 1 OF 1

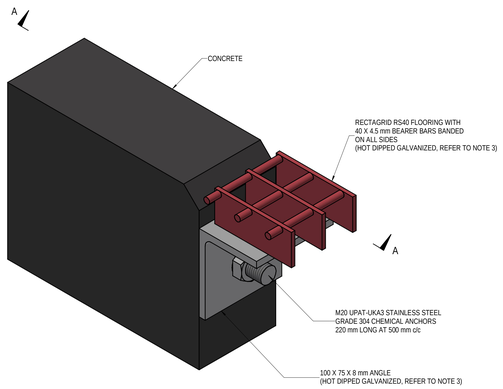
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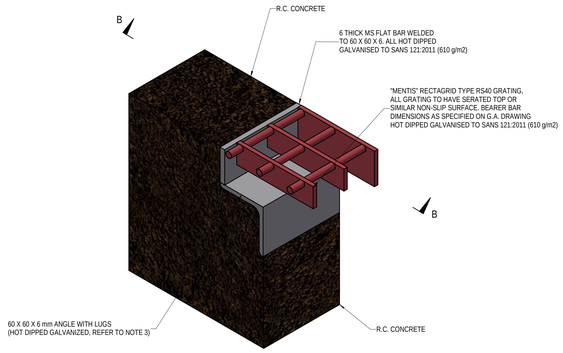
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4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
5. ALL STEEL BOLTS AND NUTS AND ANCHOR BOLTS INTO CONCRETE SHALL BE STAINLESS STEEL GRADE 304.
6. UNLESS OTHERWISE SHOWN, ALL STEEL WORK SHALL BE GALVANISED GRADE 350WA IN ACCORDANCE WITH SANS 50025

LEGEND

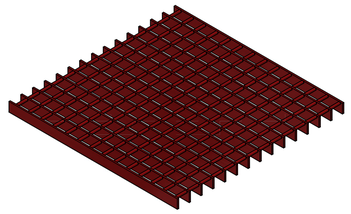
FFL: FINISHED FLOOR LEVEL
TOC: TOP OF CONCRETE



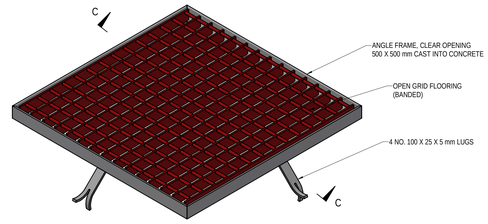
ISOMETRIC VIEW
N.T.S.
FLUSH SUPPORT FOR GRID COVERS



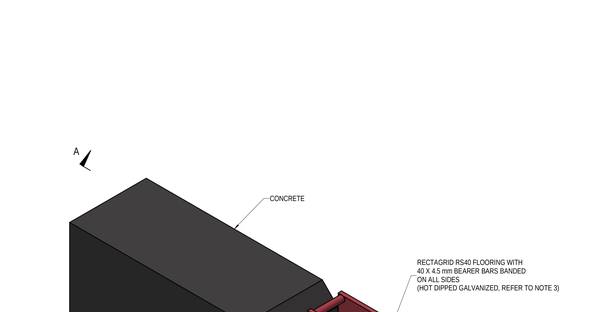
ISOMETRIC VIEW
N.T.S.
OPEN GRID COVERS/FLOORING



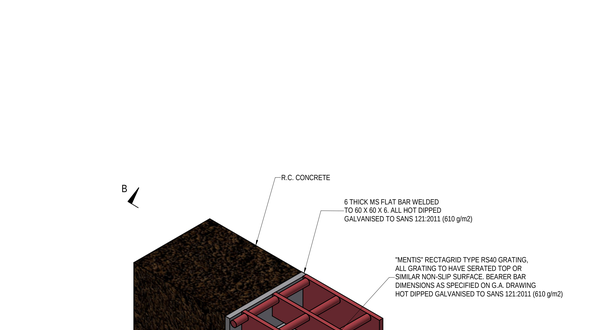
ISOMETRIC VIEW
N.T.S.
UNBANDED GRATING



ISOMETRIC VIEW
N.T.S.
CAST IN COVER AND FRAME
(HOT DIPPED GALVANISED)

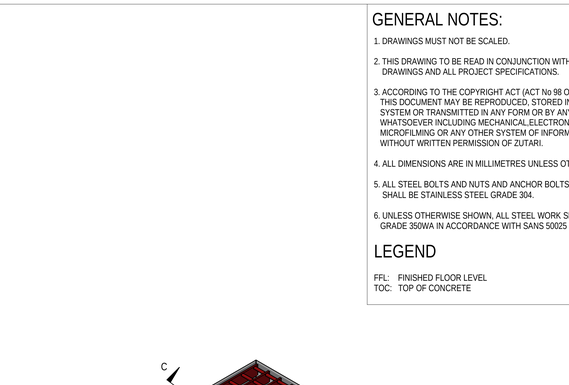


SECTION A
1:5



SECTION B
1:5

ISOMETRIC VIEW
N.T.S.
BANDED GRATING



SECTION C
1:5

CONSULTING ENGINEERS	DESIGNED	ZUT	31.01.24
ZUTARI IMPACT. ENGINEERED.	DRAWN	ZUT	31.01.24
	CHECKED	ZUT	31.01.24
	APPROVED BY:	S. MNQONYWA	31.01.24
		SIGNATURE	DATE
	ECSA REG No.		
CLIENT	CHECKED BY:		
		SIGNATURE	DATE
	ECSA REG No.		

32A JELLICOE AVENUE
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ROSEBANK
SOUTH AFRICA

17 HARRISON STREET
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Johannesburg Water

17 HARRISON STREET
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2107

TEL: (001) 688-1400

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Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

TYPICAL DETAILS
CAST IN COVER AND FRAMES

APPROVAL BY JW DEPOT		
CHECKED		
APPROVED BY:		
	SIGNATURE	DATE
APPROVAL BY JW PLANNING		
CHECKED		
APPROVED BY:		
	SIGNATURE	DATE

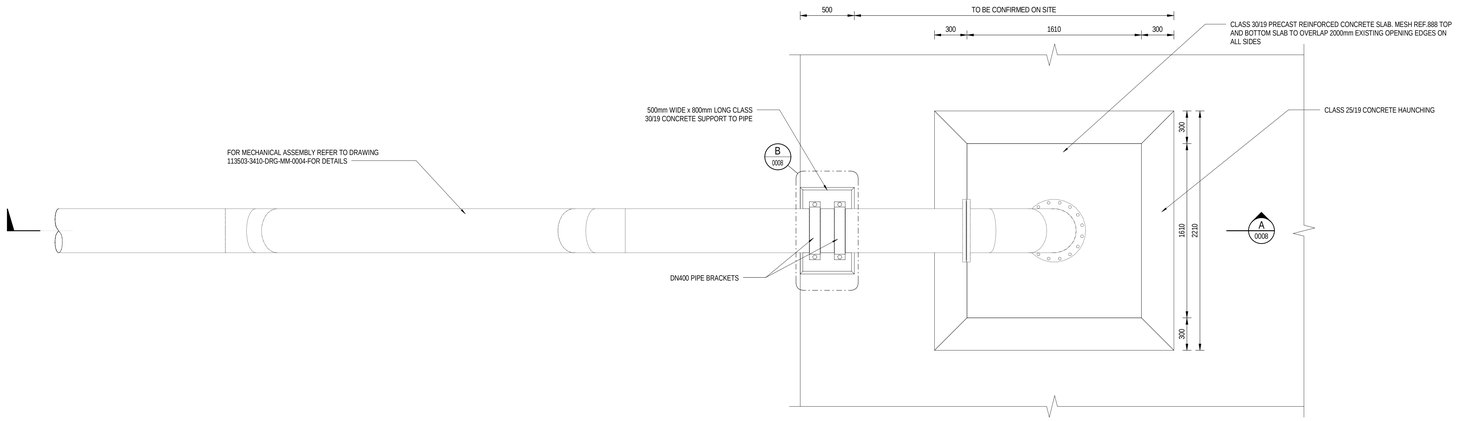
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AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	31.01.24

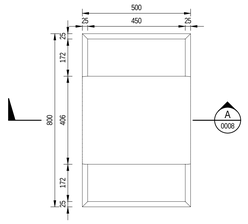
DRAWING No.

113503 - 3400-DRG-CC-0007 - T0
PROJECT No. DRAWING No. REV.

A0 ORIGINAL PAGE SIZE
SHEET 1 OF 1
DATE:
FILE No.



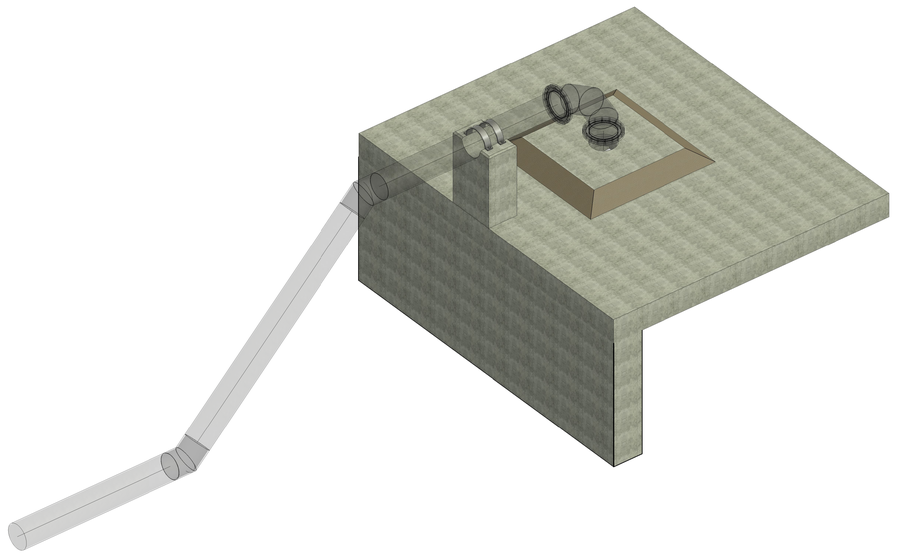
PLAN VIEW
SCALE 1 : 20



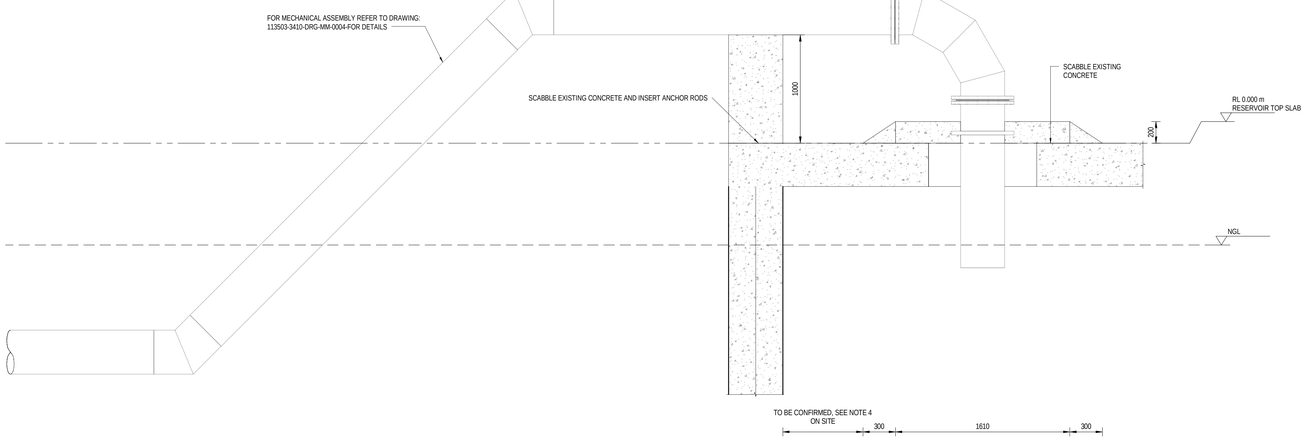
PLAN VIEW - CALLOUT B
SCALE 1 : 10

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3. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE GENERAL NOTES DRAWINGS AND ALL PROJECT SPECIFICATIONS.
4. THE CONTRACTOR SHALL SURVEY ALL ABOVE GROUND AND UNDERGROUND PIPES TO CONFIRM THE LEVELS AND SHALL PROVIDE SURVEY INFORMATION TO THE ENGINEER.
5. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN AND SHALL BE CHECKED BY THE CONTRACTOR BEFORE ORDERING ANY MATERIAL ANY DISCREPANCIES MUST BE REPORTED TO ENGINEER.
6. CONCRETE FINISHES SHALL BE AS FOLLOWS. EXCEPT WHERE OTHERWISE SHOWN:
   - SMOOTH SPECIAL TO SURFACES EXPOSED TO VIEW
   - ROUGH TO SURFACES AGAINST WHICH BACKFILL OR FURTHER CONCRETE WILL BE PLACED
   - FLOOR FINISHES INSIDE CHAMBERS AND PULP STATIONS TO BE WOOD FLOATED
7. INSULATION MATERIAL MUST BE PLACED BETWEEN DISSIMILAR METALS.
8. CONCRETE TO BE PLACED ON A 50 mm BLINDING LAYER
9. ALL BURIED SECTIONS OF STEEL PIPE, FLANGES AND BOLTS TO BE COVERED BY VISCO ELASTIC TAPE WITH PVC WRAPPING (STOPAQ OR SIMILAR APPROVED)
10. 28 DAY CONCRETE CUBE COMPRESSIVE STRENGTH
    - BLINDING LAYER: CLASS 15/19 15 MPa
    - FOOTINGS: CLASS 35/19 35 MPa
    - COLUMNS & WALLS: CLASS 35/19 35 MPa
    - SLABS: CLASS 35/19 35 MPa
11. PIPES THROUGH SLAB
    - POLYURETHANE APPLICATION AREA TO BE CLEAN, SOUND, FREE OF LOOSE PARTICLES, DUST, LAITANCE OILS AND OTHER CONTAMINANTS.
    - POLYURETHANE SEALANT TO BE APPLIED AROUND ENTIRE PIPE.
    - APPLICATION PROCEDURE TO BE ACCORDING TO MANUFACTURER SPECIFICATIONS.
12. ALL EXPOSED EXTERNAL EDGES IN CONCRETE WORK SHALL HAVE 20 mm x 20 mm CHAMFERS.
13. THE TOP OF THE CHAMBER NEEDS TO HAVE A SMOOTH FINISH TO ENSURE THE PRECAST COVER SEATS APPROPRIATELY.
14. ALL PIPEWORK IS INDICATIVE AND SHALL NOT BE MANUFACTURED FROM THIS DRAWING THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE PIPEWORK, VALVES AND SPECIALS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE DESIGN ENGINEER FOR APPROVAL BEFORE MANUFACTURING OR FABRICATION COMMENCES. THE DESIGN MUST BE IN ACCORDANCE WITH THE MECHANICAL SPECIFICATION.



ISOMETRIC VIEW
NTS



SECTION A
SCALE 1 : 20

CONSULTING ENGINEERS
ZUTARI IMPACT. ENGINEERED.
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CHECKED:	S. MNQONYWA		29.01.2024
APPROVED BY:	C.KAN		29.01.2024
	SIGNATURE		DATE
ECSA REG No:			
CHECKED BY:			
	SIGNATURE		DATE
ECSA REG No:			

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Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

TYPICAL DETAILS AND STANDARDS
CONNECTION DETAIL TO HURSTHILL RESERVOIR

APPROVAL BY JW DEPOT			SCALE
CHECKED:			AS SHOWN
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
APPROVED BY:			
	SIGNATURE BY:	DATE:	

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	29.01.24

DRAWING No.

113503 - 3400 - DRG - CC - 0008 - T0
PROJECT No. | DRAWING No. | REV.

A0 ORIGINAL PAGE SIZE | SHEET 1 OF 1

FILE No.

Filename: BWC-NW-113503- Bristow Robertson and Towse Africa/Pre in-detail Plan.rvt
Offset: CC
Plot Date: 2024/01/30 08:42:26

NOTES

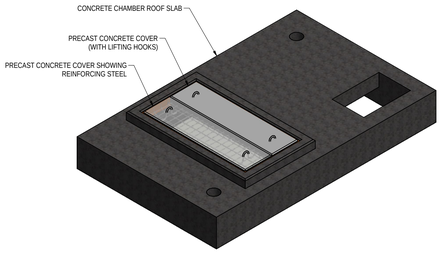
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
2. CONCRETE CLASSES SHALL BE AS FOLLOWS:
   30/19 TO ALL CONCRETE UNLESS OTHERWISE SHOWN.
   15/38 TO BLINDING AND MASS CONCRETE FILLING.
3. CONCRETE FINISHES SHALL BE AS FOLLOWS, EXCEPT WHERE OTHERWISE SHOWN:
   a) SMOOTH SPECIAL TO SURFACES AGAINST EXPOSED TO VIEW.
   b) ROUGH TO SURFACES AGAINST WHICH BACKFILL OR FURTHER CONCRETE WILL BE PLACED.
4. ALL EXPOSED CORNERS HAVE 20 mm x 20 mm CHAMFERS.
5. TOP OF SLAB MUST BE MARKED 'TOP'. THE CONTRACTOR MUST ENSURE THAT TOP FACE REMAIN UP DURING TRANSPORTATION, HANDLING, ERECTION AND STORING.
6. COVER TO REINFORCEMENT 30 mm

GENERAL NOTES:

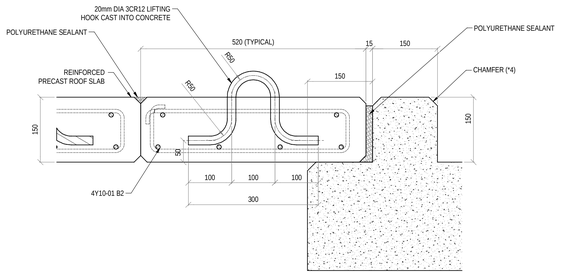
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4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
5. ALL STEEL BOLTS AND NUTS AND ANCHOR BOLTS INTO CONCRETE SHALL BE STAINLESS STEEL GRADE 304.
6. UNLESS OTHERWISE SHOWN, ALL STEEL WORK SHALL BE GALVANISED GRADE 350WA IN ACCORDANCE WITH SANS 50025

LEGEND

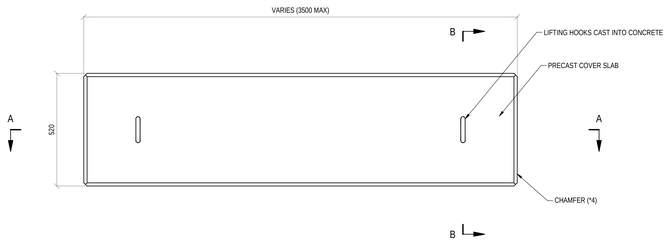
FFL: FINISHED FLOOR LEVEL
TOC: TOP OF CONCRETE



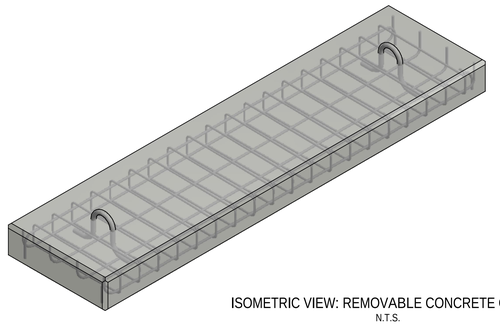
ISOMETRIC VIEW OF REMOVABLE COVER ON CHAMBER
N.T.S.



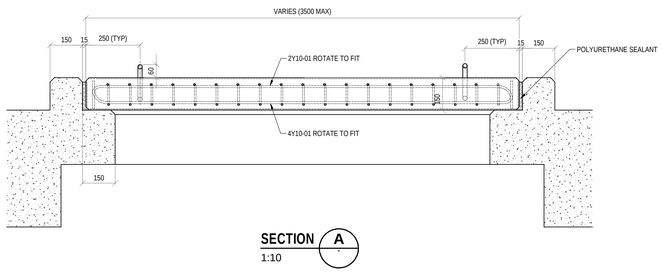
SECTION B-B
DETAIL OF LIFTING HOOKS CAST IN CONCRETE
SCALE 1 : 5



PLAN VIEW: REINFORCED PRECAST CONCRETE COVER SLAB
SCALE 1 : 10



ISOMETRIC VIEW: REMOVABLE CONCRETE COVER
N.T.S.



SECTION A
1:10

STANDARD DETAILS - PRE CAST COVER SLABS < 3.5m

MEMBER LOCATION	TYPE AND SIZE	MARK	No. OF MEMBERS	No. OF BARS	TOTAL BARS	CUTTING LENGTH	SHAPE CODE	A	B	C	D	E	E/R
1. L<2.5m	Y10	01	1	6	6	2650	35	2420*					
	8	02	1	25	25*	1300	60	100	460				
2. 2.5<L<3.0m	Y10	01	1	6	6	3150	35	2920*					
	8	02	1	30	30*	1300	60	100	460				
3. 3.0<L<3.5m	Y10	01	1	6	6	3650	35	3420*					
	8	02	1	35	35*	1300	60	100	460				

* - TO BE DETERMINED ON SITE

SUMMARY OF MASSES (kg)

	6	8	10	12	16	20	25	32	40	TOTAL
R	0	46	0	0	0	0	0	0	0	46
Y	0	0	35	0	0	0	0	0	0	35
TOT	0	46	35	0	0	0	0	0	0	81

BENDING AND CUTTING OF BARS SHALL COMPLY WITH SANS 282: 2004

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OXFORD CORNER
ROSEBANK
SOUTH AFRICA

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2107

DESIGNED	ZUT	31.01.24
DRAWN	ZUT	31.01.24
CHECKED	ZUT	31.01.24
APPROVED BY:	S.MNQONYWA	31.01.24
	SIGNATURE	DATE
ECSA REG No.		
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	SIGNATURE	DATE
ECSA REG No.		

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PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT
TYPICAL DETAILS
PRECAST COVER SLAB

APPROVAL BY JW DEPOT		
CHECKED		
APPROVED BY:		
	SIGNATURE	DATE
APPROVAL BY JW PLANNING		
CHECKED		
APPROVED BY:		
	SIGNATURE	DATE

SCALE: AS SHOWN

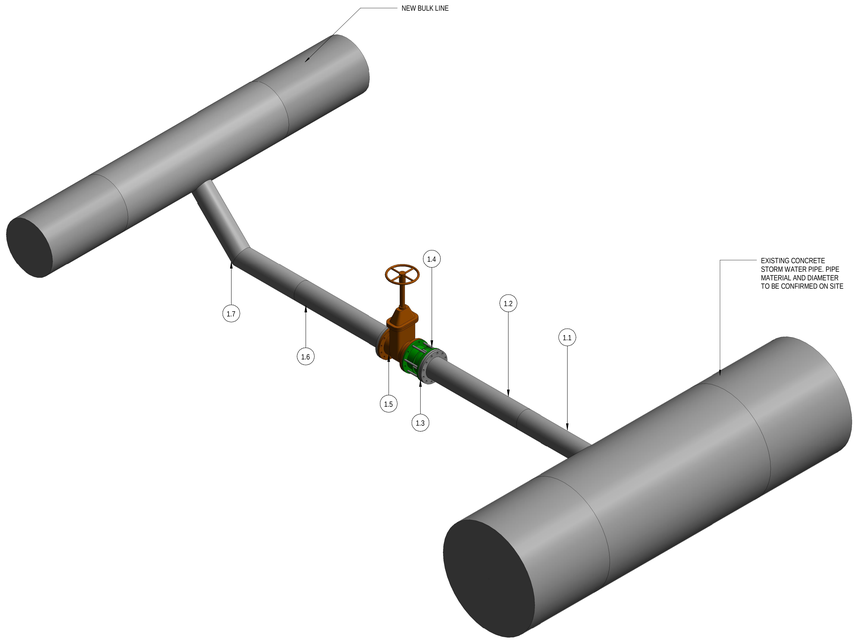
AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	31.01.24

DRAWING No.

113503 - 3400-DRG-CC-0009 - T0
PROJECT No. DRAWING No. REV.

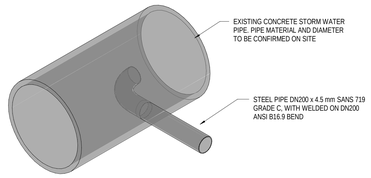
A0 ORIGINAL PAGE SIZE
SHEET 1 OF 1
FILE No. DATE:

PARTS LIST- DN200 SCOUR VALVE		
ITEM	QTY	PART DESCRIPTION
1.1	1	CUSTOM DN 800 x DN200 UNEQUAL TEE WITH MITERED BEND, UNFLANGED, DIMENSIONS TO BE CONFIRMED ON SITE
1.2	1	SPOOL PIECE DN200 x 4.5 mm; SANS 719 GRADE C; FLANGED ONE END SANS 1123 TABLE 1600/3 (FF) [1200 mm]
1.3	1	ORIFICE PLATE DN100; PN16
1.4	1	DISMANTLING JOINT DN200, FLANGED SANS 1123 TABLE 1600/3 (FF)
1.5	1	WEDGE GATE VALVE DN200 PN16; SANS 664 NON-RISING SPINDLE - SHORT PATTERN; FLANGED SANS 1123 TABLE 1600/1 (FF) 665-1
1.6	1	SPOOL PIECE DN200 x 4.5 mm; SANS 719 GRADE C; FLANGED ONE END SANS 1123 TABLE 1600/3 (FF) [1150 mm]
1.7	1	CUSTOM DN 600 x DN200 UNEQUAL TEE, UNFLANGED



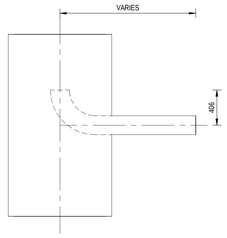
DN200 SCOUR VALVE- ISOMETRIC VIEW

NTS



ITEM 1.1- ISOMETRIC VIEW

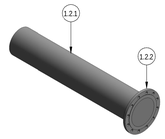
NTS



ITEM 1.1- PLAN VIEW

SCALE 1 : 25

PARTS LIST- ITEM 1.2		
ITEM	QTY	PART DESCRIPTION
1.2.1	1	STEEL PIPE DN200 SANS 719 GRADE C [1200 mm]
1.2.2	1	FLANGE DN200 SANS 1123 TABLE 1600/3 (FF)



ITEM 1.2 - ISOMETRIC VIEW

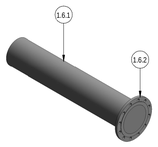
NTS



ITEM 1.2 - PLAN VIEW

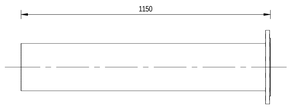
SCALE 1 : 10

PARTS LIST - ITEM 1.6		
ITEM	QTY	PART DESCRIPTION
1.6.1	1	STEEL PIPE DN200 SANS 719 GRADE C [1150 mm]
1.6.2	1	FLANGE DN400 SANS 1123 TABLE 1600/3 (FF)



ITEM 1.6 - ISOMETRIC VIEW

NTS

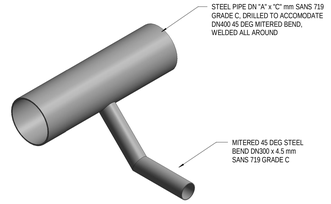


ITEM 1.6 - PLAN VIEW

SCALE 1 : 10

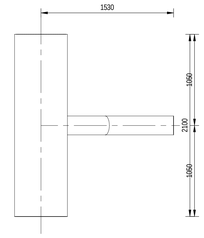
MECHANICAL NOTES

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3. ALL PIPEWORK IS INDICATIVE AND SHALL NOT BE MANUFACTURED FROM THIS DRAWING. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE PIPEWORK, VALVES AND SPECIALS. THE CONTRACTOR SHALL SUBMIT HIS DESIGN CALCULATIONS AND SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL BEFORE MANUFACTURING OR FABRICATION COMMENCES. THE DESIGN MUST BE IN ACCORDANCE WITH THE MECHANICAL SPECIFICATIONS.
4. THE CONTRACTOR SHALL SURVEY ALL ABOVE GROUND AND UNDERGROUD PIPES TO CONFIRM THE LEVELS AND SHALL PROVIDE SURVEY INFORMATION TO THE ENGINEER.
5. THE CONTRACTOR SHALL MAKE PROVISION FOR FITTING TO C&I CONNECTIONS, LOCAL DRAIN POINTS AND QUICK-COUPLING CONNECTION POINTS TO FLUSH THE LINE WITH COMPRESSED AIR.
6. ALL FLANGES AND FITTINGS BELOW GROUND SHALL BE COVERED WITH A VISCO-ELASTIC COATING (STOPAQ OR SIMILAR APPROVED) AND WRAPPED WITH PVC TAPE.
7. THE RESTRAINED FLANGE ADAPTORS AND FLANGES ON THE SUCTION AND DISCHARGE PIPEWORK SHALL MATCH THE PRESSURE CLASS AND DRILLING PARTTERN OF THE PUMP SET.
8. ANY DISCREPANCIES BETWEEN THE DRAWINGS, SPECIFICATIONS AND BILL OF QUANTITIES MUST BE REPORTED IMMEDIATELY TO THE ENGINEER.
9. REFER TO PARTICULAR SPECIFICATIONS FOR CORROSION PROTECTION.
10. ALL VALVES TO BE PROVIDED WITH LOCK OUT MECHANISMS.
11. SPOOL PIECES INSTALLED INSIDE A STRUCTURE OR BUILDING SHALL BE PROVIDED WITH APPROPRIATE LIFTING LUGS TO FIT LIFTING EQUIPMENT PROVIDED IN THE PUPM STATION.
12. ALLOW FOR FULL- FACE INSULATING GASKET KIT BETWEEN DISSIMILAR MATERIALS.
13. FOR PIPE ANCHOR SUPPORTS REFER TO STANDARD DETAIL DRAWING 113503-3410-DRG-MM-0003.
14. CONNECTION POINT INTO EXISTING STORM WATER PIPE IS TO BE REINSTATED AND TO BE WATERTIGHT.
15. DIAMETER "A" IS TO BE CONFIRMED ON SITE
16. FOR DIAMETER "B" AND PIPE WALL THICKNESS "C" REFER TO 113503-3200-DRG-CC-0005 AND 113503-3010-DRG-CC-0005



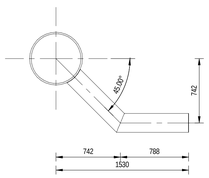
ITEM 1.7 - ISOMETRIC VIEW

NTS



ITEM 1.7 - PLAN VIEW

SCALE 1 : 25



ITEM 1.7 - SIDE VIEW

SCALE 1 : 25

CONSULTING ENGINEERS
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APPROVED BY:	C. KAN		31.01.2024
		SIGNATURE	DATE
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ECSA REG No:			

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PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
FROM CROSBY BELOW GROUND RESERVOIR TO HURSTHILL RESERVOIR COMPLEX

TYPICAL DETAILS AND STANDARDS
SCOUR VALVE CHAMBER

APPROVAL BY JW DEPOT			SCALE
CHECKED:			AS SHOWN
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
APPROVED BY:			
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AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	31.01.2024

DRAWING No.

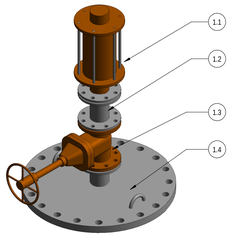
113503	-	3410-DRG-MM-0001	-	T0
PROJECT No.		DRAWING No.		REV.

A0 ORIGINAL PAGE SIZE — SHEET 1 OF 2

FILE No. BIM 360:/RA 113503- Bloton Reservoir and Tower Africa/113503_3000_TYPICAL_SCOUR_VALVE_CHAMBER.rvt

PARTS LIST - DN80 AIR VALVE

ITEM	QTY	PART DESCRIPTION
1.1	1	AIR VALVE DN80 PN 16 FLANGED WITH SCREWED STUDS FOR ALIGNMENT SANS 1123 TABLE 1600/3. VENT O MAT DOUBLE ORRIFICE OR SIMILAR APPROVED
1.2	1	SPOOL PIECE DN80; SANS 62 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1600/3 (RF) [80 mm]
1.3	1	GATE VALVE DN80 PN 16; SANS 664 NON RISING SPINDLE - SHORT PATTERN; FLANGED SANS 1123 TABLE 1600/3 (RF)
1.4	1	SPOOL PIECE DN80; SANS 62 GRADE C; FLANGED ONE END SANS 1123 TABLE 1600/3 (RF), OTHER END FITTED ON DN500 BLANK FLANGE DRILLED IN ACCORDANCE WITH SANS 1123 1600/3 (RF) AND CUT TO ACCOMMODATE DN80 STUB, [80 mm]

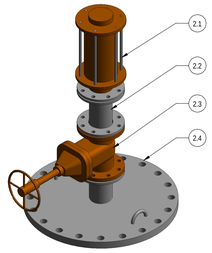


ISOMETRIC VIEW: DN80 AIR VALVE

NTS

PARTS LIST- DN100 AIR VALVE

ITEM	QTY	PART DESCRIPTION
2.1	1	AIR VALVE DN100 PN 16 FLANGED WITH SCREWED STUDS FOR ALIGNMENT SANS 1123 TABLE 1600/3. VENT O MAT DOUBLE ORRIFICE OR SIMILAR APPROVED
2.2	1	SPOOL PIECE DN100; SANS 62 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1600/3 (RF) [200 mm]
2.4	1	SPOOL PIECE DN100; SANS 62 GRADE C; FLANGED ONE END SANS 1123 TABLE 1600/3 (RF), OTHER END FITTED ON DN500 BLANK FLANGE DRILLED IN ACCORDANCE WITH SANS 1123 1600/3 (RF) AND CUT TO ACCOMMODATE DN100 STUB, [200 mm]
2.3	1	GATE VALVE DN100 PN 16; SANS 664 NON RISING SPINDLE - SHORT PATTERN; FLANGED SANS 1123 TABLE 1600/3 (RF)

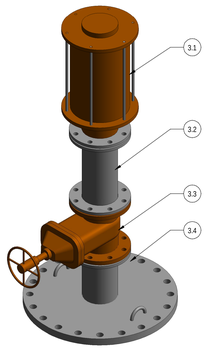


ISOMETRIC VIEW: DN100 AIR VALVE

NTS

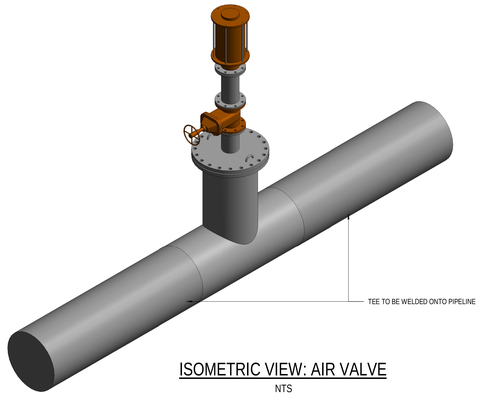
PARTS LIST- DN150 AIR VALVE

ITEM	QTY	PART DESCRIPTION
3.1	1	AIR VALVE DN150 PN 16 FLANGED WITH SCREWED STUDS FOR ALIGNMENT SANS 1123 TABLE 1600/3. VENT O MAT DOUBLE ORRIFICE OR SIMILAR APPROVED
3.2	1	SPOOL PIECE DN150; SANS 62 GRADE C; FLANGED BOTH ENDS SANS 1123 TABLE 1600/3 (RF) [300 mm]
3.3	1	GATE VALVE DN150 PN 16; SANS 664 NON RISING SPINDLE - SHORT PATTERN; FLANGED SANS 1123 TABLE 1600/3 (RF)
3.4	1	SPOOL PIECE DN150; SANS 62 GRADE C; FLANGED ONE END SANS 1123 TABLE 1600/3 (RF), OTHER END FITTED ON DN500 BLANK FLANGE DRILLED IN ACCORDANCE WITH SANS 1123 1600/3 (RF) AND CUT TO ACCOMMODATE DN100 STUB, [300 mm]



ISOMETRIC VIEW: DN150 AIR VALVE

NTS



ISOMETRIC VIEW: AIR VALVE

NTS

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NOTES:

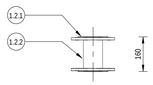
1. RE-INFORCEMENT STEEL SHALL BE MINIMUM OF 50mm CLEAR OF PUDDLE PIPE AND FLANGES.
2. ALL FLANGES TO BE DRILLED OFF-CENTRE TO SANS 1123 TABLE 1600/3 OR 2500/3 AS SPECIFIED IN SCHEDULE OF FITTINGS. CONNECTING FLANGE HOLES IN OPPOSITE FLANGES MUST BE IN LINE.
3. ALL STEELWORK TO BE FINISHED ACCORDING TO PROJECT SPECIFICATIONS.
4. ALL VALVES ACCORDING TO PROJECT SPECIFICATIONS.
5. ALL SPECIALS ACCORDING TO PROJECT SPECIFICATIONS.
6. ALL JOINTING BOLTS AND NUTS TO BE HOT-DIP GALVANISED.
7. A COMPLETE SET OF DETAILED SHOP DRAWINGS OF ALL FITTINGS MUST BE SUBMITTED FOR THE ENGINEER'S APPROVAL, PRIOR TO FABRICATION.

PARTS LIST- ITEM 1.2

ITEM	QTY	PART DESCRIPTION
1.2.1	2	FLANGE DN80 SANS 1123 TABLE 1600/3 (RF)
1.2.2	1	STEEL PIPE DN80 SANS 62 GRADE C [160 mm]

ISOMETRIC VIEW: ITEM 1.2

NTS



ELEVATION VIEW: ITEM 1.4

SCALE 1 : 10

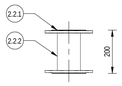
PARTS LIST- ITEM 2.2

ITEM	QTY	PART DESCRIPTION
2.2.1	2	FLANGE DN100 SANS 1123 TABLE 1600/3 (RF)
2.2.2	1	STEEL PIPE DN100 SANS 62 GRADE C [200 mm]



ISOMETRIC VIEW: ITEM 2.2

NTS



ELEVATION VIEW: ITEM 2.2

SCALE 1 : 10

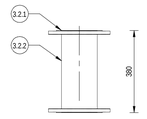
PARTS LIST- ITEM 3.2

ITEM	QTY	PART DESCRIPTION
3.2.1	2	FLANGE DN150 SANS 1123 TABLE 1600/3 (RF)
3.2.2	1	STEEL PIPE DN150 SANS 62 GRADE C [300 mm]



ISOMETRIC VIEW: ITEM 3.2

NTS

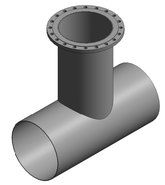


ELEVATION VIEW: ITEM 3.2

SCALE 1 : 10

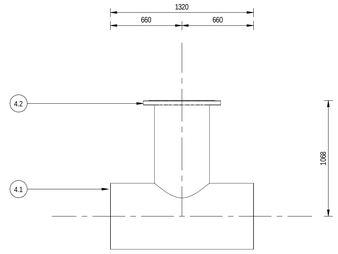
PARTS LIST- DN600 x DN500 REDUCING...

ITEM	QTY	PART DESCRIPTION
4.1	1	UNEQUAL TEE, DN "A" X "B" mm WELDED BOTH ENDS TO SPECIFICATION, FLANGED DN500 END IN ACCORDANCE WITH TABLE 1600/3 (RF)
4.2	1	FLANGE DN500 SANS 1123 TABLE 1600/3 (RF)



ISOMETRIC VIEW: DN600 x DN500 TEE

NTS



ELEVATION VIEW: D600 x DN500 TEE

SCALE 1 : 20

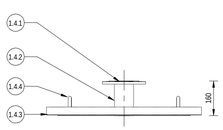
PARTS LIST- ITEM 1.4

ITEM	QTY	PART DESCRIPTION
1.4.1	1	FLANGE DN80 SANS 1123 TABLE 1600/3 (RF)
1.4.2	1	STEEL PIPE DN80 SANS 62 GRADE C [160 mm]
1.4.3	1	BLANK FLANGE DN500 DRILLED IN ACCORDANCE WITH SANS 1123 TABLE 1600/8 (RF) AND CUT TO ACCOMMODATE DN80 STUB (ITEM 1.4.2)
1.4.4	2	15 mm DIA MILD STEEL ROD - REFER TO LIFTING HOOK DETAIL ON DRAWING 113503-3400-DRG-CC-0007



ISOMETRIC VIEW: ITEM 1.4

NTS



ELEVATION VIEW: ITEM 1.4

SCALE 1 : 10

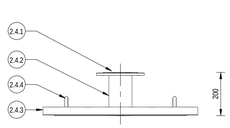
PARTS LIST- ITEM 2.4

ITEM	QTY	PART DESCRIPTION
2.4.1	1	FLANGE DN100 SANS 1123 TABLE 1600/3 (RF)
2.4.2	1	STEEL PIPE DN100 SANS 62 GRADE C [200 mm]
2.4.3	1	BLANK FLANGE DN500 DRILLED IN ACCORDANCE WITH SANS 1123 TABLE 1600/8 (RF) AND CUT TO ACCOMMODATE DN100 STUB (ITEM 2.4.2)
2.4.4	2	15 mm DIA MILD STEEL ROD - REFER TO LIFTING HOOK DETAIL ON DRAWING 113503-3400-DRG-CC-0007



ISOMETRIC VIEW: ITEM 2.4

NTS

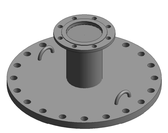


ELEVATION VIEW: ITEM 2.4

SCALE 1 : 10

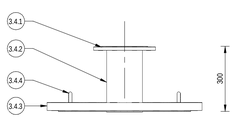
PARTS LIST- ITEM 3.4

ITEM	QTY	PART DESCRIPTION
3.4.1	1	FLANGE DN150 SANS 1123 TABLE 1600/3 (RF)
3.4.2	1	STEEL PIPE DN150 SANS 62 GRADE C [300 mm]
3.4.3	1	BLANK FLANGE DN500 DRILLED IN ACCORDANCE WITH SANS 1123 TABLE 1600/8 (RF) AND CUT TO ACCOMMODATE DN150 STUB (ITEM 3.4.2)
3.4.4	2	15 mm DIA MILD STEEL ROD - REFER TO LIFTING HOOK DETAIL ON DRAWING 113503-3400-DRG-CC-0007



ISOMETRIC VIEW: ITEM 3.4

NTS



ELEVATION VIEW: ITEM 3.4

SCALE 1 : 10

CONSULTING ENGINEERS

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2107

DESIGNED:	E. LOTTERING	29.01.2024
DRAWN:	E. LOTTERING	29.01.2024
CHECKED:	S. MNQONYWA	29.01.2024
APPROVED BY:	C. KAN	29.01.2024
	SIGNATURE	DATE
ECSA REG No:		
CHECKED BY:		
	SIGNATURE	DATE
ECSA REG No:		

Johannesburg Water

17 HARRISON STREET
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2107

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Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
RAND WATER CONNECTION TO CROSBY RESERVOIR PIPELINE

TYPICAL DETAILS AND STANDARDS
AIR VALVE CHAMBER

APPROVAL BY JW DEPOT			SCALE
CHECKED:			AS SHOWN
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
APPROVED BY:			
	SIGNATURE BY:	DATE:	

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	29.01.2024

DRAWING No.

113503 - 3410 - DRG - MM - 0002 - T0

PROJECT No. | DRAWING No. | REV.

A0 ORIGINAL PAGE SIZE | SHEET 1 OF 1

FILE No. BIM 380.0M-113503- Bindon Reservoir and Tower Africa\113503_3000_TYPICAL_AIR_VALVE_CHAMBER.rvt

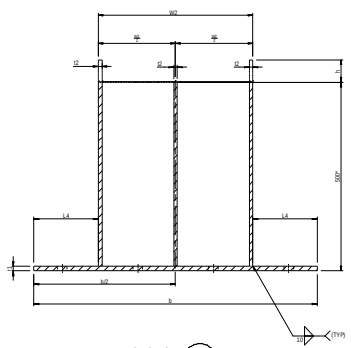
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GENERAL NOTES:

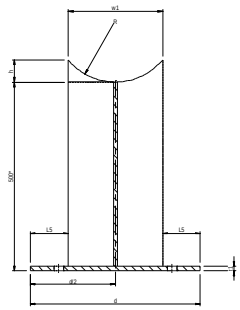
1. DRAWINGS MUST NOT BE SCALED.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE GENERAL NOTES DRAWINGS AND ALL PROJECT SPECIFICATIONS.
3. ACCORDING TO THE COPYRIGHT ACT (ACT No 98 OF 1978) NO PART OF THIS DOCUMENT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WHATSOEVER INCLUDING MECHANICAL,ELECTRONIC, PHOTOCOPYING, MICROFILMING OR ANY OTHER SYSTEM OF INFORMATION STORAGE WITHOUT WRITTEN PERMISSION OF ZUTARI.
4. ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS REQUIREMENTS.
5. ALL DIMENSIONS ARE IN MILLIMETER, UNLESS OTHERWISE SPECIFIED.
6. DO NOT SCALE FROM THESE DRAWINGS.
7. ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
8. THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS.
9. STEEL TO SANS 50025 GRADE 350 WA.
10. REMOVE ALL SHARP EDGES AND BURS.
11. FOR DETAILS REGARDING BOLTS AND FINXING DETAILS REFER TO GENERAL MECHANICAL SPECIFICATIONS.
12. ALL SUPPORTS TO BE MANUFACTURED FROM GRADE 350 WA (SANS 1431) STRUCTURAL STEEL AND HOT DIPPED GALVANIZED AS PER MECHANICAL SPECIFICATION.
13. HOLDING DOWN BOLT SIZE TO BE DETERMINED BY THE PUMP SUPPLIER.
14. ALL NUTS AND BOLTS TO BE GRADE 8.8, AS PER SPECIFICATION.
15. PROJECTION DIMENTION WILL BE DEPENDANT ON THE PUMP BASE PLATE.
16. BOLTS THREAD PROJECTION SHALL BE NO LESS THAN 1 THREAD AND NO MORE THAN 8 THREADS FROM THE HEAD OF THE NUTS WHEN FIXED.

NOTE

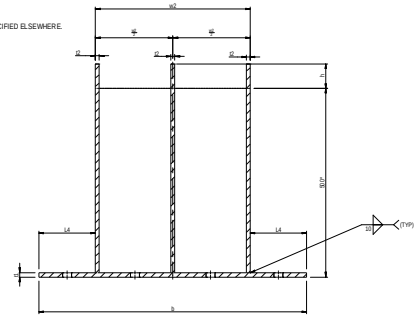
DIMENSION IS 500 mm OR AS SPECIFIED ELSEWHERE.



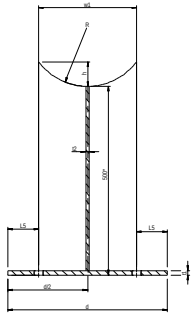
SECTION A
1:5



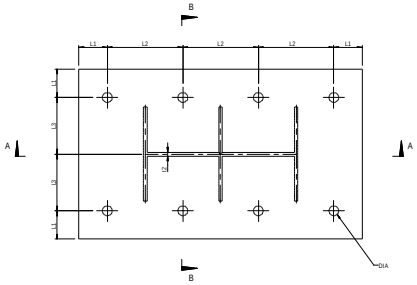
SECTION B
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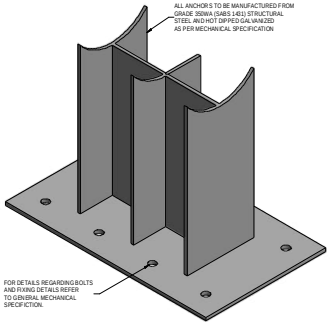
SECTION C
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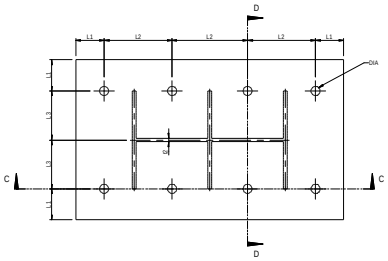
SECTION D
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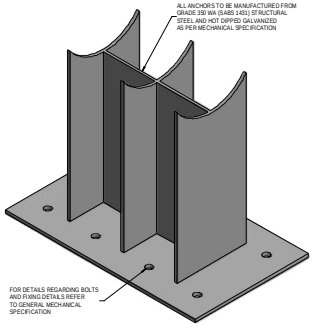
PLAN VIEW
1:5
ANCHOR TEE SUPPORT (SIDE OUTLET)



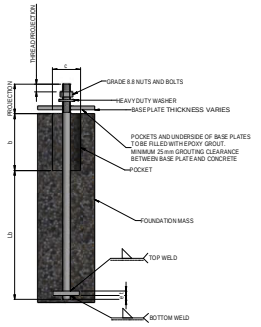
ISOMETRIC VIEW
N.T.S.
ANCHOR TEE SUPPORT (SIDE OUTLET)



PLAN VIEW
1:5
ANCHOR TEE SUPPORT (TOP OUTLET) / SPOOL ANCHOR



ISOMETRIC VIEW
N.T.S.
ANCHOR TEE SUPPORT (TOP OUTLET)/ SPOOL ANCHOR



HOLDING DOWN BOLT
1 : 5

ANCHOR TEE AND SPOOL SUPPORTS

Tee DN	b (mm)	d (mm)	t1 (mm)	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	L5 (mm)	DIA (mm)	CHEMICAL ANCHOR SIZE (GRADE 8.8)	h (mm)	w1 (mm)	w2 (mm)	t2 (mm)	R (mm)
50	350	200	10	45	130	55	95	75	Ø 14	M12	13	55	160	6	30.4
100	400	250	12	50	160	75	90	75	Ø 18	M16	30	100	220	8	57.45
150	650	300	16	95	190	95	185	75	Ø 22	M20	47	150	280	10	83.65
200	700	350	18	95	170	90	190	75	Ø 26	M24	65	200	320	12	109.55
250	750	400	20	90	190	110	185	75	Ø 26	M24	72	250	360	16	136.5
300	800	450	24	100	200	125	200	75	Ø 26	M24	90	300	400	18	161.95
350	850	500	24	100	210	150	215	75	Ø 26	M24	109	350	420	20	117.8
400	860	550	24	100	220	175	210	75	Ø 26	M24	124	400	440	20	203.2
450	900	580	25	110	227	180	230	75	Ø 32	M30	130	430	440	22	228.5
500	930	630	25	110	237	200	235	85	Ø 32	M30	140	450	460	24	254
550	960	650	30	115	244	210	240	90	Ø 32	M30	140	470	480	24	279.5
600	980	680	30	120	247	220	245	95	Ø 32	M30	140	490	490	25	305
700	1000	810	30	120	253	235	255	95	Ø 32	M30	170	620	490	25	356
800	1000	895	30	120	253	328	255	95	Ø 32	M30	200	705	490	25	406
900	1000	980	30	120	253	370	255	95	Ø 32	M30	230	790	490	25	457
1000	1000	1070	30	120	253	415	255	95	Ø 32	M30	250	880	490	25	508

HOLDING DOWN BOLT SIZING

BOLT SHANK DIA.	BOLT NUT SIZE	BOLT BOND LENGTH	BOLT PROTRUSION	ANCHOR PLATE SIZE	ANCHOR PLATE THICKNESS	ANCHOR PLATE HOLE DIA	ANCHOR PLATE WELD SIZE UNDERSIDE	ANCHOR PLATE WELD SIZE TOP SIDE	POCKET DEPTH	POCKET DIA
		L5	c	a	t				b	c
20	M20	330	10	70	12	21.5	6	-	150	75
24	M24	384	12	80	14	25.5	6	-	200	75
30	M30	480	12	110	14	32	8	6	250	100
39	M39	640	12	130	16	42	8	6	300	100
42	M42	720	16	140	20	47	6	6	-	-
48	M48	800	20	180	22	52	8	8	-	-
56	M56	960	20	200	25	62	8	8	-	-
64	M64	1040	25	230	30	67	10	10	-	-
72	M72	1200	30	260	35	77	10	10	-	-

CONSULTING ENGINEERS
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IMPACT. ENGINEERED.
32A JELLICOE AVENUE
OXFORD CORNER
ROSEBANK
SOUTH AFRICA

CLIENT
17 HARRISON STREET
MARSHALLTOWN
2107

DESIGNED	ZUT		31.01.24
DRAWN	ZUT		31.01.24
CHECKED	ZUT		31.01.24
APPROVED BY:	S. MNQONYWA		31.01.24
	SIGNATURE		DATE
ECSA REG No.			
CHECKED BY:			
	SIGNATURE		DATE
ECSA REG No.			

Johannesburg Water

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FAX: (011) 688-1529

Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT
TYPICAL DETAILS
PIPE SUPPORT DETAILS

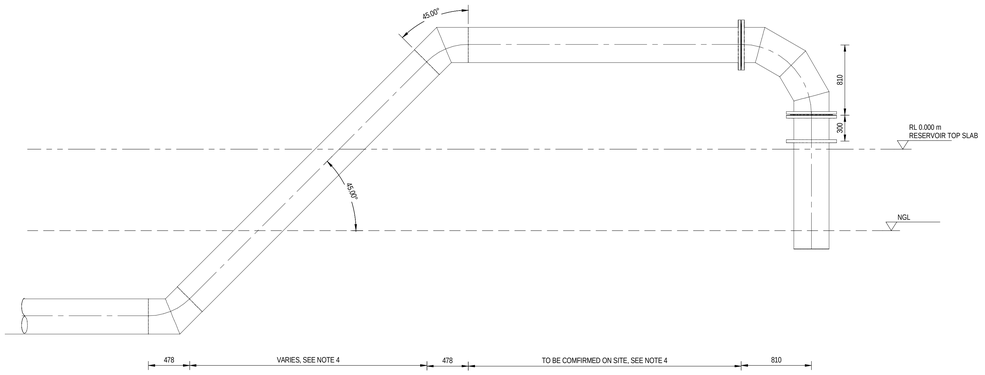
APPROVAL BY JW DEPOT			SCALE
CHECKED			AS SHOWN
APPROVED BY:			
	SIGNATURE	DATE	
APPROVAL BY JW PLANNING			
CHECKED			
APPROVED BY:			
	SIGNATURE	DATE	

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	31.01.24

DRAWING No.

113503 - 3410-DRG-MM-0003 - T0
PROJECT No. DRAWING No. REV.

A0 ORIGINAL PAGE SIZE
SHEET 1 OF 1
DATE:
FILE No.

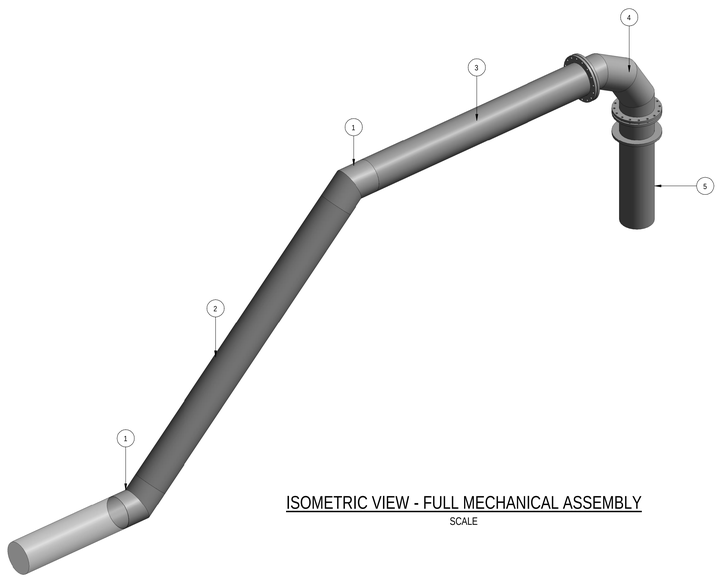


ELEVATION VIEW

SCALE 1 : 25

ASSEMBLY LIST

ASSEMBLY	QTY	ASSEMBLY DESCRIPTION
1	2	DN 400 x 6 mm 45 DEGREE MEDIUM RADIUS (2xD) BEND TO SANS 719 GRADE C: WELDED ON BOTH ENDS
2	1	DN 400 x 6 mm SPOOL PIECE TO SANS 719 GRADE C; WELDED ON BOTH ENDS
3	1	DN 400 x 6 mm SPOOL PIECE TO SANS 719 GRADE C; ONE END FLANGED TO SANS 1123 TABLE 1600/3 (RF), OTHER END WELDED
4	1	DN 400 x 6 mm 90 DEGREE MEDIUM RADIUS (2xD) BEND TO SANS 719 GRADE C: FLANGED ON BOTH ENDS TO SANS 1123 TABLE 1600/3 (RF)
5	1	DN 400 x 6 mm SPOOL PIECE TO SANS 719 GRADE C; ONE END FLANGED TO SANS 1123 TABLE 1600/3 (RF) DISTANCE PIECE CUT TO SUIT CAST INTO PRECAST CONCRETE SLAB

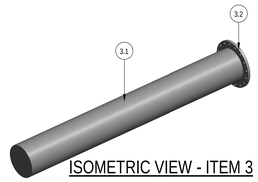


ISOMETRIC VIEW - FULL MECHANICAL ASSEMBLY

SCALE

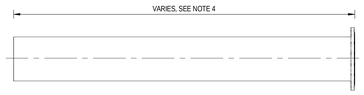
PARTS LIST - ITEM 3

ITEM	QTY	PART DESCRIPTION
3.1	1	DN 400 x 6mm SPOOL PIECE TO SANS 719 GRADE C
3.2	1	DN 400 PN 16 FLANGE TO SANS 1123 TABLE 1600/3 (RF)



ISOMETRIC VIEW - ITEM 3

NTS



SIDE VIEW - ITEM 3

SCALE 1 : 20

GENERAL NOTES:

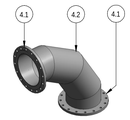
1. DRAWINGS MUST NOT BE SCALED.
2. ALL PIPEWORK IS INDICATIVE AND SHALL NOT BE MANUFACTURED FROM THIS DRAWING. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE PIPEWORK, VALVES AND SPECIALS. THE CONTRACTOR SHALL SUBMIT DESIGN CALCULATIONS AND SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL BEFOR MANUFACTURING OR FABRICATION COMMENCES. THE DESIGN MUST BE IN ACCORDANCE WITH THE MACHANICAL SPECIFICATIN.
3. ACCORDING TO THE COPYRIGHT ACT (ACT No 98 OF 1978) NO PART OF THIS DOCUMENT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WHATSOEVER INCLUDING MECHANICAL, ELECTRONIC, PHOTOCOPYING, MICROFILMING OR ANY OTHER SYSTEM OF INFORMATION STORAGE WITHOUT WRITTEN PERMISSION OF ZUTARI.
4. THE CONTRUCTOR SHALL SURVEY ALL ABOVE GROUND AND UNDERGROUND PIPES TO CONFIRM LEVELS AND SHALL PROVIDE SURVEY INFORMATION TO THE ENGINEER.
5. THE CONTRACTOR SHALL MAKE PROVISION FOR FITTINGS TO C&I CONNECTIONS, LOCAL DRAIN POINS AND QUICK-COUPLING CONNECTION POINTS TO FLUSH THE LINE WITH COMPRESSED AIR.
6. ALL FLANGES AND FITTINGS BELOW GROUND SHALL BE COVERED WITH A VISCO-ELASTIC COATING (STOPAQ OR SIMILAR APPROVED) AND WRAPPED WITH PVC TAPE.
7. THE RESTRAINED FLANGE ADAPTORS AND FLANGES ON THE SUCTION AND DISCHARGE PIPEWORK SHALL MATCH THE PRESSURE CLASS AND DRILLING PATTERN OF THE PUMP SET.
8. ANY DISCREPANCIES BETWEEN THE DRAWINGS, SPECIFICATIONS AND BILL OF QUANTITIES MUST BE REPORTED IMMEDIATELY TO THE ENGINEER.

NOTES:

1. RE-INFORCEMENT STEEL SHALL BE MINIMUM OF 50mm CLEAR OF PUDDLE PIPE AND FLANGES.
2. ALL FLANGES TO BE DRILLED OFF-CENTRE TO SANS 1123 TABLE 1600/3 OR 2500/3 AS SPECIFIED IN SCHEDULE OF FITTINGS. CONNECTING FLANGE HOLES IN OPPOSITE FLANGES MUST BE IN LINE.
3. ALL STEELWORK TO BE FINISHED ACCORDING TO PROJECT SPECIFICATIONS.
4. ALL VALVES ACCORDING TO PROJECT SPECIFICATIONS.
5. ALL SPECIALS ACCORDING TO PROJECT SPECIFICATIONS.
6. ALL JOINTING BOLTS AND NUTS TO BE HOT-DIP GALVANISED.
7. A COMPLETE SET OF DETAILED SHOP DRAWINGS OF ALL FITTINGS MUST BE SUBMITTED FOR THE ENGINEER'S APPROVAL, PRIOR TO FABRICATION.
8. CONNECTION POINT INTO EXISTING STORM WATER PIPE IS TO BE REINSTATED AND TO BE WATERTIGHT.

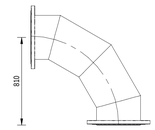
PARTS LIST - ITEM 4

ITEM	QTY	PART DESCRIPTION
4.1	2	DN 400 PN 16 FLANGE TO SANS 1123 TABLE 1600/3 (RF)
4.2	1	DN 400 x 6mm 90 DEGREE MEDIUM RADIUS (2xD) BEND TO SANS 719 GRADE C



ISOMETRIC VIEW - ITEM 4

NTS

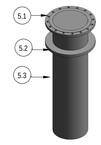


SIDE VIEW - ITEM 4

SCALE 1 : 20

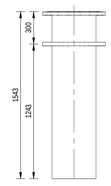
PARTS LIST - ITEM 5

ITEM	QTY	PART DESCRIPTION
5.1	1	DN 400 PN 16 FLANGE TO SANS 1123 TABLE 1600/3 (RF)
5.2	1	DN 400 PN 16 PUDDLE FLANGE TO SANS 1123 TABLE 1600/8
5.3	1	DN 400 x 6mm SPOOL PIECE TO SANS 719 GRADE C



ISOMETRIC VIEW - ITEM 5

NTS



SIDE VIEW - ITEM 5

SCALE 1 : 20

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2107

DESIGNED:	L. GWIJI	29.01.2024	
DRAWN:	L. GWIJI	29.01.2024	
CHECKED:	S. MNQONYWA	29.01.2024	
APPROVED BY:	C. KAN	29.01.2024	
	SIGNATURE	DATE	
ECSA REG No:			
CHECKED BY:			
	SIGNATURE	DATE	
ECSA REG No:			

Johannesburg Water

17 HARRISON STREET
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Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

TYPICAL DETAILS AND STANDARDS
CONNECTION DETAIL TO HURSTHILL RESERVOIR

APPROVAL BY JW DEPOT			SCALE
CHECKED:			AS SHOWN
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
APPROVED BY:			
	SIGNATURE BY:	DATE:	

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	29.01.24

DRAWING No.

113503 - 3410 - DRG - MM - 0004 - T0

PROJECT No. DRAWING No. REV.

A0 ORIGINAL PAGE SIZE

SHEET 1 OF 1

FILE No.

Filename: Brief 3410-MM-113503- Bloukon Reservoire and Tower #4\ut\Pw pr detail Pipe.dwt
Office: Mid
Plot Date: 2024/02/05 07:59:26

GENERAL NOTES

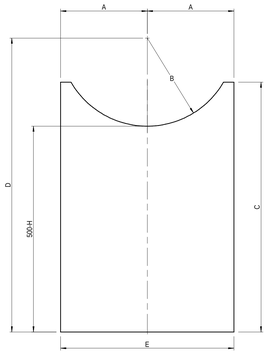
1. ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS REQUIREMENTS.
2. ALL DIMENSIONS ARE IN MILLIMETER, UNLESS OTHERWISE SPECIFIED.
3. DO NOT SCALE FROM THESE DRAWINGS.
4. ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
5. THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS.
6. STEEL TO SANS 50025 GR350WA.
7. REMOVE ALL SHARP EDGES AND BURS.
8. FOR DETAILS REGARDING BOLTS AND FINXING DETAILS REFER TO GENERAL MECHANICAL SPECIFICATIONS.
9. ALL SUPPORTS TO BE MANUFACTURED FROM GRADE 350WA (SANS 1431) STRUCTURAL STEEL AND HOT DIPPED GALVANIZED AS PER MECHANICAL SPECIFICATION.

GENERAL NOTES:

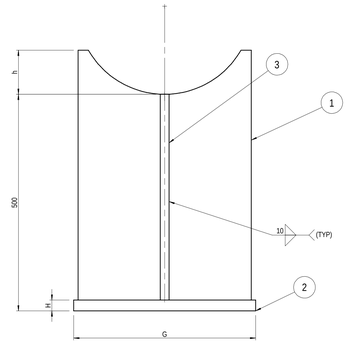
1. DRAWINGS MUST NOT BE SCALED.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE GENERAL NOTES DRAWINGS AND ALL PROJECT SPECIFICATIONS.
3. ACCORDING TO THE COPYRIGHT ACT (ACT No 98 OF 1978) NO PART OF THIS DOCUMENT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WHATSOEVER INCLUDING MECHANICAL,ELECTRONIC, PHOTOCOPYING, MICROFILMING OR ANY OTHER SYSTEM OF INFORMATION STORAGE WITHOUT WRITTEN PERMISSION OF ZUTARI.
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
5. ALL STEEL BOLTS AND NUTS AND ANCHOR BOLTS INTO CONCRETE SHALL BE STAINLESS STEEL GRADE 304.
6. UNLESS OTHERWISE SHOWN, ALL STEEL WORK SHALL BE GALVANISED GRADE 350WA IN ACCORDANCE WITH SANS 50025

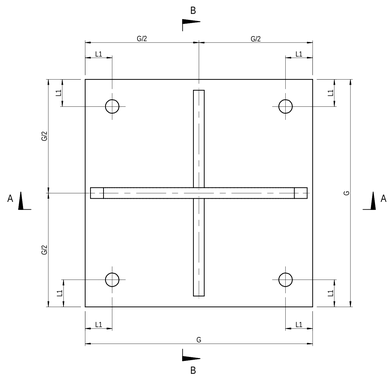
LEGEND

FFL: FINISHED FLOOR LEVEL
TOC: TOP OF CONCRETE

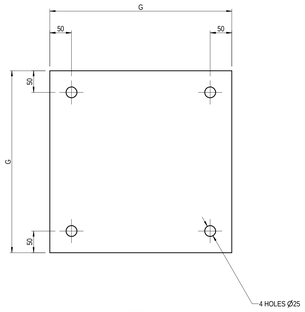


ITEM 1
SCALE 1 : 5

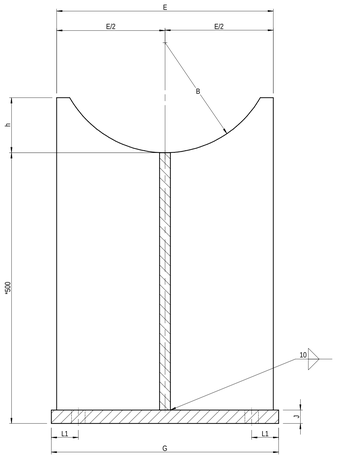




PLAN VIEW
1:4

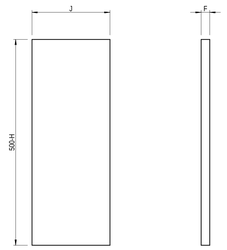


ITEM 2
SCALE 1 : 5

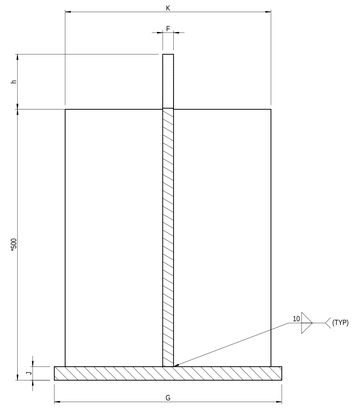


SECTION A
1:4

ISOMETRIC VIEW
N.T.S.



ITEM 3
SCALE 1 : 5



SECTION B
1:4

NOTE

DIMENSION IS 500 mm OR AS SPECIFIED ELSEWHERE.

DIMENSIONS TABLE

PIPE SIZE	B	E	F	G	J	K	L1 (mm)	DIA (mm)	CHEMICAL ANCHOR SIZE (GRADE 8.8)	h (mm)
DN 100	R 58	200	15	250	15	100	50	Ø 18	M16	13
DN 150	R 84	250	15	300	15	120	85	Ø 22	M20	30
DN 200	R 110	280	20	360	25	150	95	Ø 26	M24	47
DN 250	R 137	340	20	360	25	150	90	Ø 26	M24	65
DN 300	R 162	340	20	360	25	150	100	Ø 26	M24	72
DN 350	R 178	380	20	420	25	180	100	Ø 26	M24	109
DN 400	R 203	400	20	420	25	180	100	Ø 26	M24	124
DN 450	R 229	435	25	450	30	205	110	Ø 32	M30	130
DN 500	R 254	445	25	480	30	210	110	Ø 32	M30	140
DN 550	R 260	475	25	520	30	225	115	Ø 32	M30	140
DN 600	R 305	515	25	550	30	230	120	Ø 32	M30	140

CONSULTING ENGINEERS
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OXFORD CORNER
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CLIENT
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2107

DESIGNED	ZUT	31.01.24	
DRAWN	ZUT	31.01.24	
CHECKED	ZUT	31.01.24	
APPROVED BY:	R.BARRY	31.01.24	
	SIGNATURE	DATE	
ECSA REG No.			
CHECKED BY:			
	SIGNATURE	DATE	
ECSA REG No.			

Johannesburg Water

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Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT
TYPICAL DETAILS AND STANDARDS
PIPE SINGLE SUPPORT

APPROVAL BY JW DEPOT		
CHECKED		
APPROVED BY:		
	SIGNATURE	DATE
APPROVAL BY JW PLANNING		
CHECKED		
APPROVED BY:		
	SIGNATURE	DATE

SCALE: AS SHOWN

REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	31.01.24

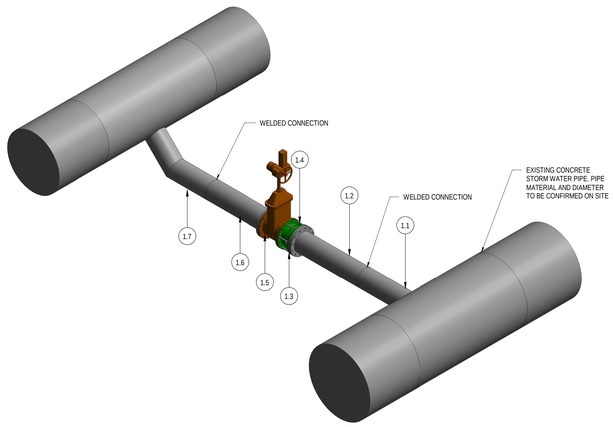
DRAWING No.

113503 - 3410-DRG-MM-0005 - T0
PROJECT No. DRAWING No. REV.

A0 ORIGINAL PAGE SIZE
SHEET 1 OF 1
DATE:
FILE No.

PARTS LIST - DN300 SCOUR VALVE

ITEM	QTY	PART DESCRIPTION
1.1	1	CUSTOM DN1000 x DN300 UNEQUAL TEE WITH MITERED BEND, UNFLANGED, DIMENSIONS TO BE CONFIRMED ON SITE
1.2	1	SPOOL PIECE DN300 x 4.5 mm; SANS 719 GRADE C; FLANGED ONE END SANS 1123 TABLE 1600/3 (FF) [1233 mm]
1.3	1	ORIFICE PLATE DN300; PN16
1.4	1	DISMANTLING JOINT DN300, FLANGED SANS 1123 TABLE 1600/3 (FF)
1.5	1	DN300 PN16 GATE VALVE (WEDGE) ; MANUALLY ACTUATED, SANS 664 NON-RISING SPINDLE - SHORT PATTERN WITH GEARBOX ; FLANGED SANS 1123 TABLE 1600/3 (FF)
1.6	1	SPOOL PIECE DN300 x 4.5 mm; SANS 719 GRADE C; FLANGED ONE END SANS 1123 TABLE 1600/3 (FF) [1095 mm]
1.7	1	CUSTOM DN1000 x DN300 UNEQUAL TEE, UNFLANGED

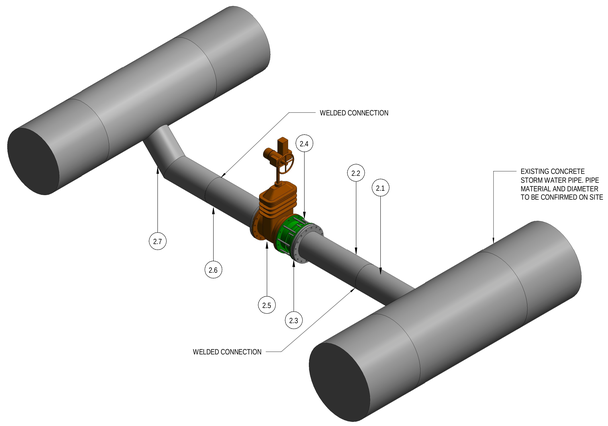


DN300 SCOUR VALVE - ISOMETRIC VIEW

NTS

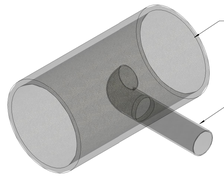
PARTS LIST - DN400 SCOUR VALVE

ITEM	QTY	PART DESCRIPTION
2.1	1	CUSTOM DN1000 x DN400 UNEQUAL TEE WITH MITERED BEND, UNFLANGED, DIMENSIONS TO BE CONFIRMED ON SITE
2.2	1	SPOOL PIECE DN400 x 4.5 mm; SANS 719 GRADE C; FLANGED ONE END SANS 1123 TABLE 1600/3 (FF) [1145 mm]
2.3	1	ORIFICE PLATE DN400; PN16
2.4	1	DISMANTLING JOINT DN400, FLANGED SANS 1123 TABLE 1600/3 (FF)
2.5	1	DN400 PN16 GATE VALVE (WEDGE) ; MANUALLY ACTUATED, SANS 664 NON-RISING SPINDLE - SHORT PATTERN WITH GEARBOX ; FLANGED SANS 1123 TABLE 1600/3 (FF)
2.6	1	SPOOL PIECE DN400 x 4.5 mm; SANS 719 GRADE C; FLANGED ONE END SANS 1123 TABLE 1600/3 (FF) [1005 mm]
2.7	1	CUSTOM DN1000 x DN400 UNEQUAL TEE, UNFLANGED



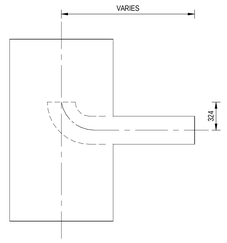
DN400 SCOUR VALVE - ISOMETRIC VIEW

NTS



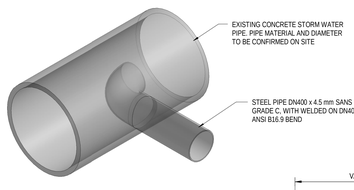
ITEM 1.1 - ISOMETRIC VIEW

NTS



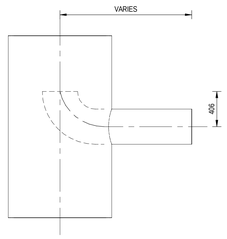
ITEM 1.1 - PLAN VIEW

SCALE 1 : 25



ITEM 2.1 - ISOMETRIC VIEW

NTS

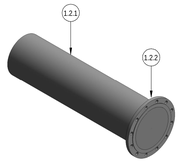


ITEM 2.1 - PLAN VIEW

SCALE 1 : 25

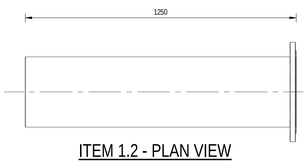
PARTS LIST - ITEM 1.2

ITEM	QTY	PART DESCRIPTION
1.2.1	1	STEEL PIPE DN300 SANS 719 GRADE C [1250 mm]
1.2.2	1	FLANGE DN300 SANS 1123 TABLE 1600/3 (FF)



ITEM 1.2 - ISOMETRIC VIEW

NTS

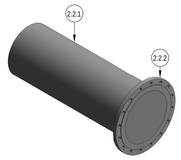


ITEM 1.2 - PLAN VIEW

SCALE 1 : 10

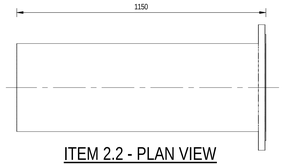
PARTS LIST - ITEM 2.2

ITEM	QTY	PART DESCRIPTION
2.2.1	1	STEEL PIPE DN400 SANS 719 GRADE C [1150 mm]
2.2.2	1	FLANGE DN400 SANS 1123 TABLE 1600/3 (FF)



ITEM 2.2 - ISOMETRIC VIEW

NTS

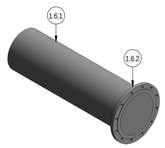


ITEM 2.2 - PLAN VIEW

SCALE 1 : 10

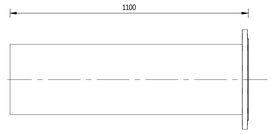
PARTS LIST - ITEM 1.6

ITEM	QTY	PART DESCRIPTION
1.6.1	1	STEEL PIPE DN300 SANS 719 TABLE 1600/03 GRADE C [1100 mm]
1.6.2	1	FLANGE DN300 SANS 1123 TABLE 1600/3 (FF)



ITEM 1.6 - ISOMETRIC VIEW

NTS

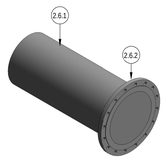


ITEM 1.6 - PLAN VIEW

SCALE 1 : 10

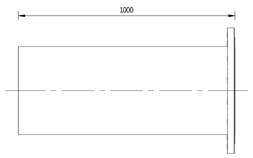
PARTS LIST - ITEM 2.6

ITEM	QTY	PART DESCRIPTION
2.6.1	1	STEEL PIPE DN400 SANS 719 GRADE C [1000 mm]
2.6.2	1	FLANGE DN400 SANS 1123 TABLE 1600/3 (FF)



ITEM 2.6 - ISOMETRIC VIEW

NTS

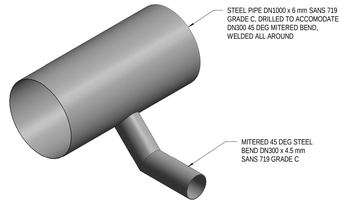


ITEM 2.6 - PLAN VIEW

SCALE 1 : 10

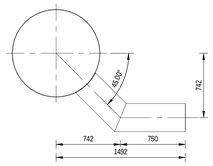
MECHANICAL NOTES:

1. DRAWINGS MUST NOT BE SCALED.
2. ACCORDING TO THE COPYRIGHT ACT (ACT No 98 OF 1978) NO PART OF THIS DOCUMENT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WHATSOEVER INCLUDING MECHANICAL, ELECTRONIC, PHOTOCOPYING, MICROFILMING OR ANY OTHER SYSTEM OF INFORMATION STORAGE WITHOUT WRITTEN PERMISSION OF ZUTARI.
3. ALL PIPEWORK IS INDICATIVE AND SHALL NOT BE MANUFACTURED FROM THIS DRAWING. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE PIPEWORK, VALVES AND SPECIALS. THE CONTRACTOR SHALL SUBMIT HIS DESIGN CALCULATIONS AND SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL BEFORE MANUFACTURING OR FABRICATION COMMENCES. THE DESIGN MUST BE IN ACCORDANCE WITH THE MECHANICAL SPECIFICATIONS.
4. THE CONTRACTOR SHALL SURVEY ALL ABOVE-GROUND AND UNDERGROUD PIPES TO CONFIRM THE LEVELS AND SHALL PROVIDE SURVEY INFORMATION TO THE ENGINEER.
5. THE CONTRACTOR SHALL MAKE PROVISION FOR FITTING TO C&I CONNECTIONS, LOCAL DRAIN POINTS AND QUICK-COUPLING CONNECTION POINTS TO FLUSH THE LINE WITH COMPRESSED AIR.
6. ALL FLANGES AND FITTINGS BELOW GROUND SHALL BE COVERED WITH A VISCO-ELASTIC COATING (STOPAQ OR SIMILAR APPROVED) AND WRAPPED WITH PVC TAPE.
7. THE RESTRAINED FLANGE ADAPTORS AND FLANGES ON THE SUCTION AND DISCHARGE PIPEWORK SHALL MATCH THE PRESSURE CLASS AND DRILLING PARTTERN OF THE PUMP SET.
8. ANY DISCREPANCIES BETWEEN THE DRAWINGS, SPECIFICATIONS AND BILL OF QUANTITIES MUST BE REPORTED IMMEDIATELY TO THE ENGINEER.
9. REFER TO PARTICULAR SPECIFICATIONS FOR CORROSION PROTECTION.
10. ALL VALVES TO BE PROVIDED WITH LOCK OUT MECHANISMS.
11. SPOOL PIECES INSTALLED INSIDE A STRUCTURE OR BUILDING SHALL BE PROVIDED WITH APPROPRIATE LIFTING LUGS TO FIT LIFTING EQUIPMENT PROVIDED IN THE PUPM STATION.
12. ALLOW FOR FULL- FACE INSULATING GASKET KIT BETWEEN DISSIMILAR MATERIALS.
13. FOR PIPE ANCHOR SUPPORTS REFER TO STANDARD DETAIL DRAWING 113503-3410-ORG-MM-0003.
14. CONNECTION POINT INTO EXISTING STORM WATER PIPE IS TO BE REINSTATED AND TO BE WATERTIGHT.
15. DIAMETER "A" IS TO BE CONFIRMED ON SITE
16. FOR DIAMETER "B" AND PIPE WALL THICKNESS "C" REFER TO 113503-3200-DRG-CC-0005 AND 113503-2010-DRG-CC-0005



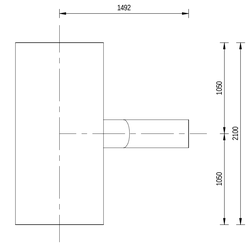
ITEM 1.7 - ISOMETRIC VIEW

NTS



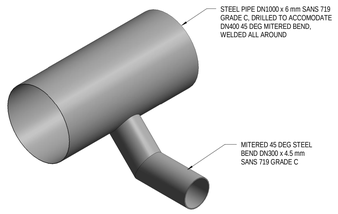
ITEM 1.7 - SIDE VIEW

SCALE 1 : 25



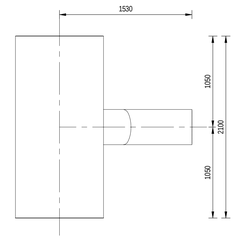
ITEM 1.7 - PLAN VIEW

SCALE 1 : 25



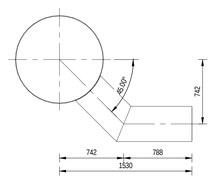
ITEM 2.7 - ISOMETRIC VIEW

NTS



ITEM 2.7 - PLAN VIEW

SCALE 1 : 25



ITEM 2.7 - SIDE VIEW

SCALE 1 : 25

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DESIGNED:	E. LOTTERING	31.01.24	
DRAWN:	L. GWIJI	31.01.24	
CHECKED:	E. LOTTERING	31.01.24	
APPROVED BY:	R. BARRY	31.01.24	
	SIGNATURE	DATE	
ECSA REG No:			
CHECKED BY:			
	SIGNATURE	DATE	
ECSA REG No:			

Johannesburg Water

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PERTH EMPIRE CORRIDORS OF FREEDOM WATER UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

TYPICAL DETAILS AND STANDARDS
SCOUR VALVE CHAMBER DN300 AND DN400

APPROVAL BY JW DEPOT			SCALE
CHECKED:			As indicated
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
APPROVED BY:			
	SIGNATURE BY:	DATE:	

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	31.01.24

DRAWING No.

113503 - 3410 -DRG-MM- 0006 - T0

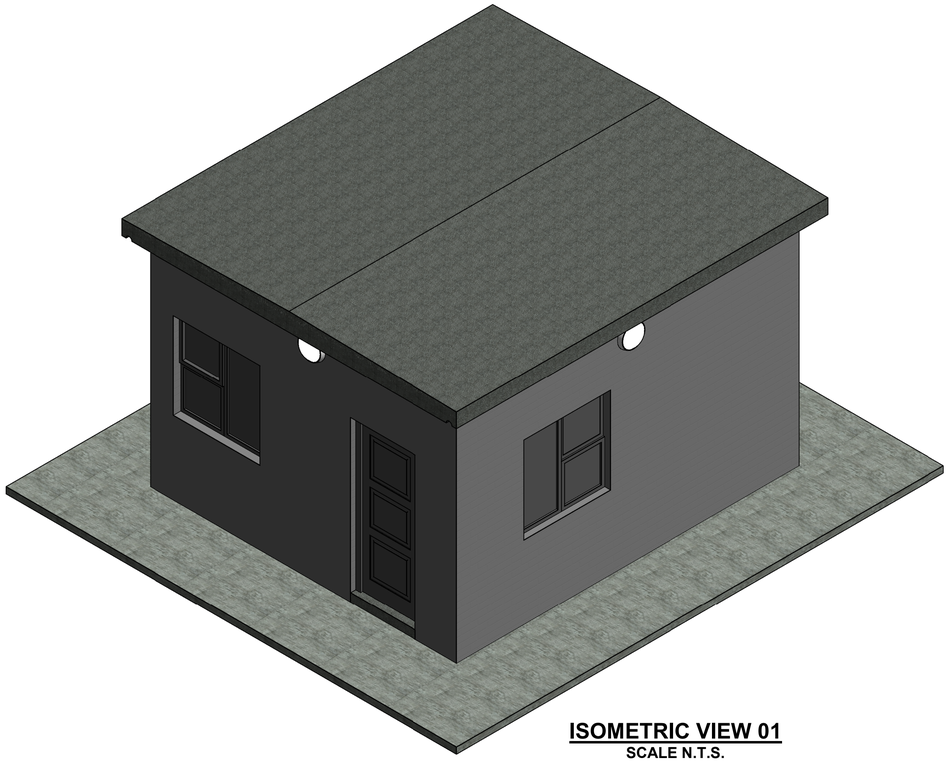
PROJECT No. | DRAWING No. | REV.

A0 SHEET 2 OF 2

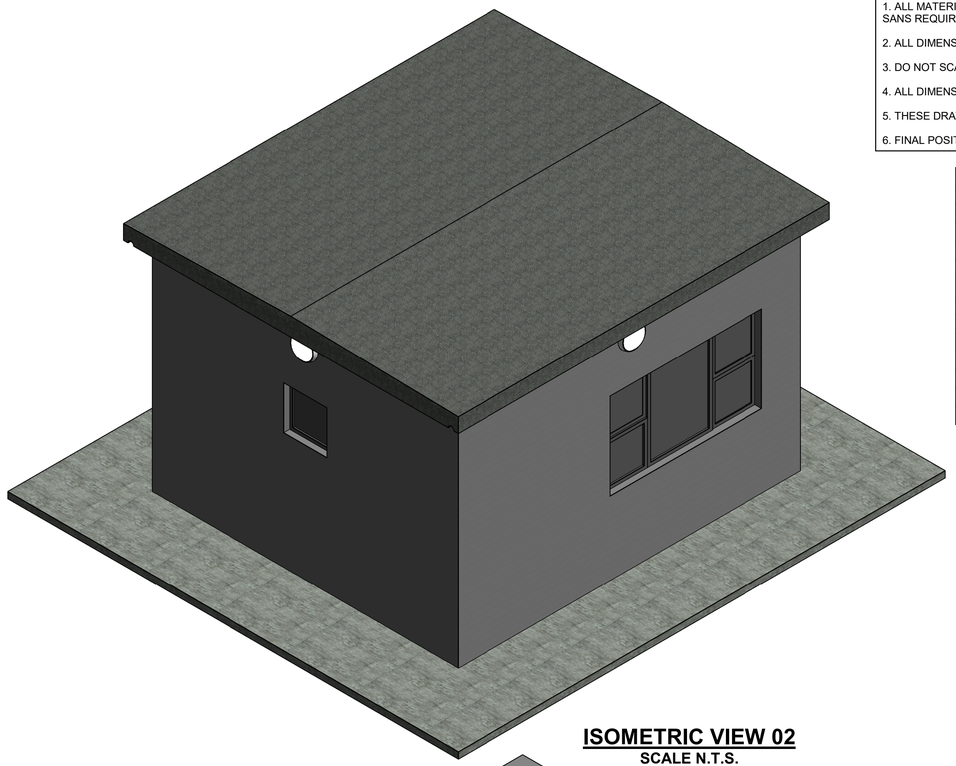
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FILE No.

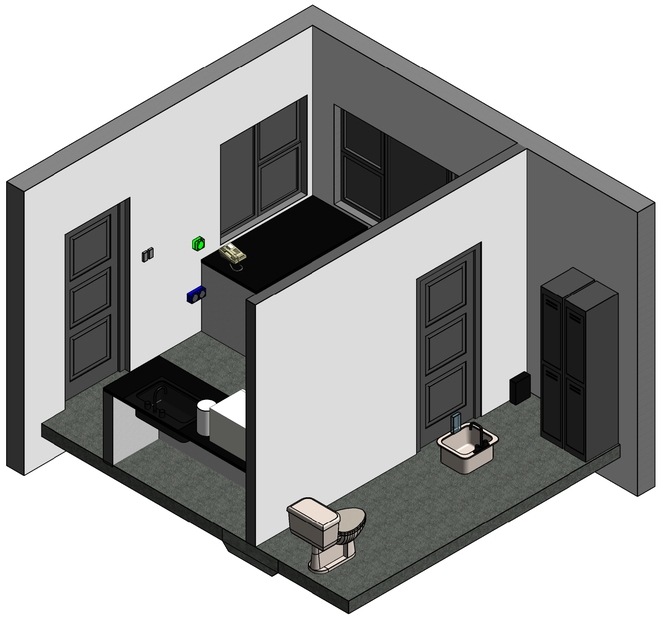
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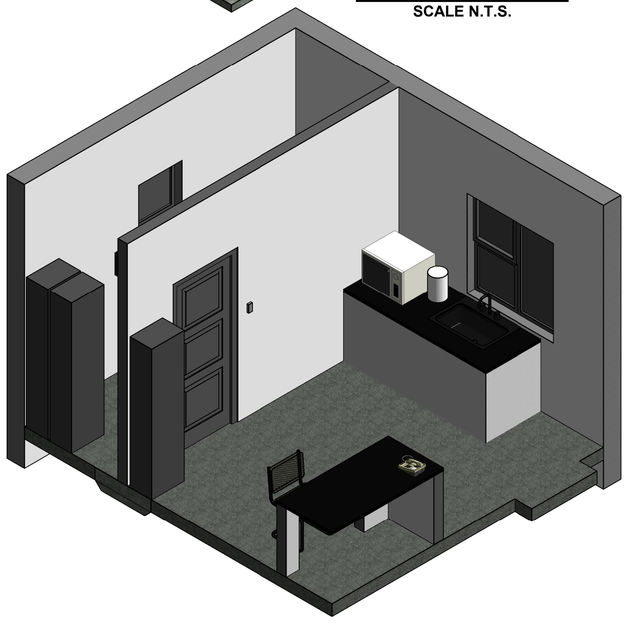
ISOMETRIC VIEW 01
SCALE N.T.S.



ISOMETRIC VIEW 02
SCALE N.T.S.



ISOMETRIC VIEW 03
SCALE N.T.S.



ISOMETRIC VIEW 04
SCALE N.T.S.

GENERAL NOTES:

1. ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS REQUIREMENTS
2. ALL DIMENSIONS ARE IN MILLIMETER, UNLESS OTHERWISE SPECIFIED
3. DO NOT SCALE FROM THESE DRAWINGS.
4. ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
5. THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH THE STANDARD DRAWINGS (IF APPLICABLE).
6. FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.

STRUCTURAL REQUIREMENTS	
STRUCTURE TYPE:	BUILDING STRUCTURE
CONCRETE GRADE:	30 MPa/19 mm TO ALL STRUCTURAL CONCRETE
	15 MPa/19 mm TO BLINDING
EXTENDERS:	MAXIMUM FLY ASH TO SPECIFICATION
AGGREGATE:	STANDARD
FORMED SURFACE FINISH:	SMOOTH
UNFORMED SURFACE FINISH:	POWER FLOAT FINISH TO SLABS
	STEEL FLOAT FINISH TO TOP OF WALLS
CONCRETE COVER:	75mm IF CAST AGAINST SOIL OR BLINDING
	40mm FOR WATER CONTACT AREAS
	60mm FOR SEWAGE CONTACT AREAS
	50mm FOR SOIL CONTACT AREAS
	30mm FOR AIR CONTACT AREAS

REFER TO THE FOLLOWONG DRAWINGS FOR BUILDING DETAIL:	
BUILDING DETAILS:	113503-3500-DRG-CC-0007 TO 0010

BATHROOM MATERIAL LIST	
ITEM	**QUANTITY**
TOILET	1
HAND BASIN	1
LOCKERS	2
OFFICE	
DESK	1
DESK CHAIR	1
SINK	1
BASE CABINED - DOUBLE DOOR - SINK	1
LOCKERS	1

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DESIGNED	P. L. J.	*11.11.16*	
DRAWN	P. L. J.	*11.11.16*	
CHECKED	J. M.	*11.11.16*	
APPROVED BY:	V.W.	*28.05.21*	
	SIGNATURE	DATE	
ECSA REG. No.			
CHECKED BY:			
	SIGNATURE	DATE	
ECSA REG. No.			

Johannesburg Water

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PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

GUARD HOUSE
ISOMETRIC VIEW

APPROVAL BY JW DEPOT		
CHECKED		
APPROVED BY:		
	SIGNATURE	DATE
APPROVAL BY JW PLANNING		
CHECKED		
APPROVED BY:		
	SIGNATURE	DATE

SCALE: AS SHOWN

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	05/2024

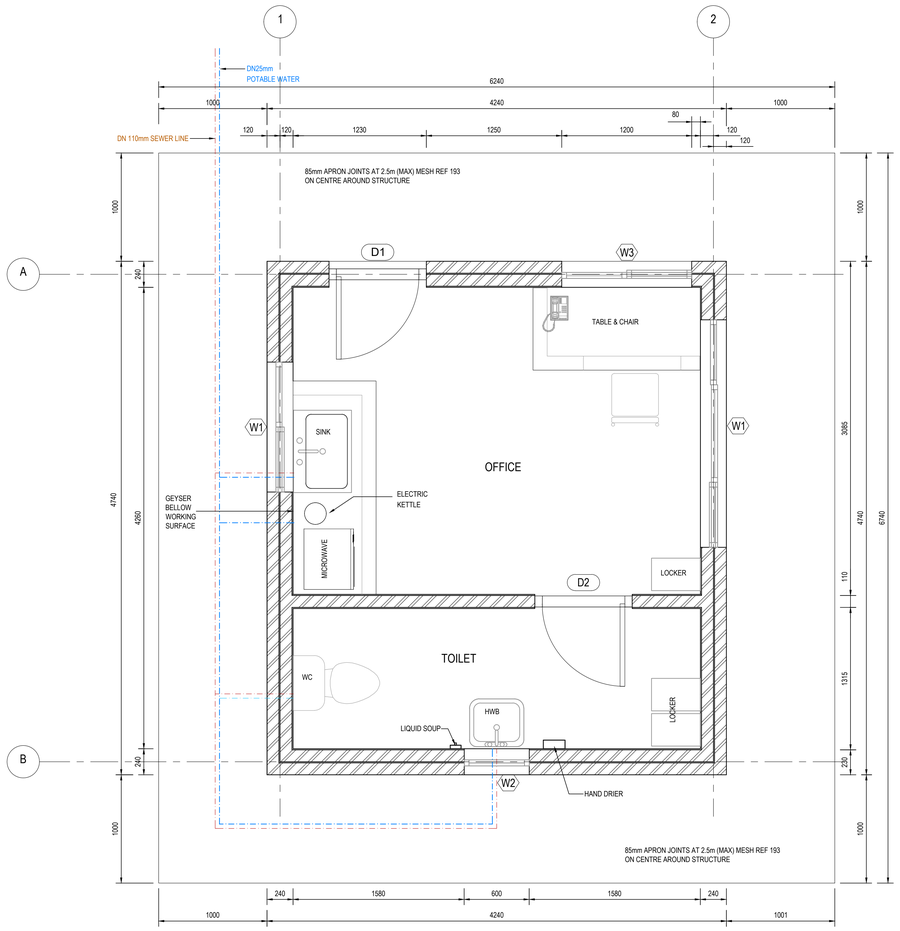
DRAWING No.

113503 - 3500-DRG-CC-0001 - T0
PROJECT No. DRAWING No. REV.

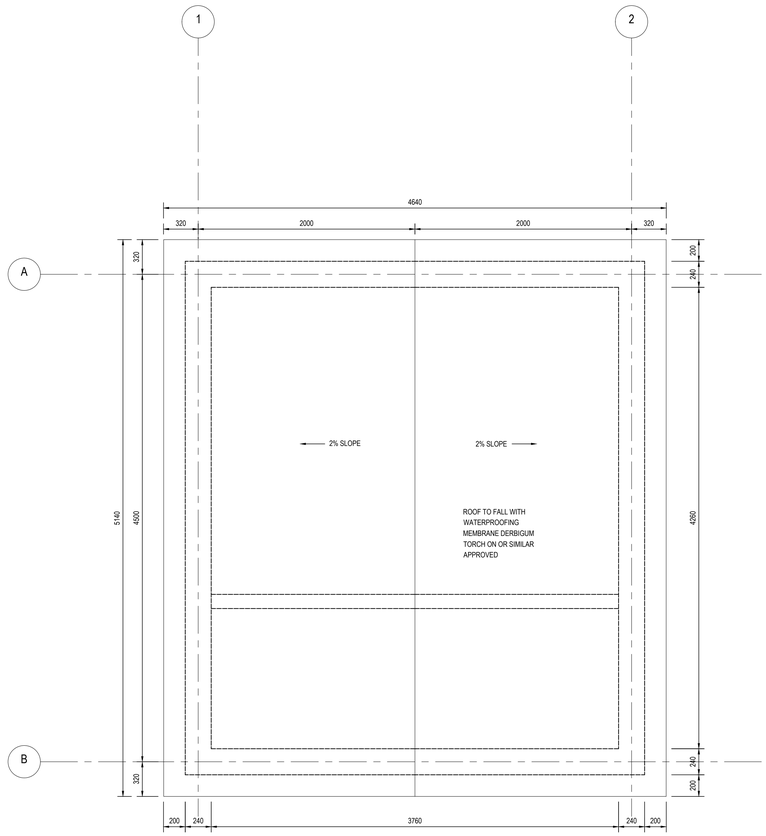
A1 ORIGINAL PAGE SIZE
SHEET 1 OF 1
FILE No.

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PLAN LAYOUT
SCALE 1:20



ROOF LAYOUT
SCALE 1:20

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DESIGNED	P.L.J		NOVEMBER 2016
DRAWN	P.L.J		NOVEMBER 2016
CHECKED	J.M		NOVEMBER 2016
APPROVED BY:	V.W		MAY 2021
	SIGNATURE		DATE
ECSA REG. No.			
CHECKED BY:			
	SIGNATURE		DATE
ECSA REG. No.			

Johannesburg Water

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PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

GUARD HOUSE
PLAN LAYOUT

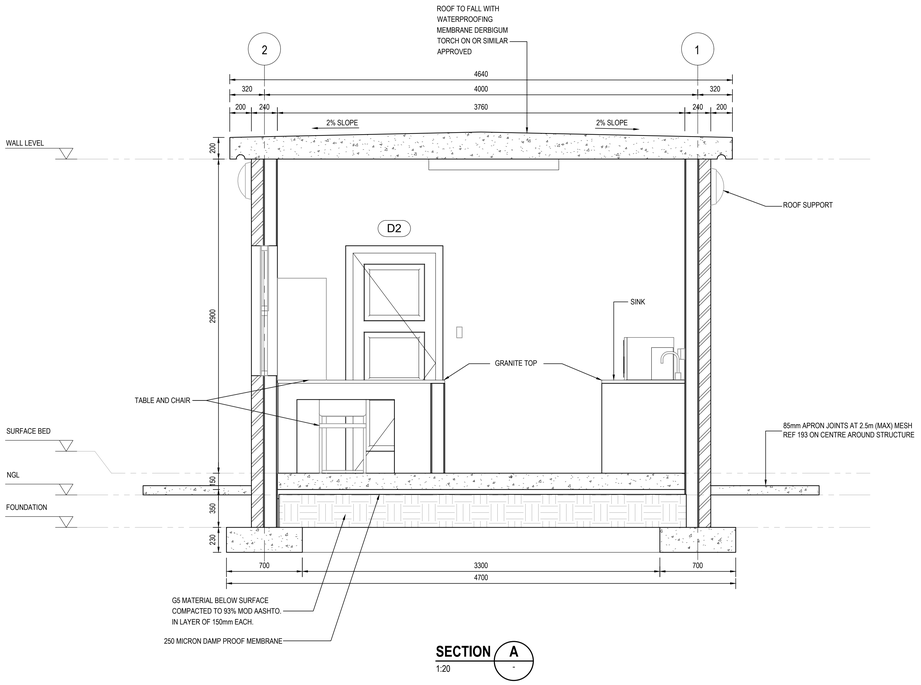
APPROVAL BY JW DEPOT			SCALE
CHECKED			AS SHOWN
APPROVED BY:			
	SIGNATURE	DATE	
APPROVAL BY JW PLANNING			
CHECKED			
APPROVED BY:			
	SIGNATURE	DATE	

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	05/2024

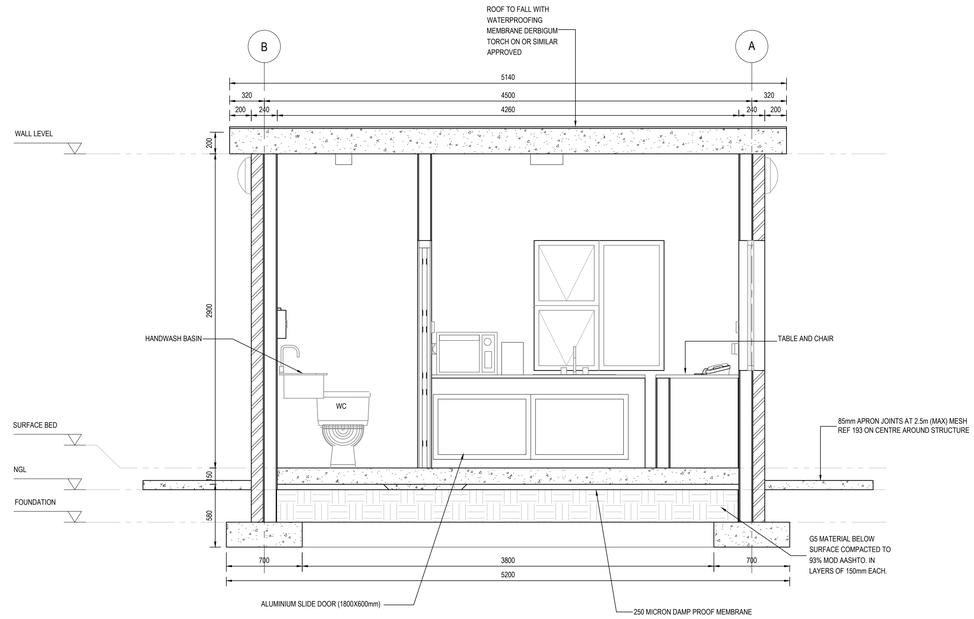
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113503 - 3500-DRG-CC-0002 - T0
PROJECT No. DRAWING No. REV.

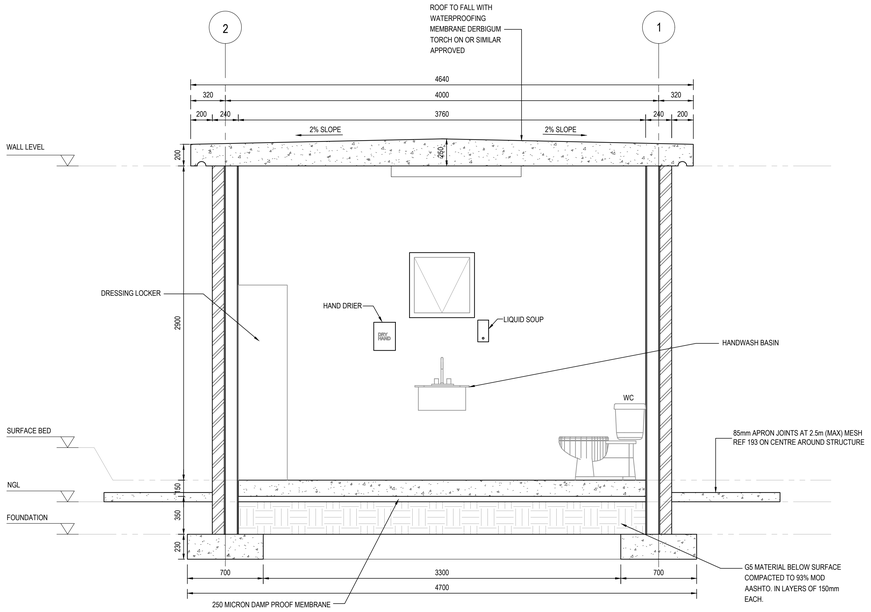
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SHEET 1 OF 1
FILE No.



SECTION A
1:20



SECTION B
1:20



SECTION C
1:20

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NOTE:
REFER TO DRAWING 113503-3500-DRG-CC-0001 FOR GENERAL NOTES AND REFERENCE DRAWINGS.

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DESIGNED	P.L.J		NOVEMBER 2016
DRAWN	P.L.J		NOVEMBER 2016
CHECKED	J.M		NOVEMBER 2016
APPROVED BY:	V.W		MAY 2021
		SIGNATURE	DATE
ECSA REG. No.			
CHECKED BY:			
		SIGNATURE	DATE
ECSA REG. No.			

Johannesburg Water

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PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

GUARD HOUSE
SECTIONS

APPROVAL BY JW DEPOT			SCALE
CHECKED			AS SHOWN
APPROVED BY:			
	SIGNATURE	DATE	
APPROVAL BY JW PLANNING			
CHECKED			
APPROVED BY:			
	SIGNATURE	DATE	

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	05/2024

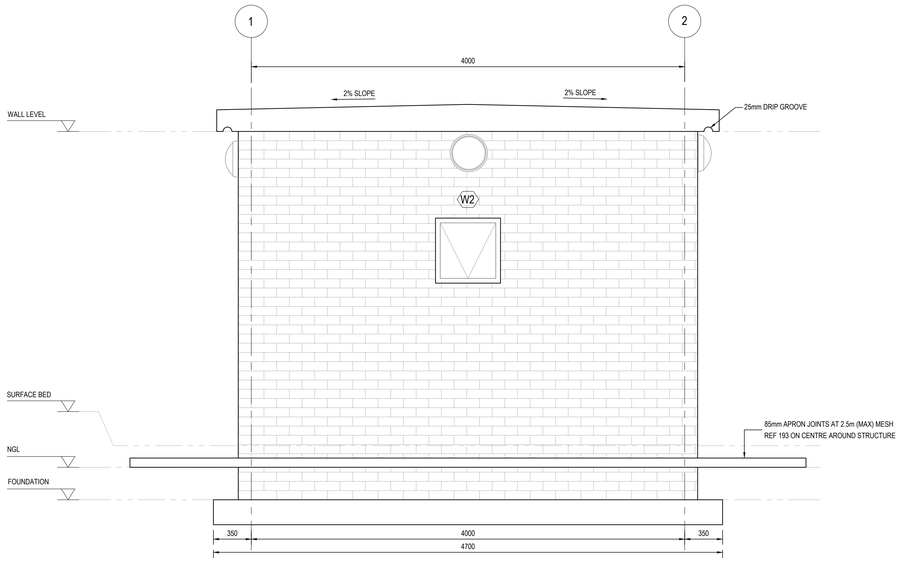
DRAWING No.

113503 - 3500-DRG-CC-0003 - T0
PROJECT No. DRAWING No. REV.

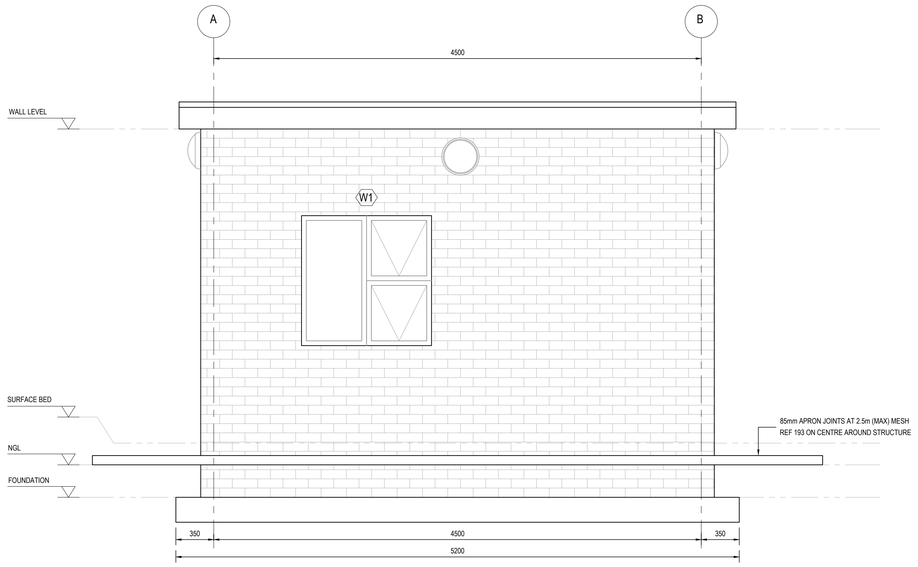
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SHEET 1 OF 1
FILE No.

GENERAL NOTES:

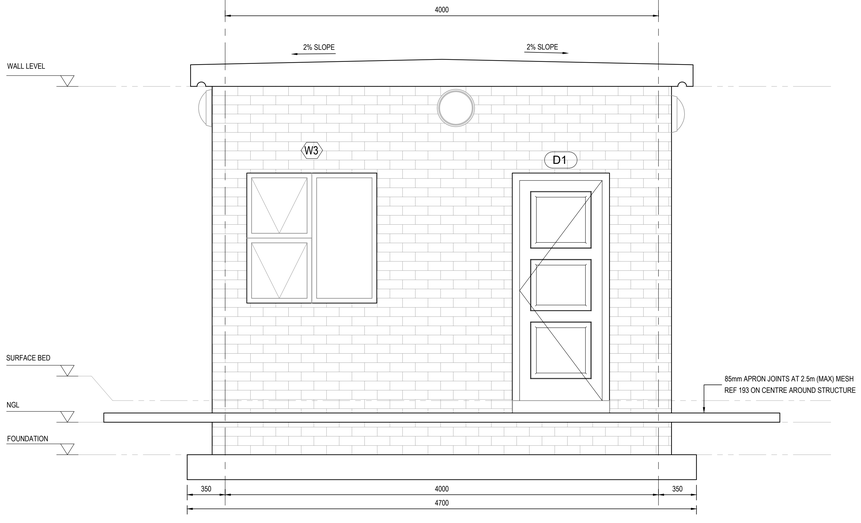
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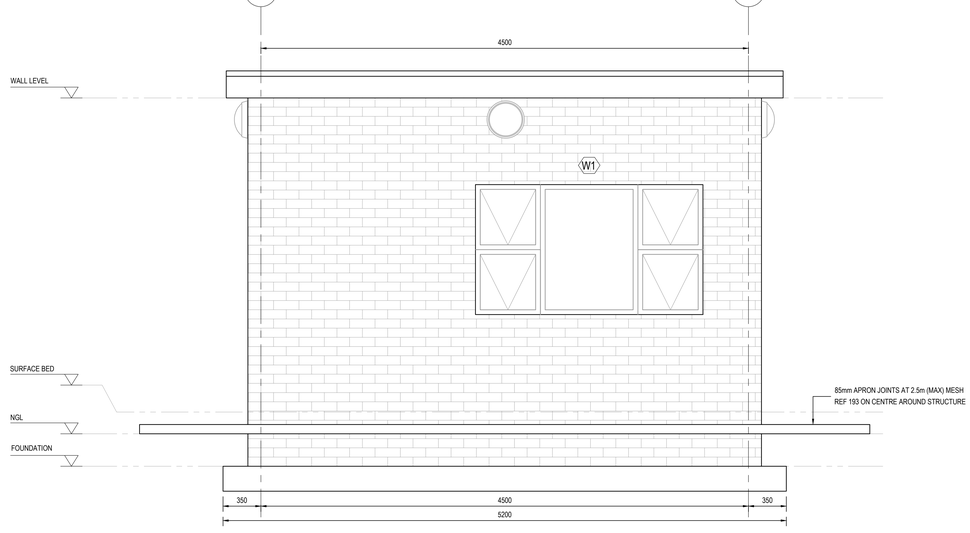
ELEVATION 1
1:20



ELEVATION 2
1:20



ELEVATION 3
1:20



ELEVATION 4
1:20

NOTE:
REFER TO DRAWING 113503-3500-DRG-CC-0001 FOR GENERAL NOTES AND REFERENCE DRAWINGS.

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DESIGNED	P.L.J		NOVEMBER 2016
DRAWN	P.L.J		NOVEMBER 2016
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APPROVED BY:	V.W		MAY 2021
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ECSA REG. No.			
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PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

GUARD HOUSE
ELEVATIONS

APPROVAL BY JW DEPOT			SCALE
CHECKED			AS SHOWN
APPROVED BY:			
	SIGNATURE	DATE	
APPROVAL BY JW PLANNING			
CHECKED			
APPROVED BY:			
	SIGNATURE	DATE	

REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	05/2024

DRAWING No.

113503 - 3500-DRG-CC-0004 - T0

PROJECT No. | DRAWING No. | REV.

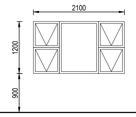
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FILE No.

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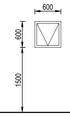
NUMBER ON PLAN	WINDOW SIZE
W1	2100mm x 1200mm



SCALE 1:50

WINDOW	BURGLAR PROOFING
STANDARD TOP HUNG, CASEMENT 38, WINDOW SYSTEM.	STANDARD AS SPECIFIED BY WINDOW FRAME SUPPLIER FITTED INTERNALLY.
IRONMONGERY:	**FINISH/PAINT:**
STANDARD AS SPECIFIED BY WINDOW FRAME SUPPLIER.	FRAMES: RED OXIDE PAINT PRIMER UNDER COAT AND TWO COATS "PLASCON ENAMEL". COLOUR "BATTLESHIP GREY".
GLAZING	
GLAZED WITH 4mm THICK CLEAR GLASS. FOR TOILETS: GLAZED WITH 4mm THICK PATTERNED GLASS.	
WINDOW DETAIL MEASURED SEPARATELY	
OUTSIDE WINDOW SILL:	**INSIDE WINDOW SILL:**
BRICK ON EDGE	PLASTERED AND PAINTED.
DETAIL ABOVE WINDOW:	
BRICK ON EDGE WITH SINGLE PRECAST LINTEL ABOVE. Y8 REINFORCING BARS (2X AT LINTOL LEVEL AND 1X AT CENTER 4 BRICK COURSES HIGER). BRICK FORCE EVERY SECOND LAYER FOR 6 COURSES. REFER TO STANDARD DETAIL 113503-3500-DRG-CC-0007	

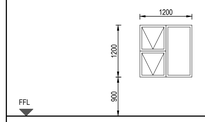
NUMBER ON PLAN	WINDOW SIZE
W2	600mm x 600mm



SCALE 1:50

WINDOW	BURGLAR PROOFING
STANDARD TOP HUNG, CASEMENT 38, WINDOW SYSTEM.	STANDARD AS SPECIFIED BY WINDOW FRAME SUPPLIER FITTED INTERNALLY.
IRONMONGERY:	**FINISH/PAINT:**
STANDARD AS SPECIFIED BY WINDOW FRAME SUPPLIER.	FRAMES: RED OXIDE PAINT PRIMER UNDER COAT AND TWO COATS "PLASCON ENAMEL". COLOUR "BATTLESHIP GREY".
GLAZING	
GLAZED WITH 4mm THICK CLEAR GLASS. FOR TOILETS: GLAZED WITH 4mm THICK PATTERNED GLASS.	
WINDOW DETAIL MEASURED SEPARATELY	
OUTSIDE WINDOW SILL:	**INSIDE WINDOW SILL:**
BRICK ON EDGE	PLASTERED AND PAINTED.
DETAIL ABOVE WINDOW:	
BRICK ON EDGE WITH SINGLE PRECAST LINTEL ABOVE. Y8 REINFORCING BARS (2X AT LINTOL LEVEL AND 1X AT CENTER 4 BRICK COURSES HIGER). BRICK FORCE EVERY SECOND LAYER FOR 6 COURSES. REFER TO STANDARD DETAIL 113503-3500-DRG-CC-0007	

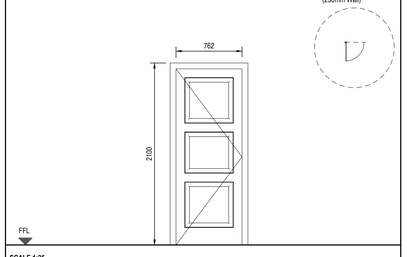
NUMBER ON PLAN	WINDOW SIZE
W3	1200mm x 1200mm



SCALE 1:50

WINDOW	BURGLAR PROOFING
STANDARD TOP HUNG, CASEMENT 38, WINDOW SYSTEM.	STANDARD AS SPECIFIED BY WINDOW FRAME SUPPLIER FITTED INTERNALLY.
IRONMONGERY:	**FINISH/PAINT:**
STANDARD AS SPECIFIED BY WINDOW FRAME SUPPLIER.	FRAMES: RED OXIDE PAINT PRIMER UNDER COAT AND TWO COATS "PLASCON ENAMEL". COLOUR "BATTLESHIP GREY".
GLAZING	
GLAZED WITH 4mm THICK CLEAR GLASS. FOR TOILETS: GLAZED WITH 4mm THICK PATTERNED GLASS.	
WINDOW DETAIL MEASURED SEPARATELY	
OUTSIDE WINDOW SILL:	**INSIDE WINDOW SILL:**
BRICK ON EDGE.	PLASTERED AND PAINTED.
DETAIL ABOVE WINDOW:	
BRICK ON EDGE WITH SINGLE PRECAST LINTEL ABOVE. Y8 REINFORCING BARS (2X AT LINTOL LEVEL AND 1X AT CENTER 4 BRICK COURSES HIGER). BRICK FORCE EVERY SECOND LAYER FOR 6 COURSES. REFER TO STANDARD DETAIL 113503-3500-DRG-CC-0007	

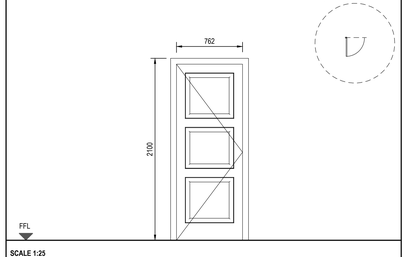
NUMBER ON PLAN	DOOR SIZE
D1	762 mm X 2032mm



SCALE 1:25

DOOR FRAME	DOOR
1.2mm PRESSED MILD STEEL DOOR FRAME. DOUBLE REBATE WITH HEAVY DUTY HINGES. SUITABLE FOR DOOR IN 230mm BRICK WALL. SHOP PRIMED.	SOLID WOODEN DOOR.
IRONMONGERY AND FURNITURE	**FINISH/PAINT**
SOLID SPRINGBOK 391/315/810 DOUBLE CYLINDER LOCKSET OR SIMILAR APPROVED.	FRAME & DOOR: UNDERCOAT AND TWO COATS "PLASCON VELVAGLO" COLOUR "CLAY STONE" (VLO 083) PAINT
	GLAZING
	NONE.
DOOR DETAIL MEASURED SEPARATELY:	
DETAIL ABOVE DOOR:	**SIGNAGE**
BRICK ON EDGE WITH SINGLE PRECAST LINTEL ABOVE. Y8 REINFORCING BARS (2X AT LINTOL LEVEL AND 1X AT CENTER 4 BRICK COURSES HIGER). BRICK FORCE EVERY SECOND LAYER FOR 6 COURSES. REFER TO STANDARD DETAIL 113503-3500-DRG-CC-0007	NONE.

NUMBER ON PLAN	DOOR SIZE
D2	762 mm X 2032mm



SCALE 1:25

DOOR FRAME	DOOR
1.2mm PRESSED MILD STEEL DOOR FRAME. DOUBLE REBATE WITH HEAVY DUTY HINGES. SUITABLE FOR DOOR IN 110mm BRICK WALL. SHOP PRIMED.	HOLLOW CORE FLUSH PANEL DOOR.
IRONMONGERY AND FURNITURE	**FINISH/PAINT**
SOLID SPRINGBOK 391/315/810 DOUBLE CYLINDER LOCKSET OR SIMILAR APPROVED.	FRAME & DOOR: UNDERCOAT AND TWO COATS "PLASCON VELVAGLO" COLOUR "CLAY STONE" (VLO 083) PAINT
	GLAZING
	NONE.
DOOR DETAIL MEASURED SEPARATELY:	
DETAIL ABOVE DOOR:	**SIGNAGE**
SINGLE PRECAST LINTEL ABOVE. BRICK FORCE EVERY SECOND LAYER FOR 6 COURSES. REFER TO STANDARD DETAIL 113503-3500-DRG-CC-0007	NONE.

FINISHES					
ELEMENT:	BRICK WORK	PLASTER WORK	PAINT	SCREED	FLOOR FINISH
EXTERIOR WALLS:	FACE BRICK EXTRA (FBX), TOPAZ SATIN, STRETCHER BOND	NONE	NONE	N/A	N/A
INTERIOR WALLS:	NON FACE BRICK EXTRA (NFX)	15mm THICK, STEEL FLOAT FINISH	UNDERCOAT AND TWO COATS "PLASCON DOUBLE VELVET COLOUR 'LOTUS' (VEL 46)	N/A	N/A
CONCRETE FLOOR:	N/A	N/A	NONE	N/A	POWER FLOAT

NOTE:
REFER TO DRAWING 113503-3500-DRG-CC-0001 FOR GENERAL NOTES AND REFERENCE DRAWINGS.

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DESIGNED	P.L.J		NOVEMBER 2016
DRAWN	P.L.J		NOVEMBER 2016
CHECKED	J.M		NOVEMBER 2016
APPROVED BY:	V.W		MAY 2021
		SIGNATURE	DATE
ECSA REG. No.			
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PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

GUARD HOUSE
SCHEDULES

APPROVAL BY JW DEPOT			SCALE
CHECKED			AS SHOWN
APPROVED BY:			
	SIGNATURE	DATE	
APPROVAL BY JW PLANNING			
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AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	05/2024

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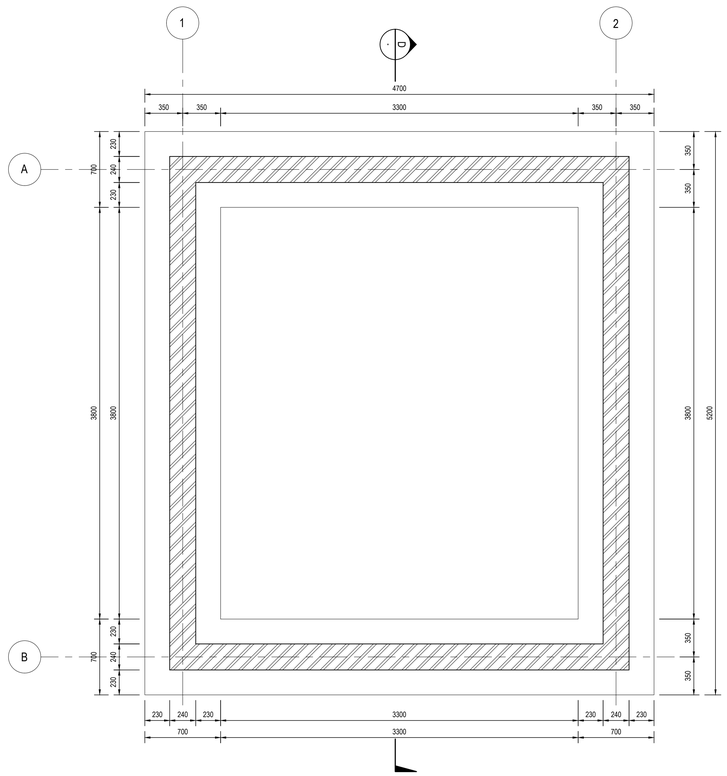
113503 - 3500-DRG-CC-0005 - T0
PROJECT No. | DRAWING No. | REV.

A0 ORIGINAL PAGE SIZE | SHEET 1 OF 1

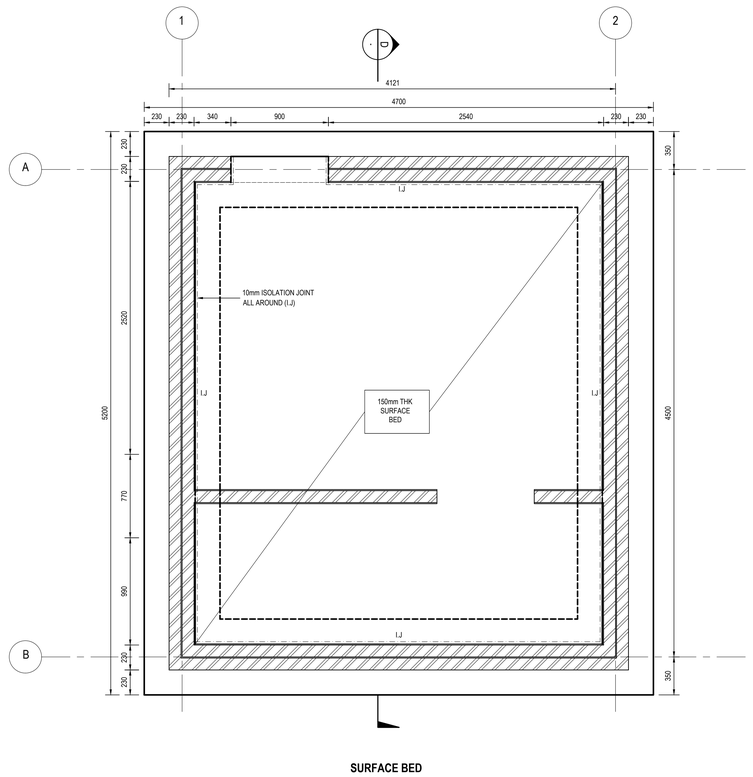
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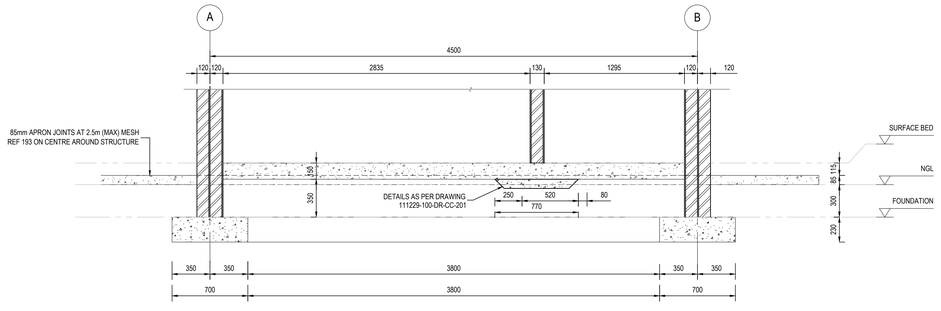
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FOUNDATION
SCALE 1:20



SURFACE BED
SCALE 1:20



SECTION D
1:20

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PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

GUARD HOUSE
FOUNDATION & SURFACE BED LAYOUT

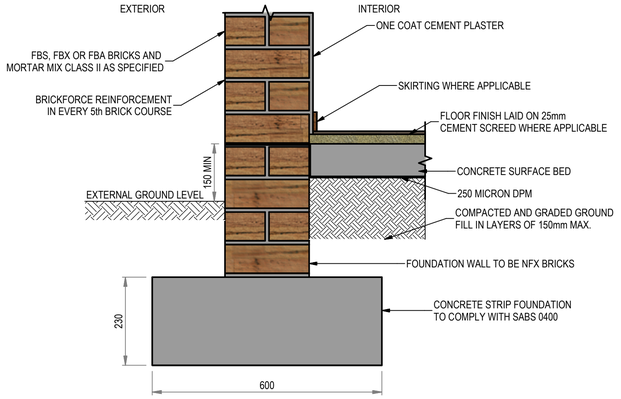
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	SIGNATURE	DATE	
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AMENDMENTS		
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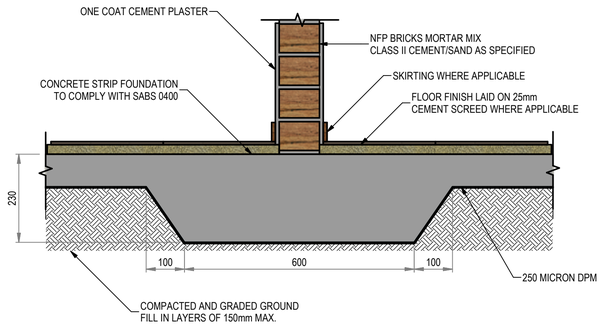
PROJECT No.		DRAWING No.		REV.
113503	-	3500-DRG-CC-0006	-	T0

A0 ORIGINAL PAGE SIZE
SHEET 1 OF 1
FILE No.



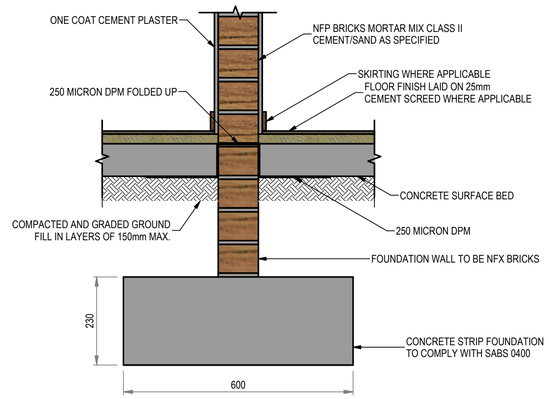
DOUBLE WALL STRIP FOUNDATION TYPE 1

THIS DETAIL IS SUITABLE FOR AREAS WHERE GROUND FILL IS 300 MAXIMUM AND WHERE INTERNAL WALLS ARE KEPT TO A MINIMUM HEIGHT.



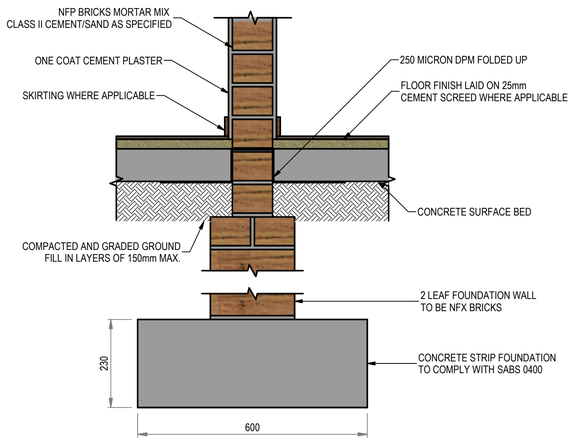
SINGLE WALL STRIP FOUNDATION TYPE 1A

THIS DETAIL IS SUITABLE WHERE INTERNAL FOUNDATION WALL 300mm MINIMUM IN HEIGHT

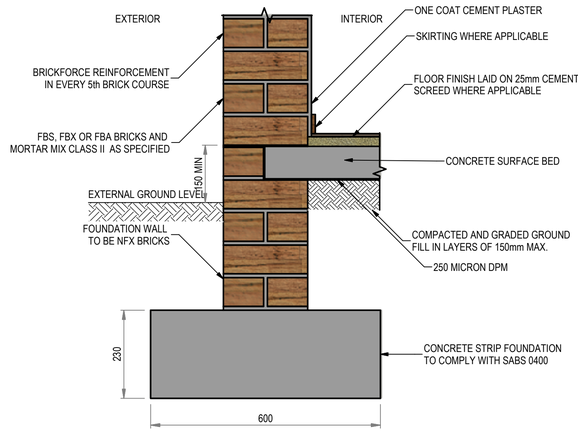


SINGLE WALL STRIP FOUNDATION TYPE 1B

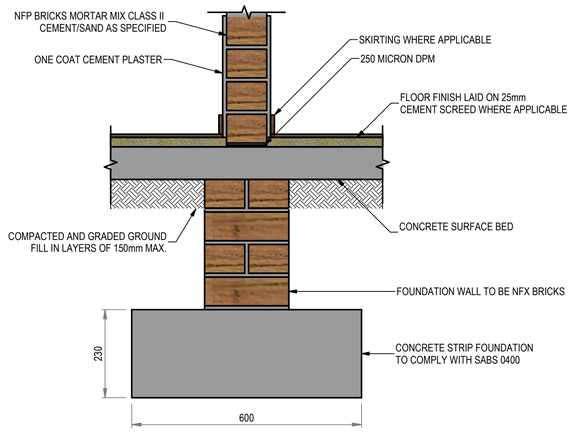
THIS DETAIL IS SUITABLE WHERE INTERNAL FOUNDATION WALL EXCEEDS 750 - 1000 mm IN HEIGHT



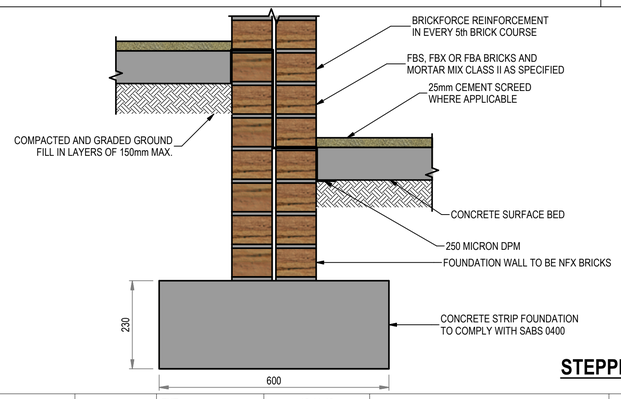
SINGLE WALL STRIP FOUNDATION TYPE 1C



DOUBLE WALL STRIP FOUNDATION TYPE 2

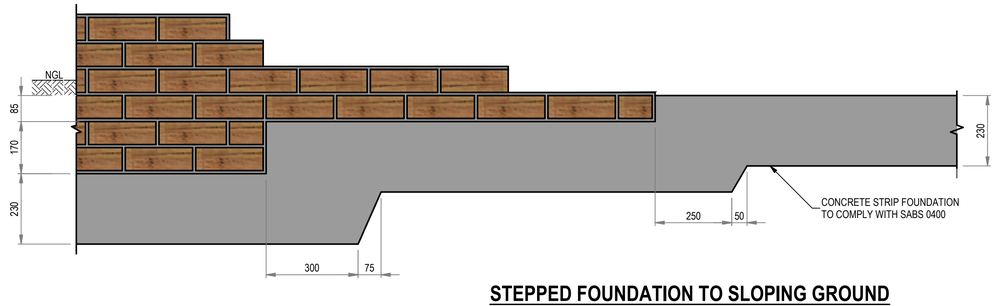


SINGLE WALL STRIP FOUNDATION TYPE 2



STEPPED FOOTING DETAIL

STEPPED FOUNDATIONS SHOULD OVERLAP BY TWICE THE HEIGHT OF THE STEP, BY THE THICKNESS OF THE FOUNDATIONS, OR BY 300mm, WHICHEVER IS THE GREATER.



STEPPED FOUNDATION TO SLOPING GROUND

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PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADES
CROSBY BULK INFRASTRUCTURE PROJECT

TYPICAL DETAILS - BUILDING DETAILS
SHEET 1 OF 4

APPROVAL BY JW DEPOT			SCALE
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APPROVED BY:			
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AMENDMENTS		
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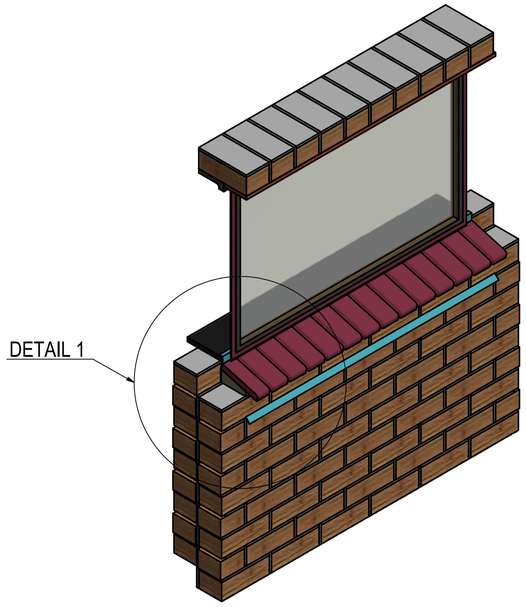
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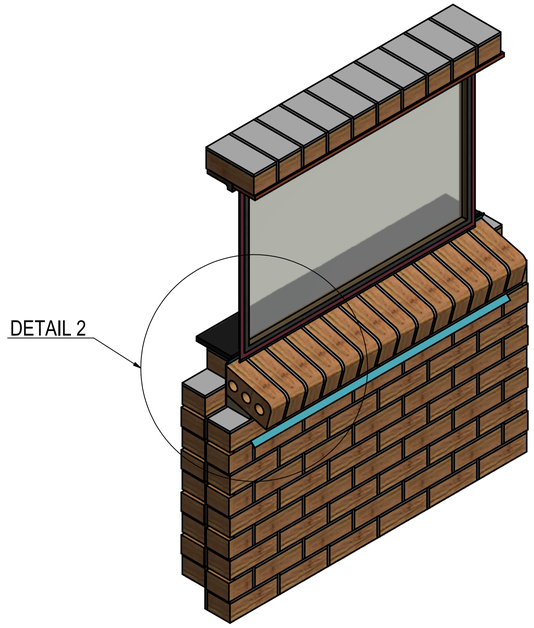
PROJECT No. | DRAWING No. | REV.

A1 ORIGINAL PAGE SIZE | SHEET 1 OF 4

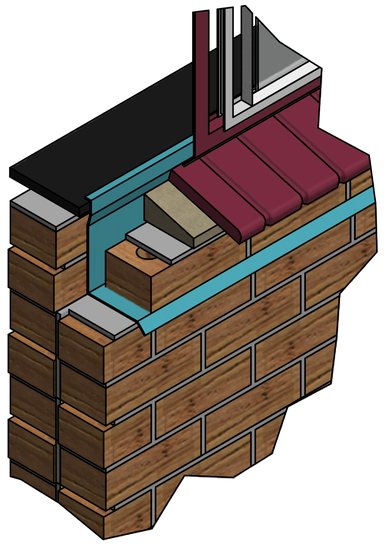
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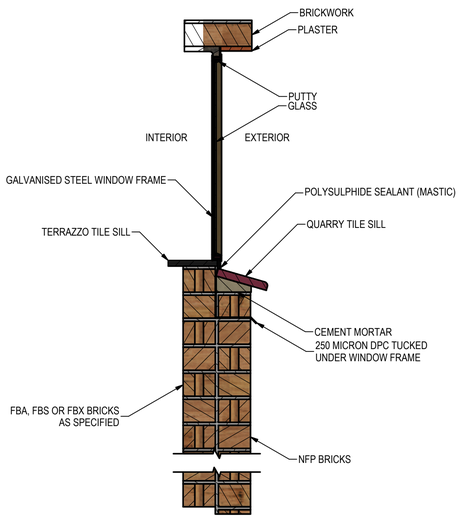
QUARRY TILE SILL



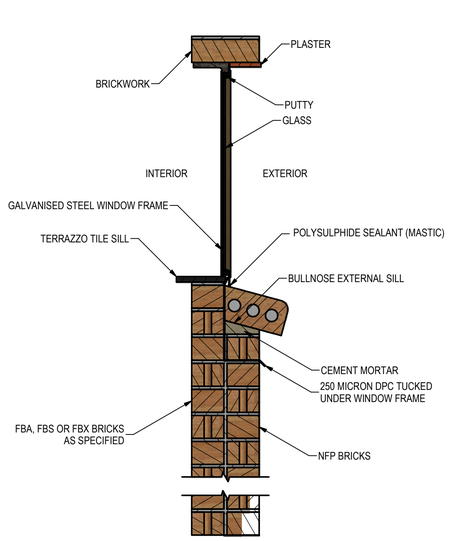
BULLNOSE BRICK SILL



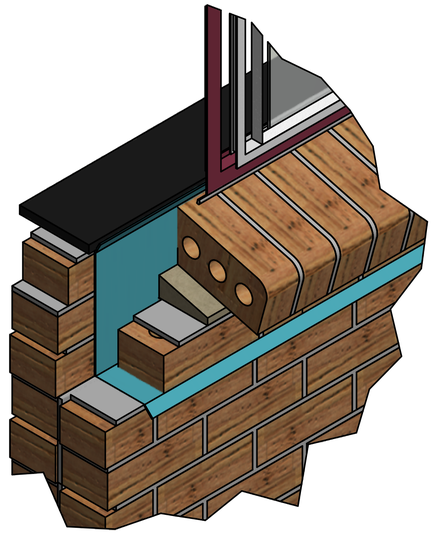
EXPLODED VIEW DETAIL 1
N.T.S.



VERTICAL SECTION THROUGH QUARRY TILE SILL



VERTICAL SECTION THROUGH BULLNOSE BRICK SILL



EXPLODED VIEW DETAIL 2
N.T.S.

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PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE

TYPICAL DETAILS - BUILDING DETAILS
SHEET 2 OF 4

APPROVAL BY JW DEPOT		
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SCALE: AS SHOWN

REV:	DESCRIPTION	DATE:
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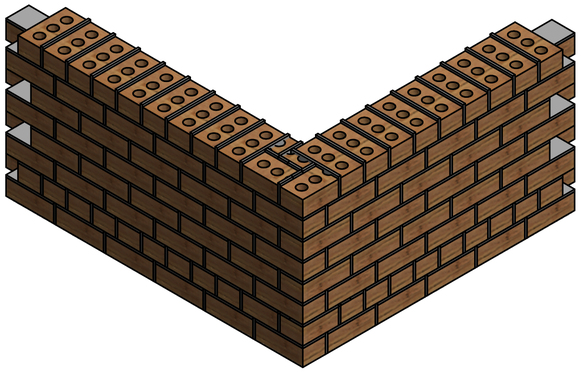
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113503 - 3500-DRG-CC-0008 - T0
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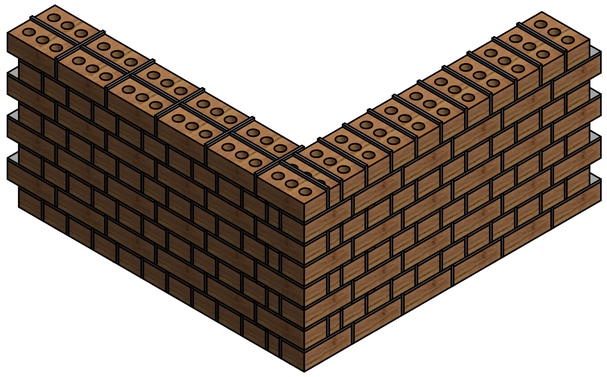
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THIS IS A STRETCHER BOND THROUGHOUT BUT WITH A HEADER COURSE EVERY SIXTH COURSE



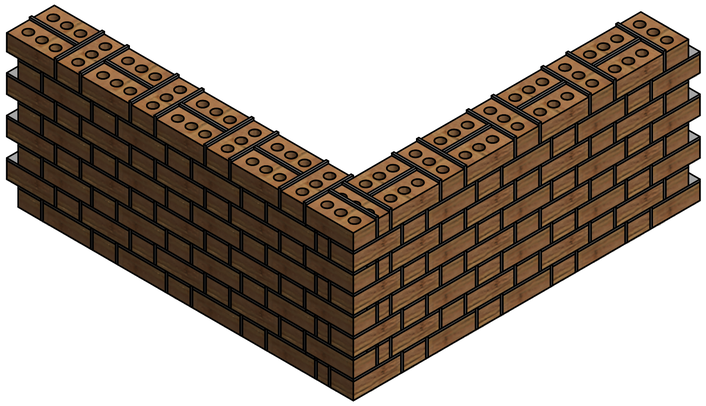
COMMON BOND

ONE STRETCHER COURSE FOLLOWED BY ONE HEADER COURSE AND REPEATED.



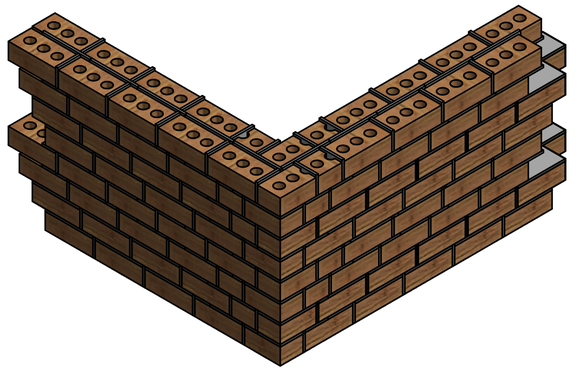
ENGLISH BOND

A COURSE CONSISTS OF ONE STRETCHER FOLLOWED BY ONE HEADER WHICH IS REPEATED. THE NEXT COURSE HAS THE SAME SEQUENCE, BUT IS STAGGERED OVER THE PREVIOUS BOND.



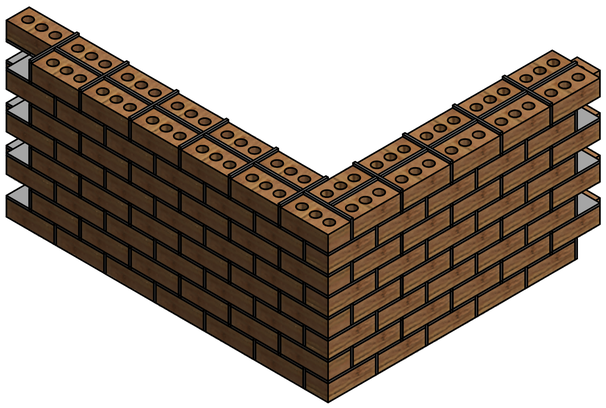
FLEMISH BOND

START WITH A STRETCHER COURSE, THE NEXT COURSE HAS THE SAME SEQUENCE BUT IS STAGGERED QUARTERLY OVER THE PREVIOUS BOND.



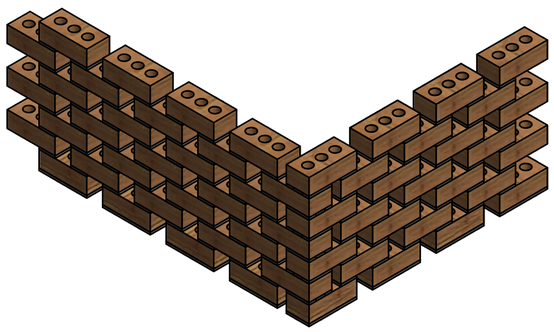
QUARTER BOND

STRETCHER BOND FOR 280mm CAVITY WALLS AND SINGLE WALL.



STRETCHER BOND

FOR ROOM OR STRUCTURES REQUIRING MAXIMUM CROSS VENTILATION AND SECURITY.



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PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

TYPICAL DETAILS - BUILDING DETAILS
SHEET 3 OF 4

APPROVAL BY JW DEPOT		
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APPROVED BY:		
	SIGNATURE	DATE
APPROVAL BY JW PLANNING		
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APPROVED BY:		
	SIGNATURE	DATE

SCALE: AS SHOWN

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	05/2024

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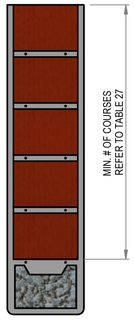
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PROJECT No. | DRAWING No. | REV.

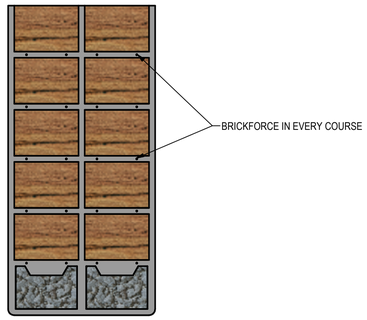
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SHEET 3 OF 4

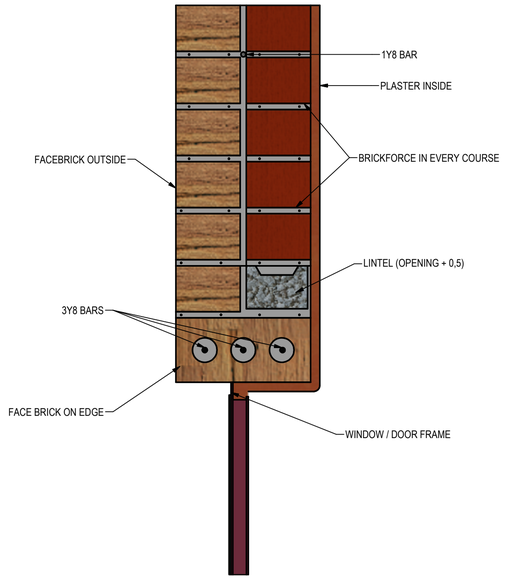
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SINGLE PREAST CONCRETE LINTELS



DOUBLE PRECAST LINTELS



LINTEL DETAIL FOR FACE BRICK OPENINGS

NOTES:

1. ENSURE PRECAST PRESTRESSED CONCRETE LINTEL COMPLIES WITH SANS 1504.
2. SECONDARY REINFORCEMENT IN ACCORDANCE WITH TABLE 23 PROVIDED IN UPPERMOST BED JOINT.
3. LINTELS SHALL BE SET IN MORTOR & HAVE MINIMUM BEARING OF :
4. SIDE COVER OF REINFORCEMENT NOT LESS THAN 30mm
5. BRICKFORCE IN EVERY LAYER ABOVE LINTEL CENTRES NOT EXCEED 200mm, SEE SANS 10400 P.69 FIGER b
6. FOT FURTHER DETAILS OF LINTELS REFER TO SANS 10400 : K

TABLE 27 - PRESTRESSED LINTEL

MIN. # OF COURSES ABOVE PRESTRESSED LINTEL	MAX. SPAN (m)		
	NO ROOF	LIGHT ROOF	HEAVY ROOF
85mm COURSE HEIGHT : WIDTH 110mm			
4	3	2	1,5
5	3	2,5	2
6	3	3	2,5
9	3	3	3
85mm COURSE HEIGHT : WIDTH 220mm			
4	3	2	2
5	3,5	2,5	2,5
6	3,5	3,5	3
9	3,5	3,5	3,5

TABLE 23 - SECONDERY REINFORCEMENT

SPAN (m)	LOAD	
	NO ROOF	LIGHT ROOF
110mm SINGLE-LEAF-WALL		
1,5		BRICKFORCE
2		2 x 5,6mm d12
2,5	2 x 5,6mm d12	2 x 5,6mm d12
3	2 x 5,6mm d12	2 x 5,6mm d12
220mm COLLAR - JOINTED WALL		
1,5		
2		
2,5		2 x 5,6mm d12
3		2 x 5,6mm d12
3,5		2 x 5,6mm d12

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APPROVED BY:	V.W.		28.05.21
	SIGNATURE		DATE
ECSA REG. No.			
CHECKED BY:			
	SIGNATURE		DATE
ECSA REG. No.			

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PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

TYPICAL DETAILS - BUILDING DETAILS
SHEET 4 OF 4

APPROVAL BY JW DEPOT		
CHECKED		
APPROVED BY:		
	SIGNATURE	DATE
APPROVAL BY JW PLANNING		
CHECKED		
APPROVED BY:		
	SIGNATURE	DATE

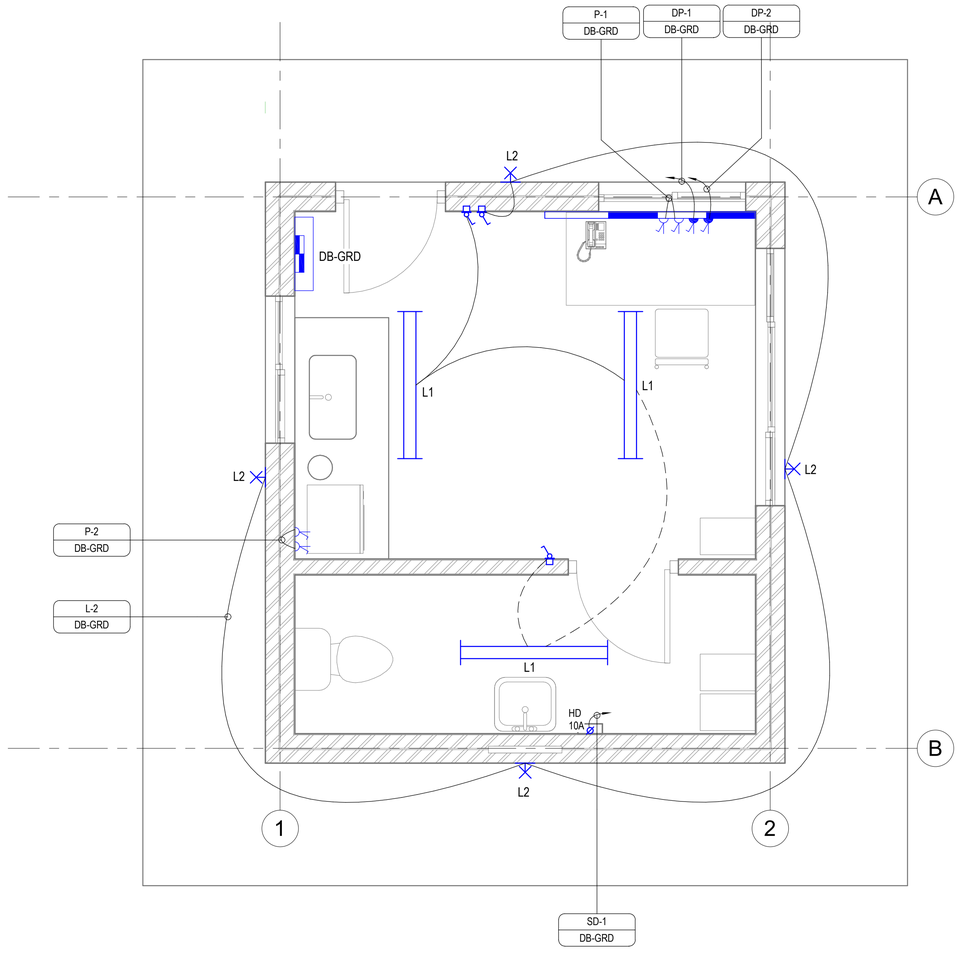
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AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	05/2024

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113503 - 3500-DRG-CC-0010 - T0
PROJECT No. DRAWING No. REV.

A1 ORIGINAL PAGE SIZE
SHEET 4 OF 4
FILE No.



LIGHTING AND POWER PLAN
1 : 25

LEGEND	
L2 WALL	TYPE L2 - 26W BULKHEAD LED WALL MOUNTED
L3	TYPE L3 - 46W LED FITTING
	LIGHT SWITCH RECESSED MOUNTED AT 1100mm AFFL UNLESS SHOWN OTHERWISE
E	DENOTES EMERGENCY LIGHT FITTING WITH BATTERY BACKUP
	SINGLE SOCKET OUTLET TO BE INSTALLED AT 300mm TO BOTTOM OF OUTLET UNLESS OTHERWISE INDICATED
	RED DEDICATED SINGLE SOCKET OUTLET
	SINGLE PHASE ISOLATOR - RATING AS INDICATED
	CONDUIT LINK
	WIRING
T	TELEPHONE POINT - TO BE INSTALLED AT 300mm TO BOTTOM OF OUTLET UNLESS \OTHERWISE INDICATED
D	DATA POINT - TO BE INSTALLED AT 300mm TO BOTTOM OF OUTLET UNLESS \OTHERWISE INDICATED
	2 TIER POWER SKIRTING
	NEW DISTRIBUTION BOARD

COMMON ABBREVIATIONS:

- AFFL - DENOTES ABOVE FINISHED FLOOR LEVEL
- WP - DENOTES WEATHER PROOF, MINIMUM RATING IP54

NOTES:

1. ALL MEASUREMENTS ARE IN MILLIMETERS UNLESS SPECIFIED OTHERWISE.
2. ELECTRICAL INSTALLATION TO COMPLY WITH SANS 10142-1 & SANS 10142-2.
3. ALL CONDUIT/CABLING WORK TO BE RECESSED MOUNTED.
4. PHOTOCELL TO SWITCH EXTERNAL LIGHTS BY MEANS OF 2 POLE CONTACTOR IN DB.
5. REFER TO LUMINAIRE SCHEDULE FOR LIGHT FITTING DETAILS.
6. ALL CIRCUITING TO BE WIRED AS FOLLOWS:
   - 25mmØ PVC RECESSED CONDUITS IN VERTICAL ELEMENTS
   - 25mmØ GALVANIZED STEEL SURFACE MOUNTED CONDUITS BELOW SOFFITS (TYPICALLY LINKING ELEMENTS TO CLOSEST TRAYS/CONDUIT)
   - ALL EXPOSED CONDUITS TO FOLLOW A GRID FORMATION, RUNNING AT 90° ANGLES RELEVANT TO CONDUITS/WALLS.
   - ALL EXPOSED CONDUITS TO BE GALVANIZED STEEL.
7. RECESSED 50mm DIAMETER PVC SLEEVE INSTALLED IN BRICK WALL CAVITY FROM BOTTOM OF DB (TERMINATED CW GLANDING) TO CABLE TRENCH OR ELECTRICAL MANHOLE, CW SLOW BEND
8. ALL POWER POINTS TO BE RECESSED AT 500mm AFFL CENTER OF BOX, UNLESS SPECIFIED OTHERWISE.

NOTE:
FOR LIGHTING REFER TO LIGHTING SCHEDULE FOR SPECIFICATIONS.

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ECSA REG. No.	20130291		28-07-21
CHECKED BY:			
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ECSA REG. No.			

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PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

ELECTRICAL - GUARD HOUSE
SMALL POWER AND LIGHTING LAYOUT

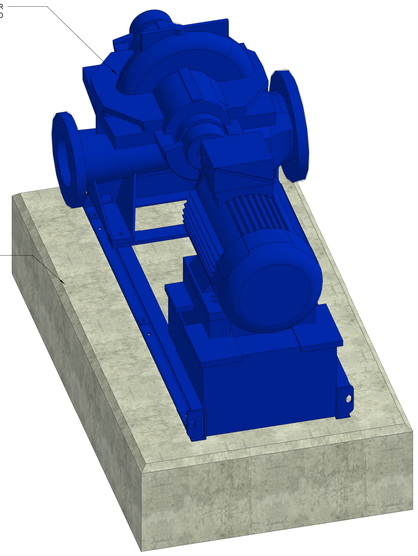
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	SIGNATURE	DATE	
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REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	05/2024

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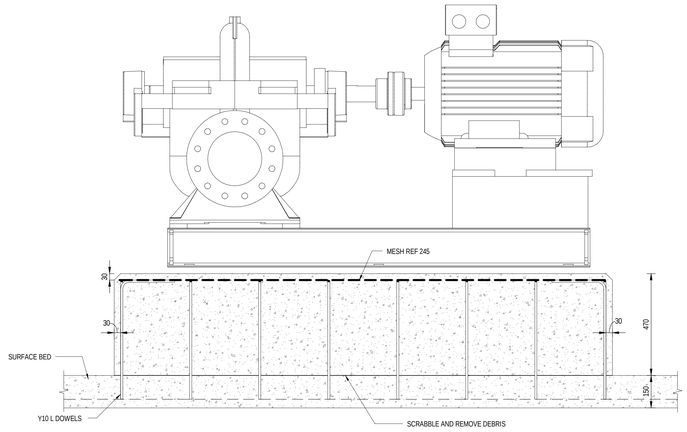
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PROJECT No. DRAWING No. REV.

A1 ORIGINAL PAGE SIZE
SHEET 1 OF 1
FILE No.



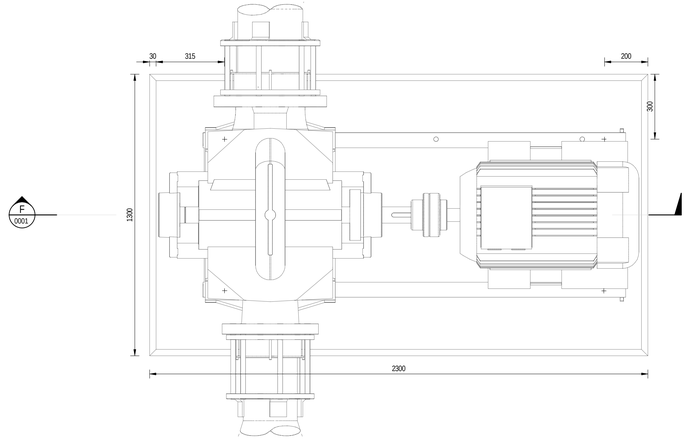
ISOMETRIC VIEW : PUMP PLINT

NTS



SECTION F 0001

1 : 10

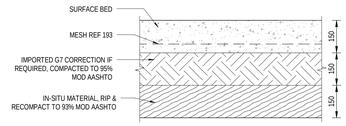


PUMP PLINTH PLAN VIEW

SCALE 1 : 10

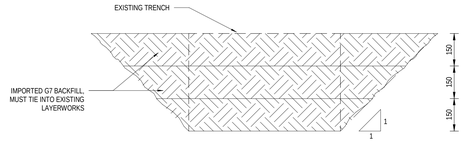
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3. THE CONTRACTOR SHALL SURVEY ALL ABOVE GROUND AND UNDERGROUND PIPES TO CONFIRM THE LEVELS AND SHALL PROVIDE SURVEY INFORMATION TO THE ENGINEER
4. ALL DIMENSIONS ARE TO BE CONFIRMED BY THE CONTRACTOR ON SITE
5. CORROSION PROTECTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
6. RE-ENFORCEMENT STEEL SHALL BE MINIMUM 50 mm CLEAR OF PUDDLE PIPE AND FLANGES.
7. ALL PLINTHS ARE TO BE CAST AFTER SURFACE BED
8. ALL PLINTHS MUST HAVE A MINIMUM THICKNESS OF 200 MM
9. ALL BOLTS MUST BE AT LEAST 60 MM AWAY FROM THE EDGES AND INSIDE THE REINFORCEMENT
10. ANCHOR BOLTS MUST BE 150 MM DEEP INTO THE PLINTHS
11. ALL STEEL BOLTS, NUTS AND WASHERS SHALL BE GRADE 8.8 HOT DIPPED MILD STEEL. ANCHOR BOLTS TO BE 16 MM
12. THE LEVELS AND DIMENSIONS ARE BASED ON THE TOPOGRAPHIC SURVEY AND AVAILABLE INFORMATION AT THE DESIGN STAGE. THE CONTRACTOR SHALL ENSURE THAT ALL EXISTING SERVICES ARE SURVEYED. IF ANY IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
13. FOR MECHANICAL DRAWINGS, REFER TO DRAWING No. 113503-3120-DRG-MM-0001
14. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN AND SHALL BE CHECKED BY THE CONTRACTOR BEFORE ORDERING ANY MATERIAL ANY DISCREPANCIES MUST BE REPORTED TO ENGINEER.
15. ALL LEVELS ARE IN METERS ABOVE SEA LEVEL UNLESS OTHERWISE SHOWN
16. CONCRETE CLASSES SHALL BE AS FOLLOWS:
    - CLASS 35/19 35 MPa TO ALL CONCRETE UNLESS OTHERWISE SHOWN
    - CLASS 15/19 15 MPa TO BLINDING AND MASS CONCRETE FILLING
17. CONCRETE FINISHES SHALL BE AS FOLLOWS. EXCEPT WHERE OTHERWISE SHOWN:
    - SMOOTH SPECIAL TO SURFACES EXPOSED TO VIEW
    - ROUGH TO SURFACES AGAINST WHICH BACKFILL OR FURTHER CONCRETE WILL BE PLACED
    - FLOOR FINISHES INSIDE CRAMERS AND PULP STATIONS TO BE WOOD FLOATED
18. ALL EXPOSED EDGES TO HAVE 20X20 CHAMFERS.
19. INSULATION MATERIAL MUST BE PLACED BETWEEN DISSIMILAR METALS.
20. CONCRETE TO BE PLACED ON A 50 MM BLINDING LAYER
21. FOR ISOLATION JOINT, SAWCUT JOINT AND GENERAL STRUCTURAL DETAILS SEE DRAWINGS:
    - 113503-2120-DRG-SS-0005
22. ALL PIPEWORK IS INDICATIVE AND SHALL NOT BE MANUFACTURED FROM THIS DRAWING THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE PIPEWORK, VALVES AND SPECIALS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE DESIGN ENGINEER FOR APPROVAL BEFORE MANUFACTURING OR FABRICATION COMMENCES. THE DESIGN MUST BE IN ACCORDANCE WITH THE MECHANICAL SPECIFICATION.
23. THE LEVELS AND DIMENSIONS ARE BASED ON THE AVAILABLE INFORMATION AT THE TENDER STAGE THE CONTRACTOR SHALL ENSURE THAT ALL EXISTING SERVICES ARE SURVEYED. IF ANY DISCREPANCIES ARISE OR DESIGN CHANGES ARE REQUIRED, IT MUST IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.



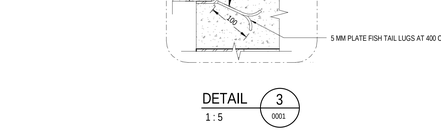
PUMPSTATION FLOOR LAYERWORKS

1 : 10



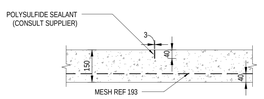
PUMPSTATION EXISTING TRENCH BACKFILL

1 : 10



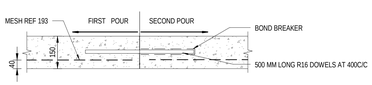
DETAIL 3 0001

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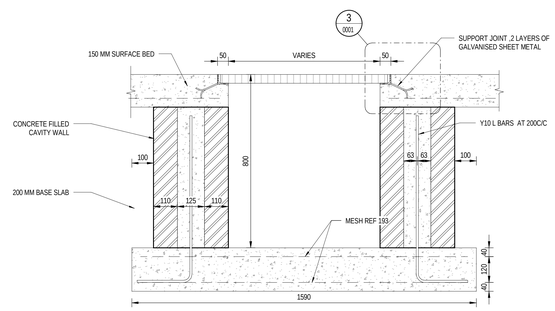
SAW CUT JOINT(S.J)

1 : 10



CONSTRUCTION JOINT (C.J)

1 : 10



CABLE TRENCH C-SECTION

1 : 10

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CHECKED:	S. MNQONYWA		29.01.2024
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PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

TYPICAL DETAILS AND STANDARDS
PUMP PLINTH, JOINTS, CABLE TRENCHES, FLOOR LAYERWORKS & EXISTING TRENCH BACKFILL

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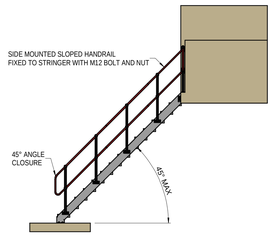
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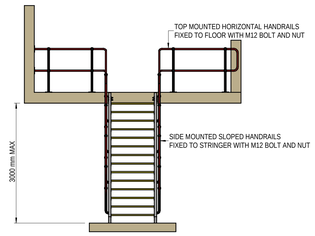
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4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
5. ALL STEEL BOLTS AND NUTS AND ANCHOR BOLTS INTO CONCRETE SHALL BE STAINLESS STEEL GRADE 304.
6. UNLESS OTHERWISE SHOWN, ALL STEEL WORK SHALL BE GALVANISED GRADE 350WA IN ACCORDANCE WITH SANS 50025

LEGEND

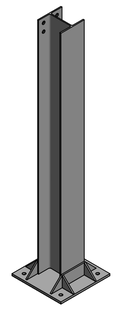
FFL: FINISHED FLOOR LEVEL
TOC: TOP OF CONCRETE



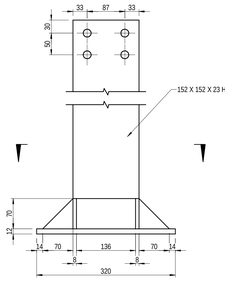
SIDE VIEW
1:50
STRAIGHT STAIRWAY



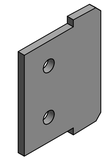
FRONT VIEW
1:50
STRAIGHT STAIRWAY



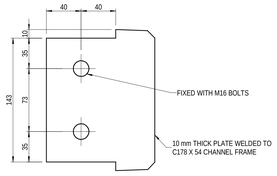
ISOMETRIC VIEW
1:10



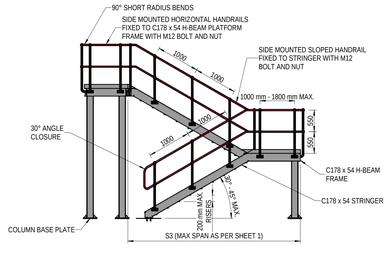
SIDE VIEW
1:5



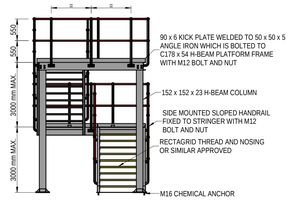
ISOMETRIC VIEW
1 : 2.5



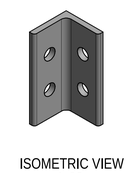
NODGE PLATE FOR C178 x 54 CHANNEL
1 : 2.5



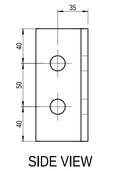
SIDE VIEW
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MULTI LEVEL DIRECTIONAL CHANGE STAIRWAY



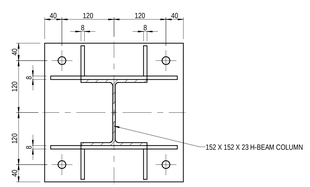
FRONT VIEW
1:50
MULTI LEVEL DIRECTIONAL CHANGE STAIRWAY



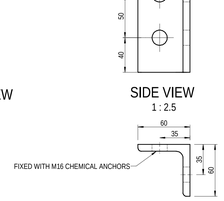
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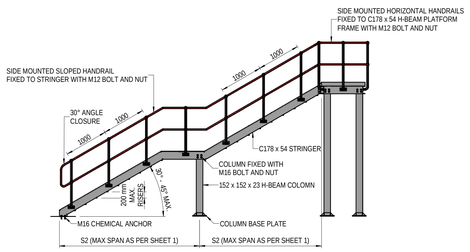
SIDE VIEW
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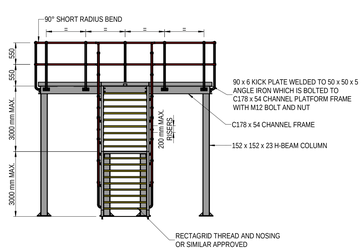
SECTION VIEW
COLUMN BASE PLATE
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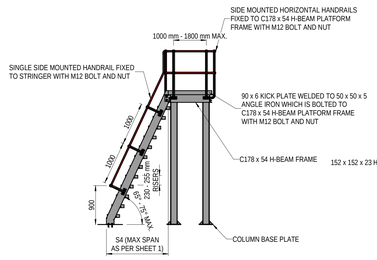
STAIRS FIXING BRACKET
FOR CONNECTING TO CONCRETE
1 : 2.5



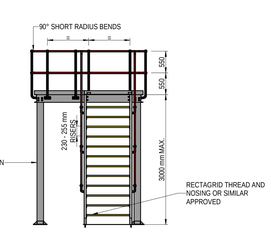
SIDE VIEW
1:50
MULTI LEVEL STRAIGHT STAIRWAY



FRONT VIEW
1:50
MULTI LEVEL STRAIGHT STAIRWAY



SIDE VIEW
1:50
STEP LADDER



FRONT VIEW
1:50
STEP LADDER

GENERAL NOTES

1. ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS REQUIREMENTS.
2. ALL DIMENSIONS ARE IN MILLIMETER, UNLESS OTHERWISE SPECIFIED.
3. DO NOT SCALE FROM THESE DRAWINGS.
4. ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
5. THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS.
6. FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.
7. SHOP DRAWINGS TO BE SUBMITTED TO ENGINEER FOR APPROVAL

CONSULTING ENGINEERS
ZUTARI IMPACT. ENGINEERED.
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OXFORD CORNER
ROSEBANK
SOUTH AFRICA

CLIENT
17 HARRISON STREET
MARSHALLTOWN
2107

DESIGNED	ZUT	31.01.24
DRAWN	ZUT	31.01.24
CHECKED	ZUT	31.01.24
APPROVED BY:	S.MNQONYWA	31.01.24
	SIGNATURE	DATE
ECSA REG No.		
CHECKED BY:		
	SIGNATURE	DATE
ECSA REG No.		

Johannesburg Water

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PERTH EMPIRE CORRIDORS OF FREEDOM WATER UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT
TYPICAL DETAILS AND STANDARDS
STAIRCASES

APPROVAL BY JW DEPOT		
CHECKED		
APPROVED BY:		
	SIGNATURE	DATE
APPROVAL BY JW PLANNING		
CHECKED		
APPROVED BY:		
	SIGNATURE	DATE

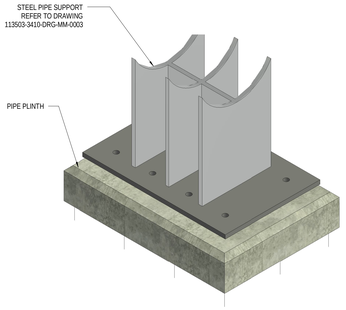
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REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	31.01.24

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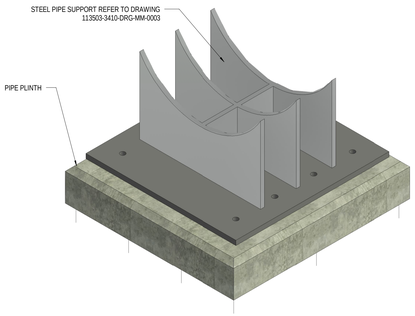
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PROJECT No. DRAWING No. REV.

A0 ORIGINAL PAGE SIZE
SHEET 1 OF 1
FILE No.
DATE:



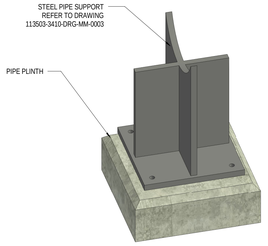
ISOMETRIC VIEW : PIPE PLINTH TYPE 1

NTS



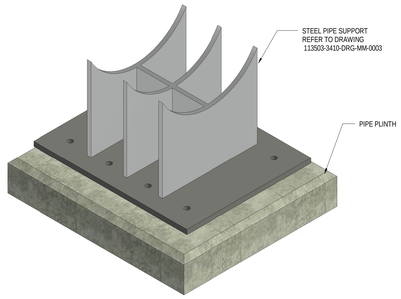
ISOMETRIC VIEW : PIPE PLINTH TYPE 2

NTS



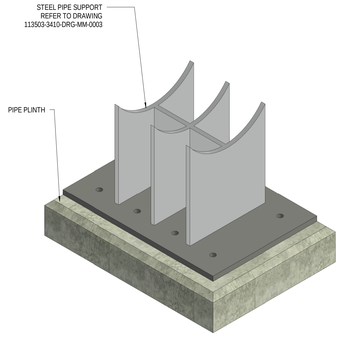
ISOMETRIC VIEW : PIPE PLINTH TYPE 3

NTS



ISOMETRIC VIEW : PIPE PLINTH TYPE 4

NTS

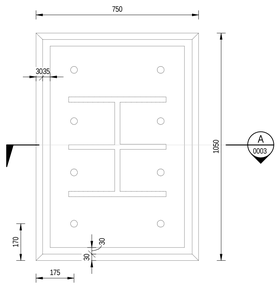


ISOMETRIC VIEW : PIPE PLINTH TYPE 5

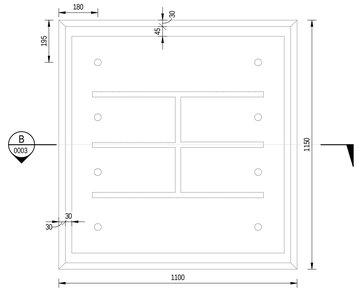
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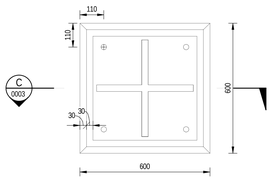
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3. THE CONTRACTOR SHALL SURVEY ALL ABOVE GROUND AND UNDERGROUND PIPES TO CONFIRM THE LEVELS AND SHALL PROVIDE SURVEY INFORMATION TO THE ENGINEER
4. ALL DIMENSIONS ARE TO BE CONFIRMED BY THE CONTRACTOR ON SITE
5. CORROSION PROTECTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
6. RE-ENFORCEMENT STEEL SHALL BE MINIMUM 50 mm CLEAR OF PUDDLE PIPE AND FLANGES.
7. ALL PLINTHS ARE TO BE CAST AFTER SURFACE BED
8. ALL PLINTHS MUST HAVE A MINIMUM THICKNESS OF 200 MM
9. ALL BOLTS MUST BE AT LEAST 60 MM AWAY FROM THE EDGES AND INSIDE THE REINFORCEMENT
10. ANCHOR BOLTS MUST BE 150 MM DEEP INTO THE PLINTHS
11. ALL STEEL BOLTS, NUTS AND WASHERS SHALL BE GRADE 8.8 HOT DIPPED MILD STEEL. ANCHOR BOLTS TO BE 16 MM
12. THE LEVELS AND DIMENSIONS ARE BASED ON THE TOPOGRAPHIC SURVEY AND AVAILABLE INFORMATION AT THE DESIGN STAGE. THE CONTRACTOR SHALL ENSURE THAT ALL EXISTING SERVICES ARE SURVEYED. IF ANY IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
13. FOR MECHANICAL DRAWINGS, REFER TO DRAWING No. 113503-3120-DRG-MM-0001
14. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN AND SHALL BE CHECKED BY THE CONTRACTOR BEFORE ORDERNG ANY MATERIAL ANY DISCREPANCIES MUST BE REPORTED TO ENGINEER.
15. ALL LEVELS ARE IN METERS ABOVE SEA LEVEL UNLESS OTHERWISE SHOWN
16. CONCRETE CLASSES SHALL BE AS FOLLOWS:
    - CLASS 35/19 35 MPa TO ALL CONCRETE UNLESS OTHERWISE SHOWN
    - CLASS 15/19 15 MPa TO BLINDING AND MASS CONCRETE FILLING
17. CONCRETE FINISHES SHALL BE AS FOLLOWS. EXCEPT WHERE OTHERWISE SHOWN:
    - SMOOTH SPECIAL TO SURFACES EXPOSED TO VIEW
    - ROUGH TO SURFACES AGAINST WHICH BACKFLL OR FURTHER CONCRETE WILL BE PLACED
    - FLOOR FINISHES INSIDE CRAMERS AND PULP STATIONS TO BE WOOD FLOATED
18. ALL EXPOSED EDGES TO HAVE 20X20 CHAMFERS.
19. INSULATION MATERIAL MUST BE PLACED BETWEEN DISSIMILAR METALS.
20. CONCRETE TO BE PLACED ON A 50 MM BLINDING LAYER
21. FOR ISOLATION JOINT, SAWCUT JOINT AND GENERAL STRUCTURAL DETAILS SEE DRAWINGS:
    - 113503-2120-DRG-SS-0005
22. ALL PIPEWORK IS INDICATIVE AND SHALL NOT BE MANUFACTURED FROM THIS DRAWING THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE PIPEWORK, VALVES AND SPECIALS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE DESIGN ENGINEER FOR APPROVAL BEFORE MANUFACTURING OR FABRICATION COMMENCES. THE DESIGN MUST BE IN ACCORDANCE WITH THE MECHANICAL SPECIFICATION.
23. THE LEVELS AND DIMENSIONS ARE BASED ON THE AVAILABLE INFORMATION AT THE TENDER STAGE THE CONTRACTOR SHALL ENSURE THAT ALL EXISTING SERVICES ARE SURVEYED. IF ANY DISCREPANCIES ARISE OR DESIGN CHANGES ARE REQUIRED, IT MUST IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.



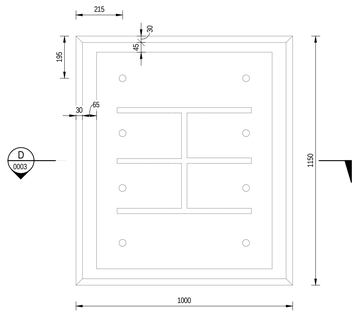
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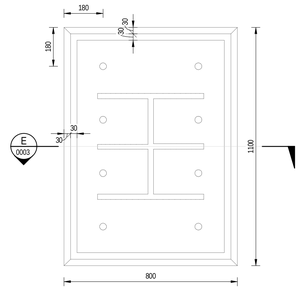
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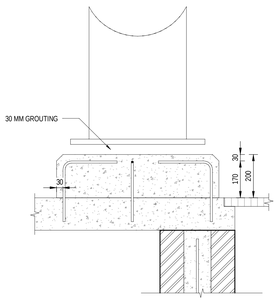
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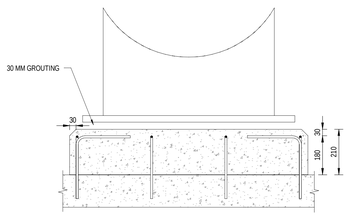
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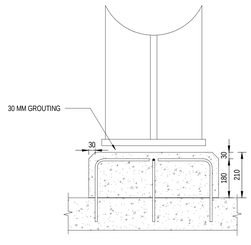
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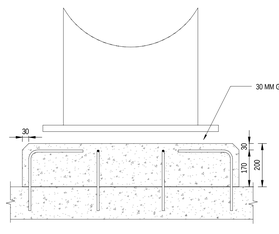
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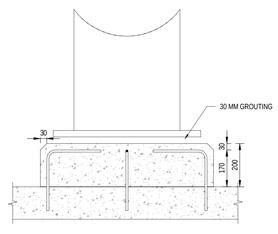
SECTION B / 0002 — 1 : 10



SECTION C / 0002 — 1 : 10



SECTION D / 0002 — 1 : 10



SECTION E / 0002 — 1 : 10

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CLIENT

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2107

DESIGNED:	N. NXUMALO	29.01.2024
DRAWN:	N. NXUMALO	29.01.2024
CHECKED:	S. MNQONYWA	29.01.2024
APPROVED BY:	C. KAN	29.01.2024
	SIGNATURE	DATE
ECSA REG No:		
CHECKED BY:		
	SIGNATURE	DATE
ECSA REG No:		

Johannesburg Water

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TEL: (011) 688-1400

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Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

TYPICAL DETAILS AND STANDARDS
PIPE SUPPORT PLINTHS

APPROVAL BY JW DEPOT			
CHECKED:			
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
APPROVED BY:			
	SIGNATURE BY:	DATE:	

SCALE: AS SHOWN

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	29.01.24

DRAWING No.

113503 - 2120 - DRG - SS - 0003 - T0

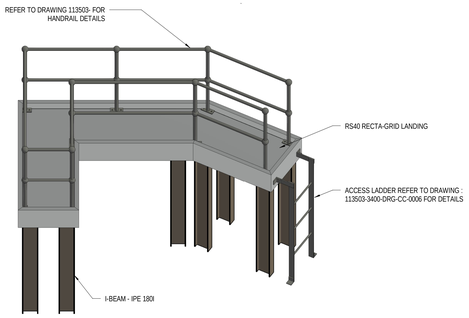
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SHEET 1 OF 1

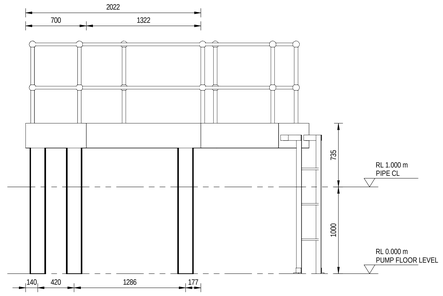
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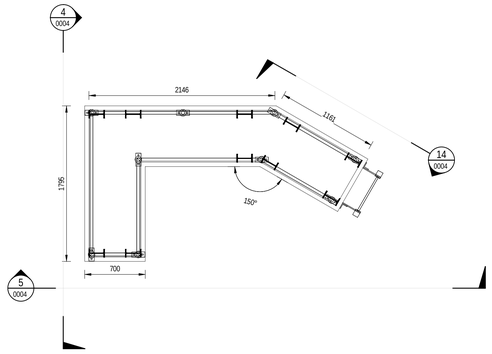
ISIMETRIC VIEW: LOW LEVEL ACCESS PODIUM TYPE 1

NTS



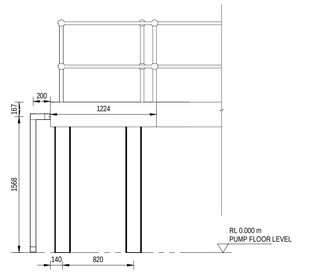
ELEVATION VIEW: LOW LEVEL ACCESS PODIUM TYPE 1

SCALE 1 : 25



PLAN VIEW: LOW LEVEL ACCESS PODIUM TYPE 1

SCALE 1 : 25



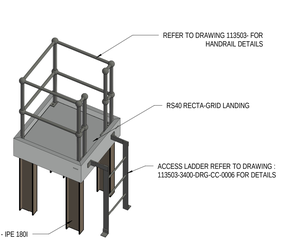
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SCALE 1 : 25

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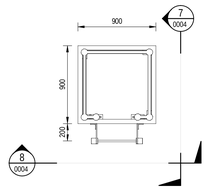
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15. * REFER TO DRAWING 113503-2120-DRG-SS-XXXX. FOR CONNECTION DETAILS
16. ALL LEVELS ARE IN METERS ABOVE SEA LEVEL UNLESS OTHERWISE SHOWN
17. CONCRETE CLASSES SHALL BE AS FOLLOWS:
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    - CLASS 15/19 15 MPa TO BLINDING AND MASS CONCRETE FILLING

    CONCRETE FINISHES SHALL BE AS FOLLOWS. EXCEPT WHERE OTHERWISE SHOWN:
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    - ROUGH TO SURFACES AGAINST WHICH BACKFILL OR FURTHER CONCRETE WILL BE PLACED
    - FLOOR FINISHES INSIDE CRAMERS AND PULP STATIONS TO BE WOOD FLOATED
18. ALL EXPOSED EDGES TO HAVE 20X20 CHAMFERS.
19. INSULATION MATERIAL MUST BE PLACED BETWEEN DISSIMILAR METALS.
20. CONCRETE TO BE PLACED ON A 50 MM BLINDING LAYER
21. FOR ISOLATION JOINT, SAWCUT JOINT AND GENERAL STRUCTURAL DETAILS SEE DRAWINGS:
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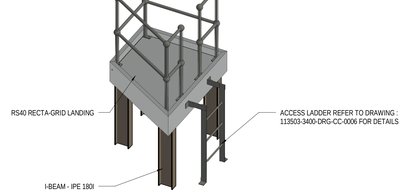
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NTS



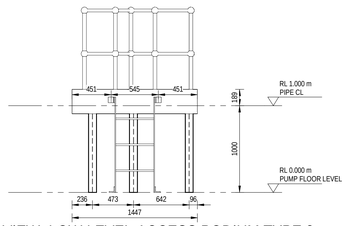
PLAN VIEW: LOW LEVEL ACCESS PODIUM TYPE 2

SCALE 1 : 25



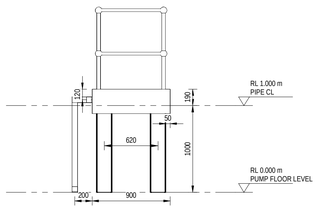
ISIMETRIC VIEW: LOW LEVEL ACCESS PODIUM TYPE 3

SCALE



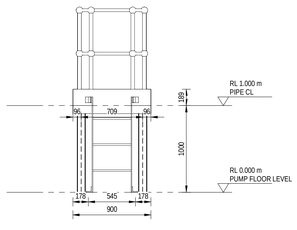
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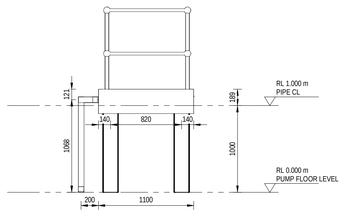
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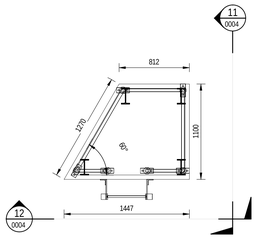
ELEVATION VIEW: LOW LEVEL ACCESS PODIUM TYPE 2

SCALE 1 : 25



ELEVATION VIEW: LOW LEVEL ACCESS PODIUM TYPE 3

SCALE 1 : 25



PLAN VIEW: LOW LEVEL ACCESS PODIUM TYPE 3

SCALE 1 : 25

CONSULTING ENGINEERS ZUTARI IMPACT. ENGINEERED. 32A JELLICOE AVENUE OXFORD CORNER ROSEBANK SOUTH AFRICA TEL: +27 11 214 4500	DESIGNED:	N. NXUMALO	29.01.2024
	DRAWN:	N. NXUMALO	29.01.2024
	CHECKED:	S. MNQONYWA	29.01.2024
	APPROVED BY:	C. KAN	29.01.2024
		SIGNATURE	DATE
	ECSA REG No:		
CLIENT 17 HARRISON STREET MARSHALLTOWN 2107	CHECKED BY:		
		SIGNATURE	DATE
	ECSA REG No:		

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

TEL: (011) 688-1400

FAX: (011) 688-1529

Joburg

PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

CROSBY PUMP STATION
TYPICAL DETAIL
LOW-LEVEL ACCESS PODIUM

APPROVAL BY JW DEPOT			SCALE
CHECKED:			AS SHOWN
APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
APPROVED BY:			
	SIGNATURE BY:	DATE:	

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	29.01.24

DRAWING No.

113503	-	2120 - DRG - SS - 0004	-	T0
PROJECT No.		DRAWING No.		REV.

A0 ORIGINAL PAGE SIZE | SHEET 1 OF 1

FILE No.

Plot Date: 2024/01/29 14:30:39 Filename: BAB 3600 AM 113503 Bronze Reservoir and Tower Africa\113503_3000_BECOMEASURED_PS_WITH_SSFROMTE_GRAVITY_FEEDV.rvt Other: SS



FLOOR LAYOUT - PLAN VIEW

SCALE 1 : 50

NOTES:

1. DRAWINGS MUST NOT BE SCALED.
2. ACCORDING TO THE COPYRIGHT ACT (ACT No 98 OF 1978) NO PART OF THIS DOCUMENT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WHATSOEVER INCLUDING MECHANICAL, ELECTRONIC, PHOTOCOPYING, MICROFILMING OR ANY OTHER SYSTEM OF INFORMATION STORAGE WITHOUT WRITTEN PERMISSION OF ZUTARI.
3. THE CONTRACTOR SHALL SURVEY ALL ABOVE GROUND AND UNDERGROUND PIPES TO CONFIRM THE LEVELS AND SHALL PROVIDE SURVEY INFORMATION TO THE ENGINEER
4. ALL DIMENSIONS ARE TO BE CONFIRMED BY THE CONTRACTOR ON SITE
5. CORROSION PROTECTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
6. RE-ENFORCEMENT STEEL SHALL BE MINIMUM 50 mm CLEAR OF PUDDLE PIPE AND FLANGES.
7. ALL PLINTHS ARE TO BE CAST AFTER SURFACE BED
8. ALL PLINTHS MUST HAVE A MINIMUM THICKNESS OF 200 MM
9. ALL BOLTS MUST BE AT LEAST 60 MM AWAY FROM THE EDGES AND INSIDE THE REINFORCEMENT
10. ANCHOR BOLTS MUST BE 150 MM DEEP INTO THE PLINTHS
11. ALL STEEL BOLTS, NUTS AND WASHERS SHALL BE GRADE 8.8 HOT DIPPED MILD STEEL, ANCHOR BOLTS TO BE 16 MM
12. THE LEVELS AND DIMENSIONS ARE BASED ON THE TOPOGRAPHIC SURVEY AND AVAILABLE INFORMATION AT THE DESIGN STAGE. THE CONTRACTOR SHALL ENSURE THAT ALL EXISTING SERVICES ARE SURVEYED. IF ANY IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
13. FOR MECHANICAL DRAWINGS, REFER TO DRAWING No. 113503-3120-DRG-MM-0001
14. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN AND SHALL BE CHECKED BY THE CONTRACTOR BEFORE ORDERING ANY MATERIAL ANY DISCREPANCIES MUST BE REPORTED TO ENGINEER.
15. ALL LEVELS ARE IN METERS ABOVE SEA LEVEL UNLESS OTHERWISE SHOWN
16. CONCRETE CLASSES SHALL BE AS FOLLOWS:
    - CLASS 35/19 35 MPa TO ALL CONCRETE UNLESS OTHERWISE SHOWN
    - CLASS 15/19 15 MPa TO BLINDING AND MASS CONCRETE FILLING
17. CONCRETE FINISHES SHALL BE AS FOLLOWS. EXCEPT WHERE OTHERWISE SHOWN:
    - SMOOTH SPECIAL TO SURFACES EXPOSED TO VIEW
    - ROUGH TO SURFACES AGAINST WHICH BACKFLL OR FURTHER CONCRETE WILL BE PLACED
    - FLOOR FINISHES INSIDE CRAMERS AND PULP STATIONS TO BE WOOD FLOATED
18. ALL EXPOSED EDGES TO HAVE 20X20 CHAMFERS.
19. INSULATION MATERIAL MUST BE PLACED BETWEEN DISSIMILAR METALS.
20. CONCRETE TO BE PLACED ON A 50 MM BLINDING LAYER
21. FOR ISOLATION JOINT, SAWCUT JOINT AND GENERAL STRUCTURAL DETAILS SEE DRAWINGS:
    - 113503-2120-DRG-SS-0005
22. ALL PIPEWORK IS INDICATIVE AND SHALL NOT BE MANUFACTURED FROM THIS DRAWING THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE PIPEWORK, VALVES AND SPECIALS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE DESIGN ENGINEER FOR APPROVAL BEFORE MANUFACTURING OR FABRICATION COMMENCES. THE DESIGN MUST BE IN ACCORDANCE WITH THE MECHANICAL SPECIFICATION.
23. THE LEVELS AND DIMENSIONS ARE BASED ON THE AVAILABLE INFORMATION AT THE TENDER STAGE THE CONTRACTOR SHALL ENSURE THAT ALL EXISTING SERVICES ARE SURVEYED. IF ANY DISCREPANCIES ARISE OR DESIGN CHANGES ARE REQUIRED, IT MUST IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.

LEGEND :

CONSTRUCTION JOINTS
SAW CUT JOINTS

CONSULTING ENGINEERS
ZUTARI IMPACT. ENGINEERED.
32A JELLICOE AVENUE
OXFORD CORNER
ROSEBANK
SOUTH AFRICA TEL: +27 11 214 4500

CLIENT
17 HARRISON STREET
MARSHALLTOWN
2107

DESIGNED:	N. NXUMALO	29.01.2024
DRAWN:	N.NXUMALO	29.01.2024
CHECKED:	S. MNQONYWA	29.01.2024
APPROVED BY:	C. KAN	29.01.2024
	SIGNATURE	DATE
ECSA REG No:		
CHECKED BY:		
	SIGNATURE	DATE
ECSA REG No:		

Johannesburg Water

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PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE
CROSBY BULK INFRASTRUCTURE PROJECT

CROSBY PUMP STATION
FLOOR PLAN
CONCRETE JOINT DETAIL

APPROVAL BY JW DEPOT			SCALE
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APPROVED BY:			
	SIGNATURE BY:	DATE:	
APPROVAL BY JW PLANNING			
CHECKED:			
APPROVED BY:			
	SIGNATURE BY:	DATE:	

AMENDMENTS		
REV:	DESCRIPTION	DATE:
T0	ISSUED FOR TENDER	29.01.24

DRAWING No.

113503 - 2120 - DRG - SS - 0005 - T0

PROJECT No. | DRAWING No. | REV.

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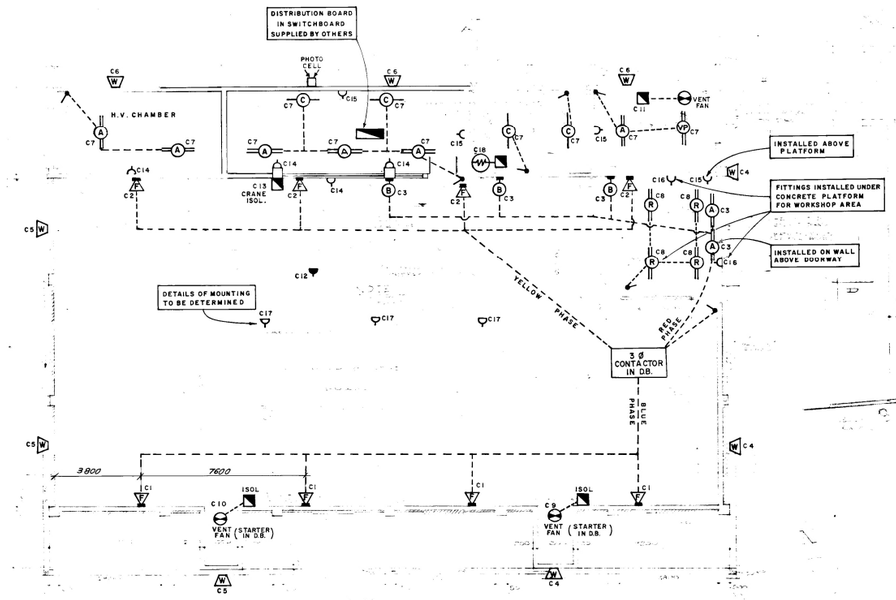
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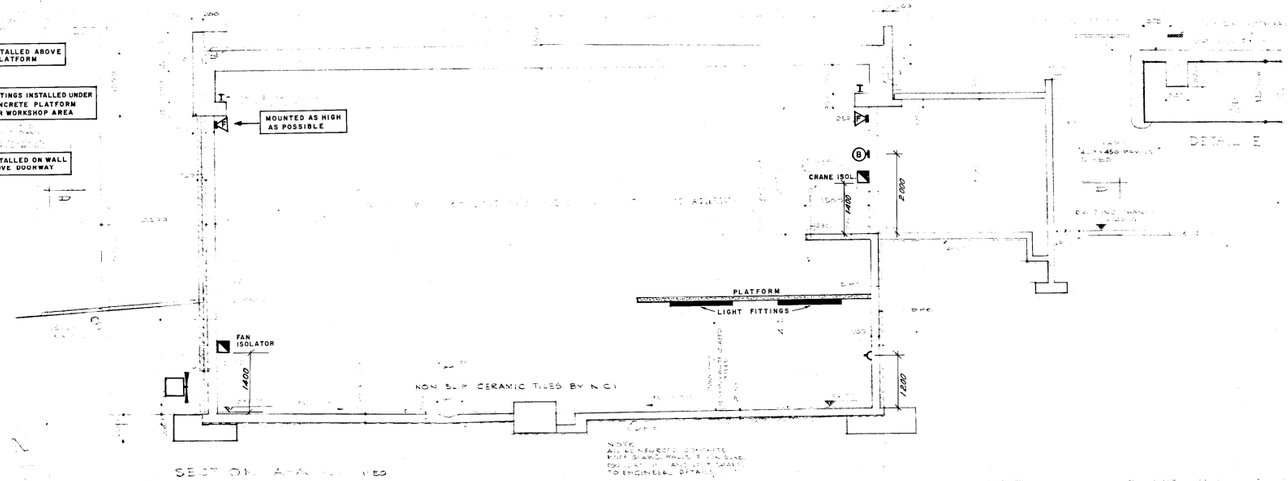
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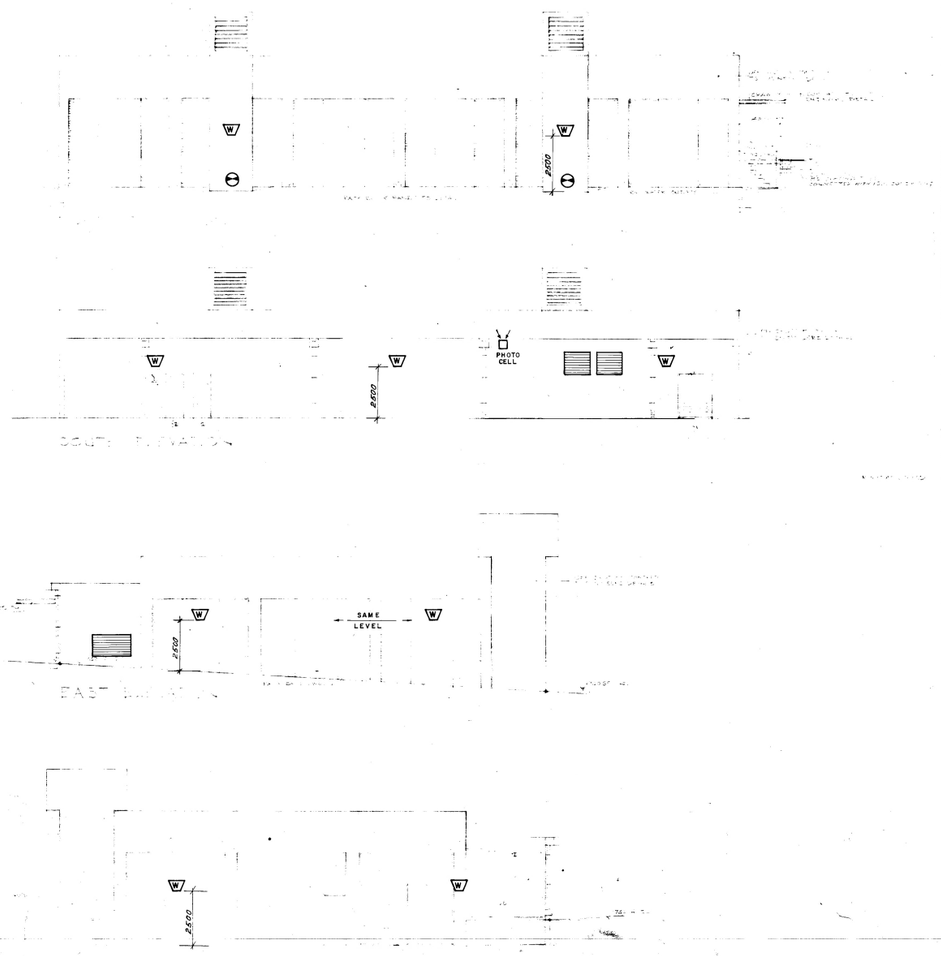
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Date: 2024/01/29 14:30:43 Office: SS

CROSBY REC. PUMP STATION - ELECTRICAL INSTALLATION

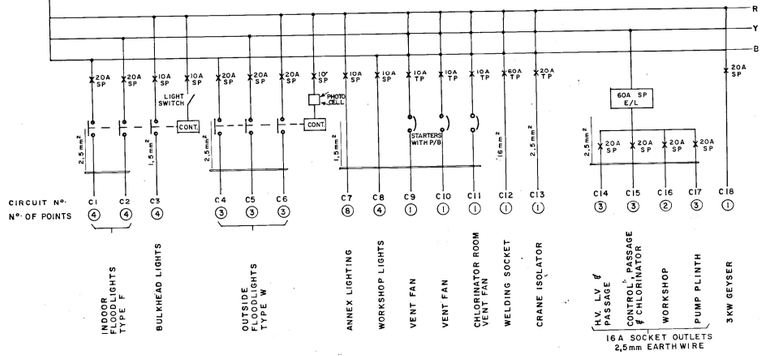
DRAWING N° / TEKENING NR 21353







ELECTRICAL SCHEMATIC



LEGEND

- W — PHOSWARE WALL MOUNTED FITTING 125WATT MERCURY VAPOUR LAMP. MOUNTING HEIGHT 2500
- (A) — 1,5 m FLUORESCENT CHANNEL TWIN TUBE SEMI-RESONANT.
- (C) — 1,5 m FLUORESCENT CHANNEL SINGLE TUBE SEMI-RESONANT. TO JED SPECIFICATION.
- (VP) — 1,5m FLUORESCENT VAPOUR PROOF TWIN TUBE SEMI-RESONANT TO JED SPECIFICATION.
- (R) — 1,5m FLUORESCENT INDUSTRIAL REFLECTOR TWIN TUBE SEMI-RESONANT TO JED SPECIFICATION.
- (B) — TWO LAMP FLUORESCENT BULKHEAD FITTING.
- SIMPLEX REFLECTO FLOOD WITH METAL REFLECTOR AND INTEGORAL GEAR FOR 400WATT H.P. MERCURY LAMP.
- LOCKABLE ISOLATOR RATED TO SUIT CIRCUIT.
- 15AMP SWITCH SOCKET OUTLET.
- 60AMP T.P & N WELDING SOCKET OUTLET.
- PHOTO ELECTRICAL CELL.
- 5AMP SWITCH
- TWO WAY SWITCH.
- VENT FAN MOTOR

EC1709

BASED ON CED DRAWING 81-59

NOTES
NOTAS

1. ELECTRICAL CONTRACTOR TO CO-ORDINATE DETAILS WITH VENTILATION CONTRACTOR.
2. CRANE SUPPLY — ELECTRICAL CONTRACT COVERS SUPPLY TO AND OF THE ISOLATOR ONLY. CRANE CONTRACTOR TO CONNECT FROM ISOLATOR TO CRANE.

AMENDMENTS / WYSIGINGS	DATE / DATUM

CITY OF JOHANNESBURG
ELECTRICITY DEPARTMENT

STAD JOHANNESBURG
ELEKTRISITEITSDEPT.

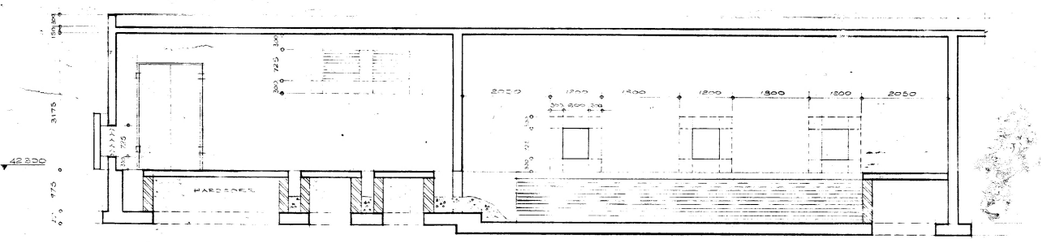
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DATE / DATUM	25-6-81
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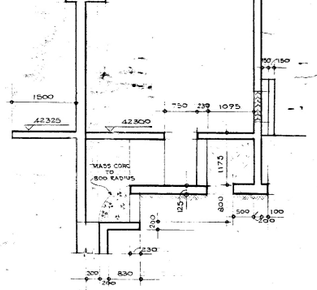
ELECTRICAL INSTALLATION
CROSBY PUMP STATION

FOR - VIR - WATER BRANCH

APPROVED / GOEDGEKEUR — I.C.E.

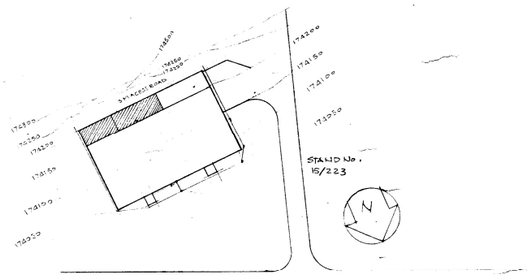
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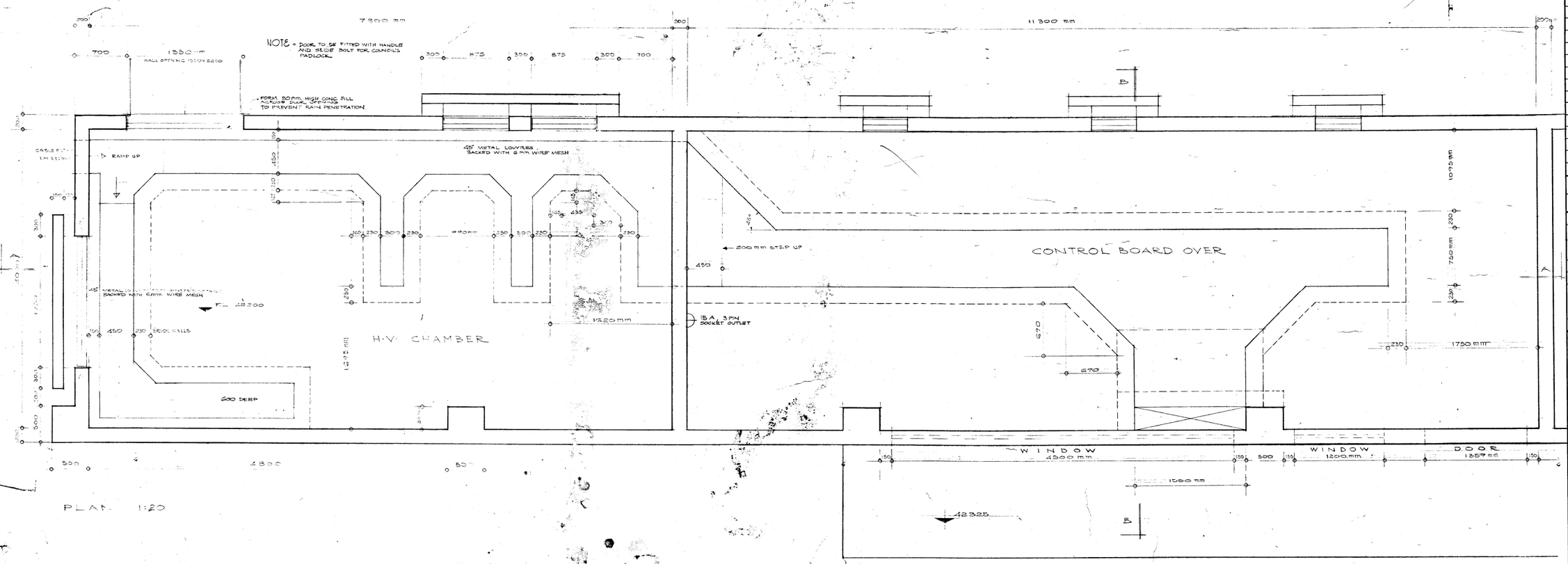




NOTE

- WALLS TO BE PAINTED WHITE INTERNALLY
- FLOOR: 25 mm GRANO FINISH AFTER CABLES HAVE BEEN INSTALLED. CABLE DUCTS TO BE FILLED WITH CLEAN DRY RIVER SAND AND TO BE FINISHED WITH CEMENT TOPPING.




7300 mm
11300 mm
700
1550 mm
WALL OPENING 1510 X 2250
NOTE: • DOOR TO BE FITTED WITH HANDLE AND SLIDE BOLT FOR COUNCILS PADLOCK
300
875
300
875
300
700
200
• FORM 50mm HIGH CONC FILL ACROSS DUAL OPENINGS TO PREVENT RAIN PENETRATION
CABLE DUCT 1 M DEEP
RAMP UP
45° METAL LOUVRES BACKED WITH 6 mm WIRE MESH
450
150
300
230
230
230

CROSBY RESERVOIR – PUMP STATION

GENERAL PLAN OF ROOF 1:100

SECTION A-A 1:50

Note: Sleeves to all pipes shown going through walls. Apply to water pipes, including feed pipe to tank in chamber, feed pipe to chlorinator, and feed pipes to both tanks.

NOTE
All reinforced concrete, roof slabs, walls, floors and beams to have waterstops as per details.

DETAIL E

NOTE
Provide (2) 2,25 Kgs. CO_2 Fire Extinguisher where indicated on plan.

NORTH ELEVATION 1:100

SOUTH ELEVATION 1:100

EAST ELEVATION 1:100

WEST ELEVATION 1:100

DETAIL B 1:10

DETAIL D through Column. 1:10

DETAIL C 1:10

FRONT ELEVATION

PART PLAN OF TYPICAL BRICK WALL

TYPICAL SECTION SCALE 1:5
DETAIL OF DOUBLE GLAZED WINDOWS D6W, D6W2
NOTE D/G W2 to be 4500 wide x 1200 high. in 3 panels.

D/G W1
ELEVATION SCALE 1:20

SITE PLAN 1:500

THE SERPENTINE

HARMONY RD.

501725

NOTES:
NOTAS:

AMENDMENTS:
WYSIGINGS:

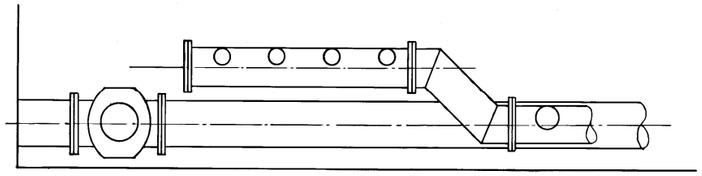
	DATE

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CHECKED / NAGESIEN: CARDOSO	SCALE / SKAAL 1:100 - 1:50 - 1:500
CHIEF ARCHITECT	M.O.H
HOOF ARGITEK	S.G.
CITY ENGINEER	
STADSINGENIEUR	

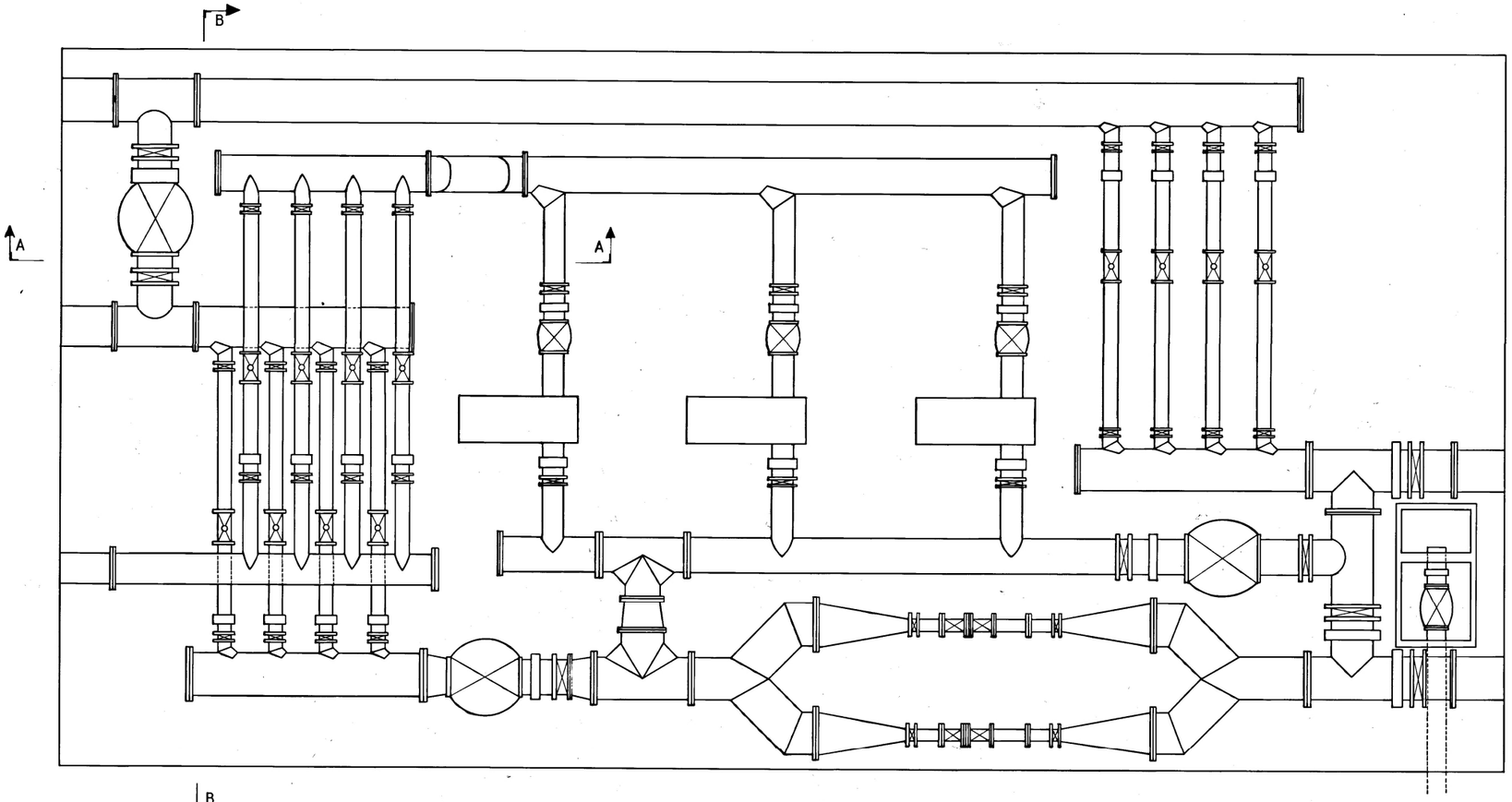
CITY ENGINEER'S DEPARTMENT
JOHANNESBURG
STADSINGENIEURSAFDELING

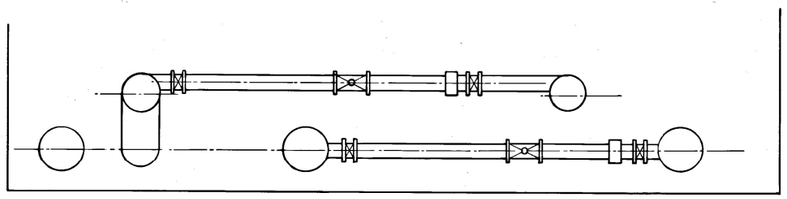
CROSBY RESERVOIR
PUMP STATION

DRAWING Nº
TEKENING Nr CED 81-59



SECTION A_A





SECTION B_B

50204

Reference marks and orf pegs must not be disturbed. Before displacement, the Chief Land Surveyor must be advised.

Verwysingsmerke en erfpenne mag nie verskuif word nie. Die Hoofgrondmeter moet daarvan in kennis gestel word voordat hulle verskuif word.

Work on private or mining properties must only be undertaken after registration of servitudes or Surface rights or with written consent of the owners.

Werk op private of mynei gendomme mag slegs na die registrasie van serwitute oppervlakteregte of met die skrifte like toestemming van die eienaars in aanvang neem.

SURVEYED - OPGEMEET	
DRAWN - GETEKEN	
TRACED - NAGETREK	16.02.84
CHECKED - NAGESIEN	
SERVICES CHECKED	
DIENSLEIDINGS NAGESIEN	
C.D. ENG.	HOI

CITY ENGINEER'S DEPT. JOHANNESBURG STADSINGENIEURSAFDELING

CROSBY RESERVOIR PUMPHOUSE

CROSBY OPGAARDAM POMPHUIS

SCALES SKALE: 1:50

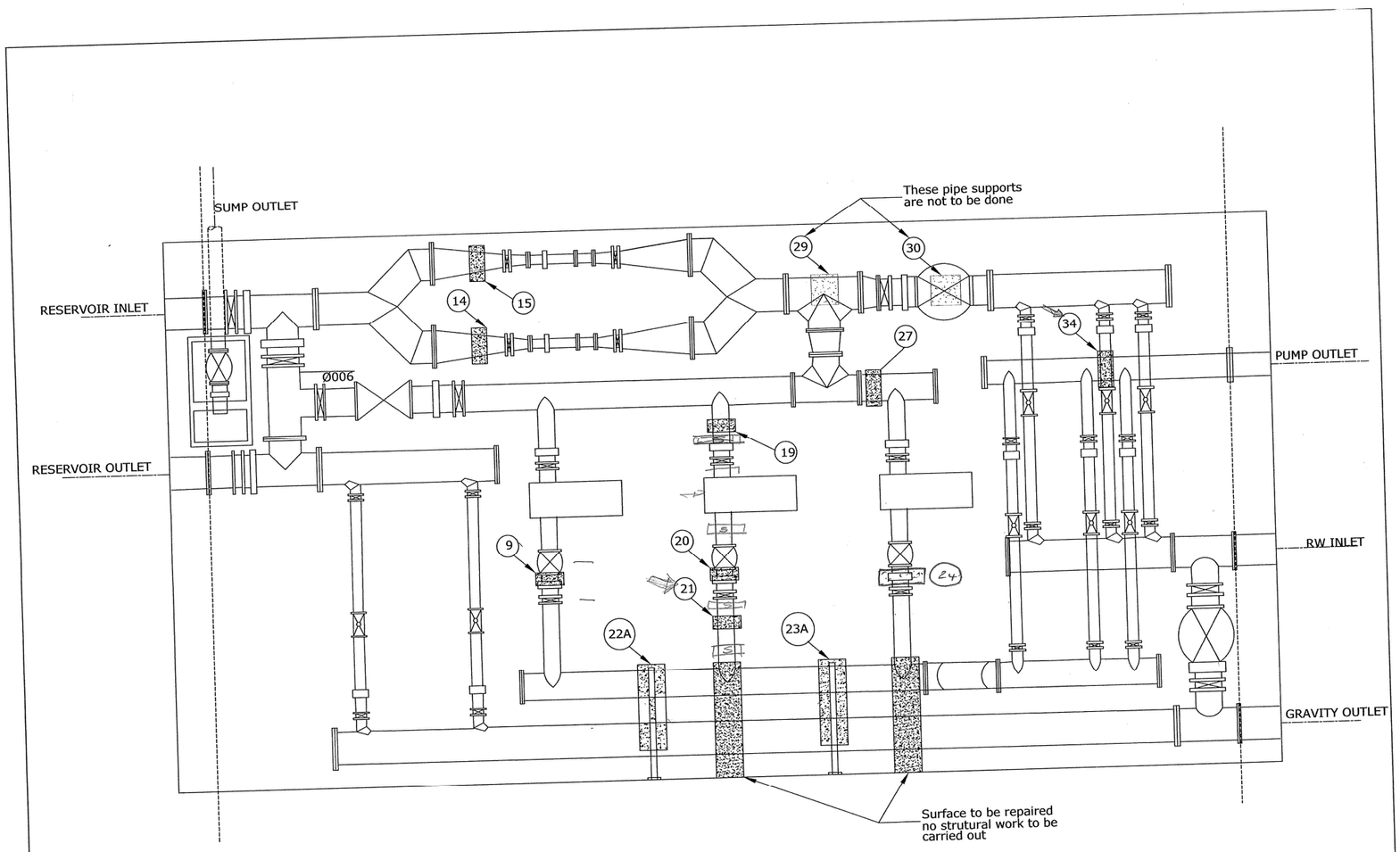
CITY ENGINEERS STADSINGENIEUR

DATE DATUM

WYSIGINGS - AMENDMENTS	GOEDGEKEUR APPROVED	DATUM DATE

DRAWING NO TEKENING NR

WILLIAM BARKER 879



CONSULTING ENGINEERS	SURVEYED		
	DESIGNED	C MOKOENENE	26/05/05
DESIGN SECTION	DRAWN	B MIYA	26/05/05
CAPEX	CHECKED	C MOKOENENE	08/07/05
ALRIS COURT	SERVICES CHECKED		
	GEOTECHNICAL INVESTIGATION		
APPROVED V.R. BARTER	SERVITUDES		
Pr. Eng. No 860003	APPROVED		
DATE:			

Johannesburg Water

TRADUNA HOUSE
58 FREDERICK STREET
MARSHALLTOWN
2107

TEL: (011) 688-1400
FAX: (011) 688-1529

Joburg

THRUST BLOCK
CROSBY PUMPSTATION LAYOUT DRAWING

CONSTRUCTION DRAWING

DESIGN MANAGER	SCALE	AMENDMENTS	APPROVED
05-07-14	NTS	DESIGN SECTION	
CROSS REFERENCE DRAWINGS			

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JW4071/6

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JW6009