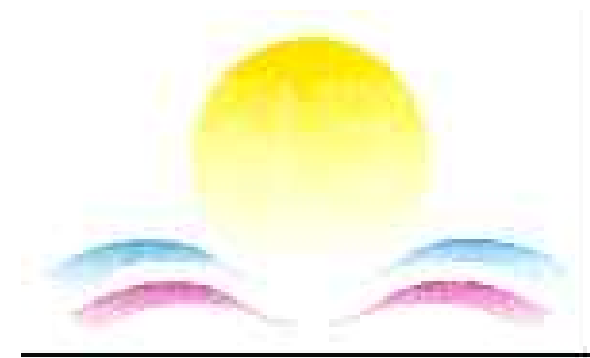


UGU DISTRICT MUNICIPALITY



VULAMEHLO CROSS BORDER WATER SUPPLY SCHEME

CONTRACT UGU-07-1630-2023

CONSTRUCTION OF CIVIL, MECHANICAL AND ELECTRICAL WORKS FOR THE
OPTIMISATION OF OPERATIONS AT VULAMEHLO WATER TREATMENT WORKS

TENDER DRAWINGS

APRIL 2023

PREPARED BY:



35 RIDGE ROAD
SCOTTSVILLE
PIETERMARITZBURG
3201

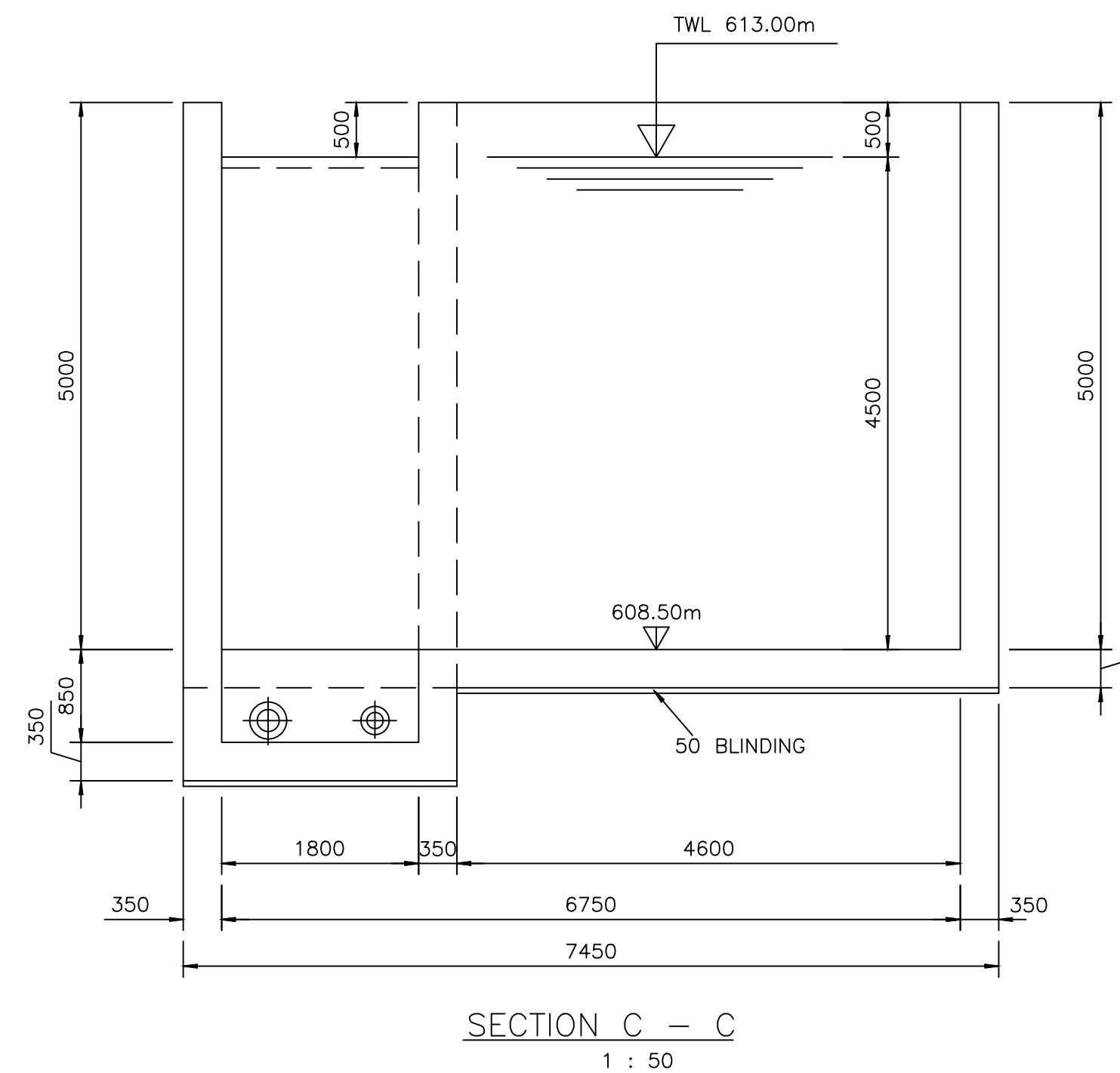
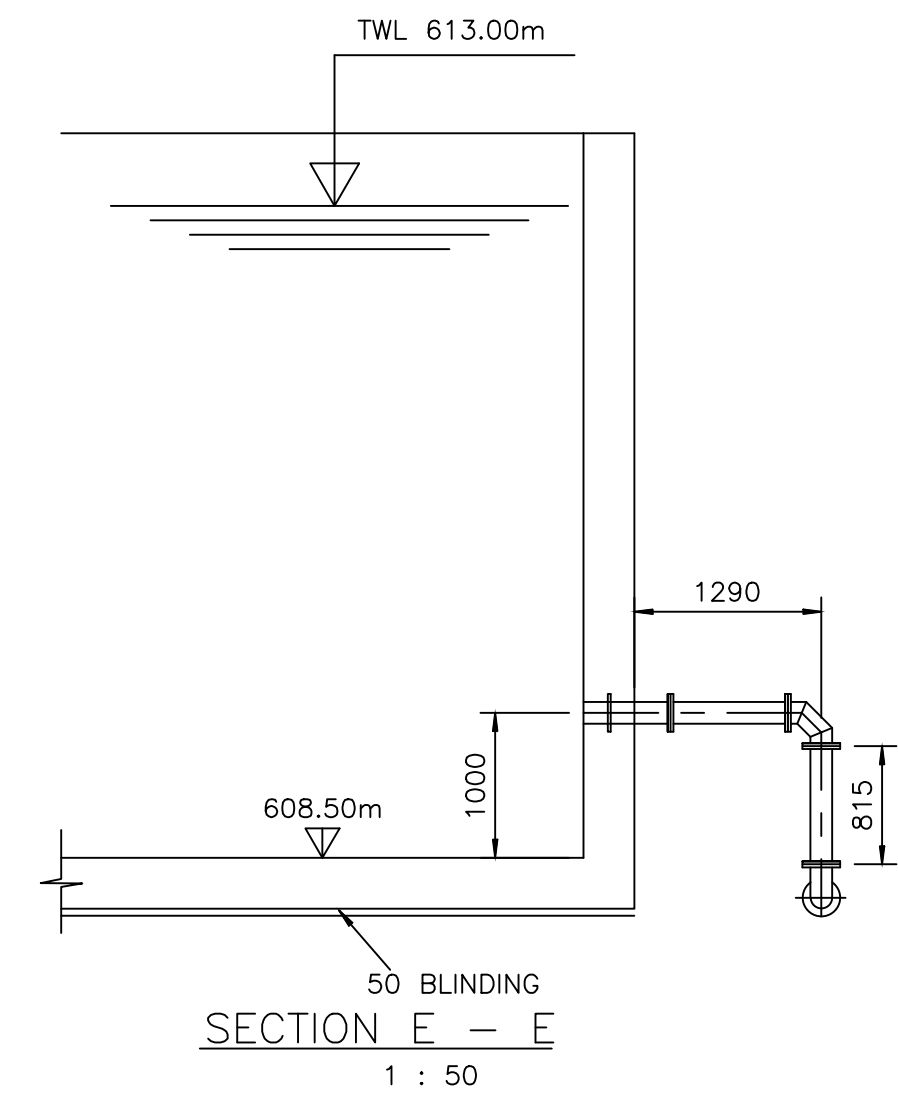
TEL: (033) 346 0673
FAX: (033) 346 0692
E-mail: ziyanda@ziyandaconsulting.co.za

ON BEHALF OF:

UGU DISTRICT MUNICIPALITY
P.O. BOX 33
PORT SHEPSTONE
4240

ORIGINAL SCALE AS SHOWN	CONTRACT No. UGU-07-1630-2023
SHT. No. OF	PROJECT No. J094

DRAWING No. J094-D01	REVISION 0
-----------------------------	-------------------



DRAWING STATUS ISSUED FOR TENDER	
ORIGINAL SCALE AS SHOWN ON A1	
ALT. DWG. No.	CONTRACT No. UGU-07-1630-2023
SHT. No. OF	PROJECT No. J094

DRAWING No.

J094-D02

REVISION

1

0

0

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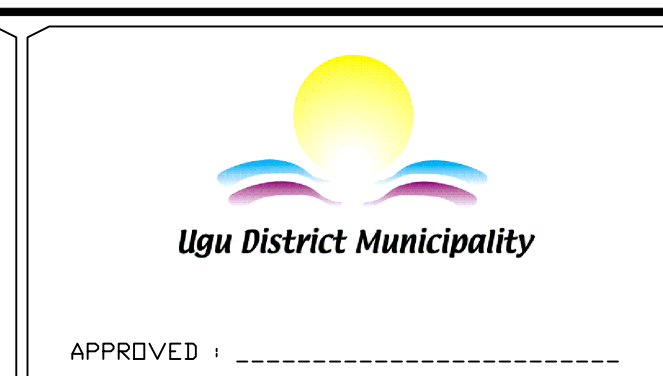
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CHECKED	S. MGUTSHINI (PR ENG REG. No. 20040208)
DRAWN	P.N.
CHECKED	G. MLAMBO
PROJ. ENG. / ING.	G. MLAMBO (PR ENG REG. No. 20190797)

TEL: (033) 346 0689
FAX: (033) 346 0692
E-mail: ziyanda@ziyandaconsulting.co.za

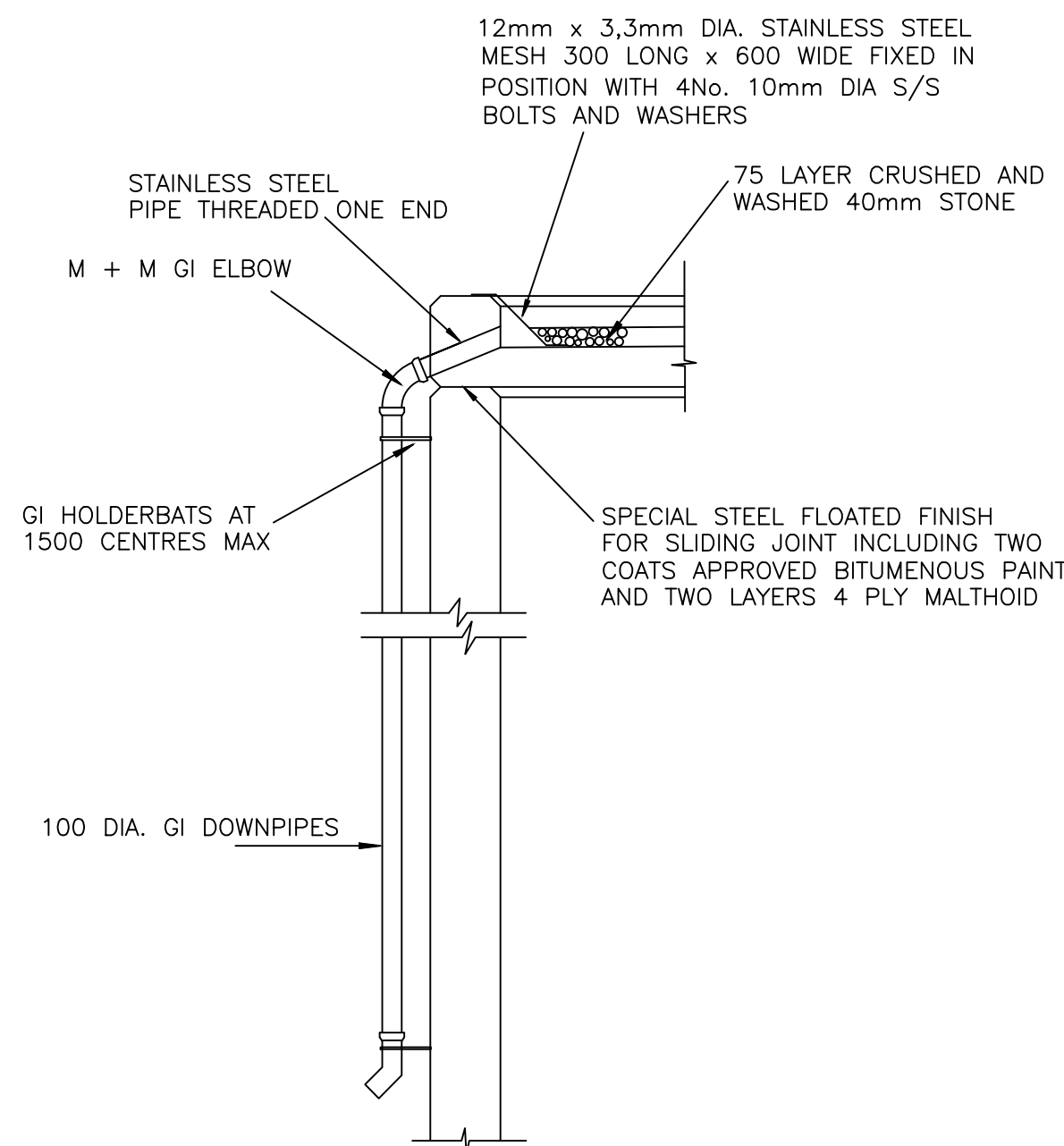
APPROVED : _____
S. MGUTSHINI
(GP, EMC, SEC. No. 20040208)

 **ZIYANDA**
consulting

PO. BOX 809
HILTON
PIETERMARITZBURG
3245

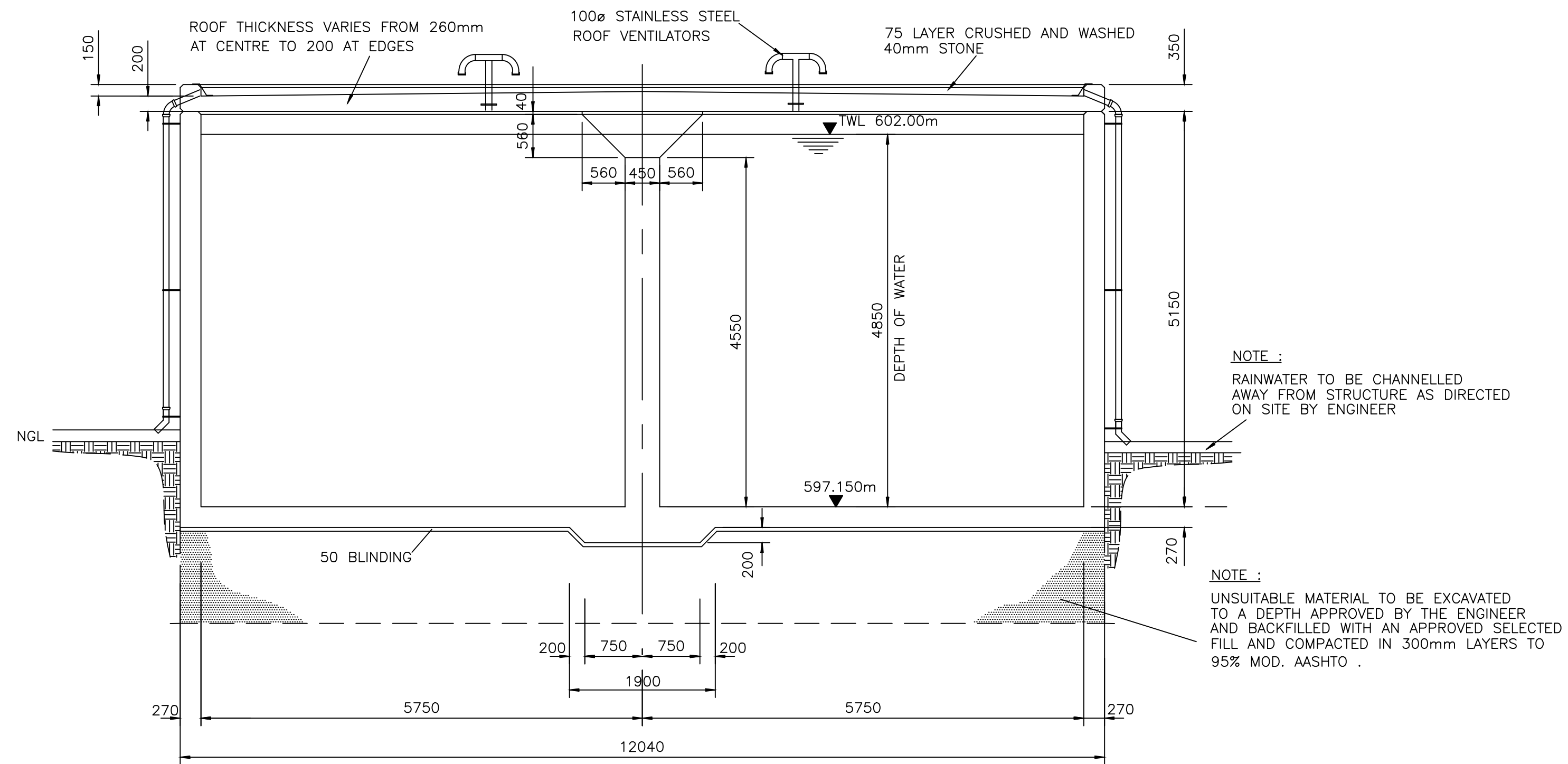


PROJECT/DRAWING TITLE	UGU DISTRICT MUNICIPALITY
VULAMEHLO CROSS BORDER WATER SCHEME	
CONSTRUCTION OF CIVIL, MECHANICAL & ELECTRICAL WORKS TO OPTIMISE THE OPERATIONS OF THE VULAMEHLO WATER TREATMENT WORKS	
DETAILS OF RAW WATER STORAGE TANK	



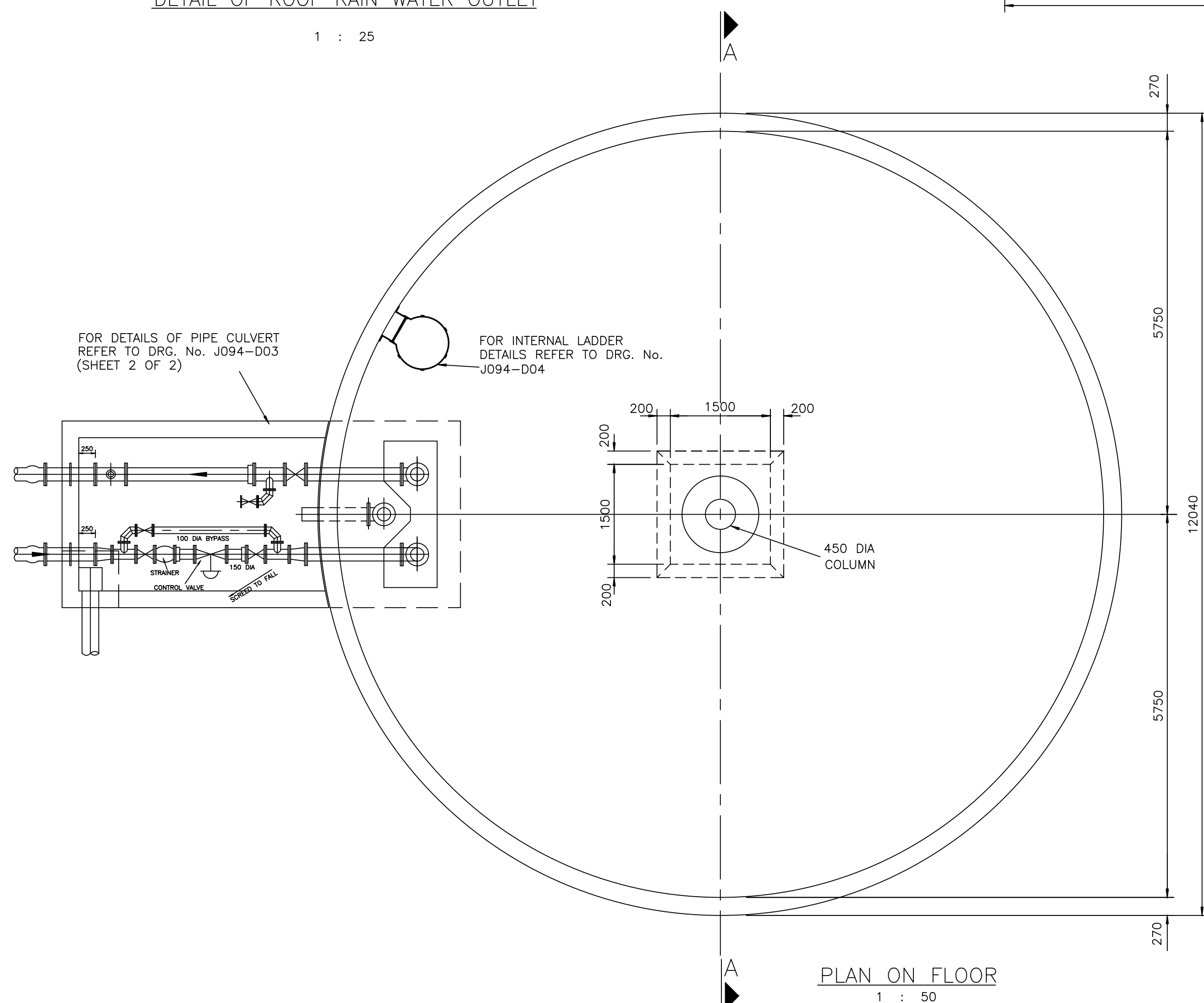
DETAIL OF ROOF RAIN WATER OUTLET

1 : 25



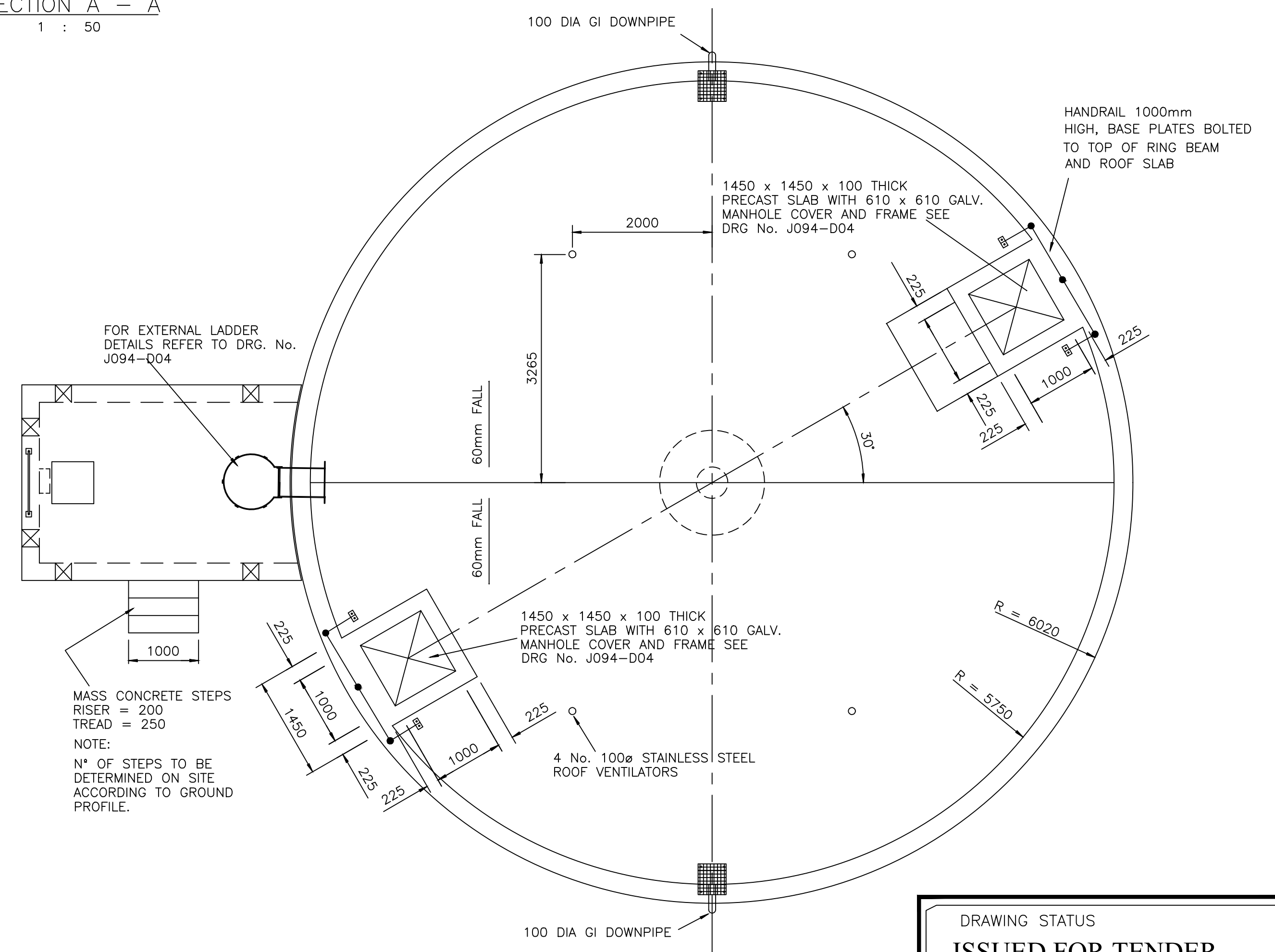
SECTION A - A

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PLAN ON FLOOR

1 : 50



PLAN ON ROOF

1 : 50

DRAWING STATUS
ISSUED FOR TENDER

ORIGINAL SCALE
AS SHOWN ON A1

ALT. DWG. No. CONTRACT No. UGU-07-1630-2023
SHT. No. 1 OF 2 PROJECT No. J094

DRAWING No. J094-D03 REVISION
0

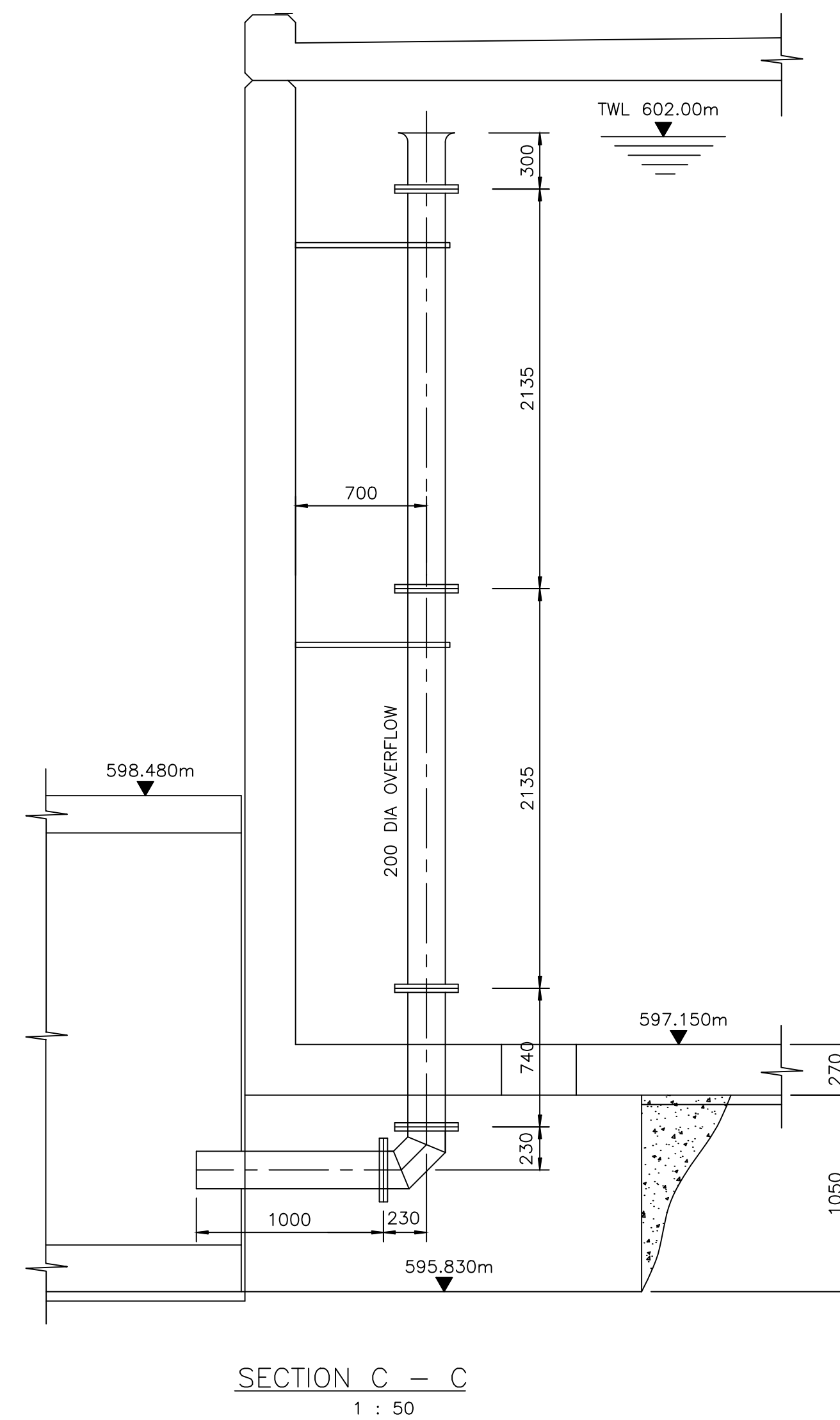
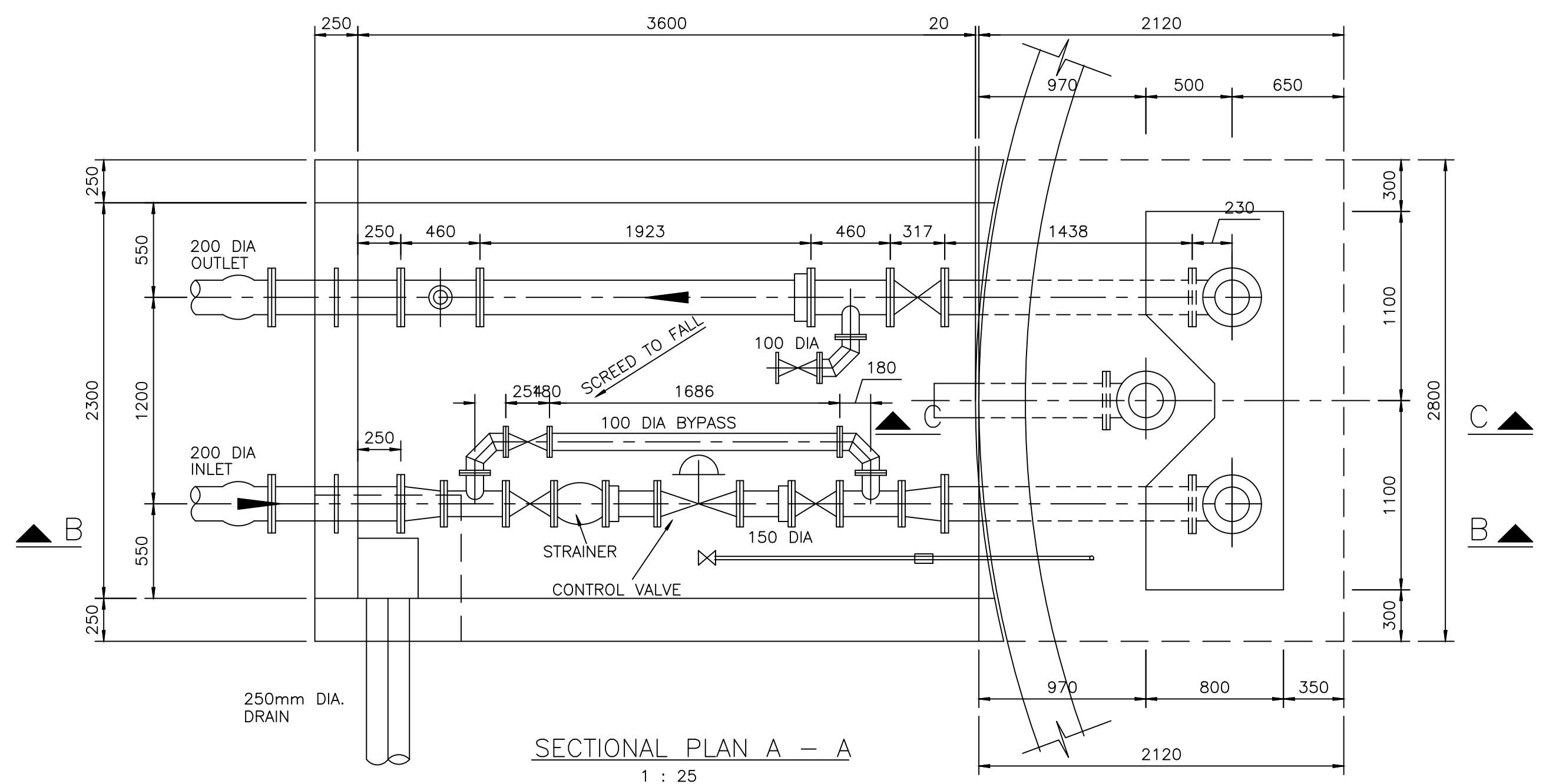
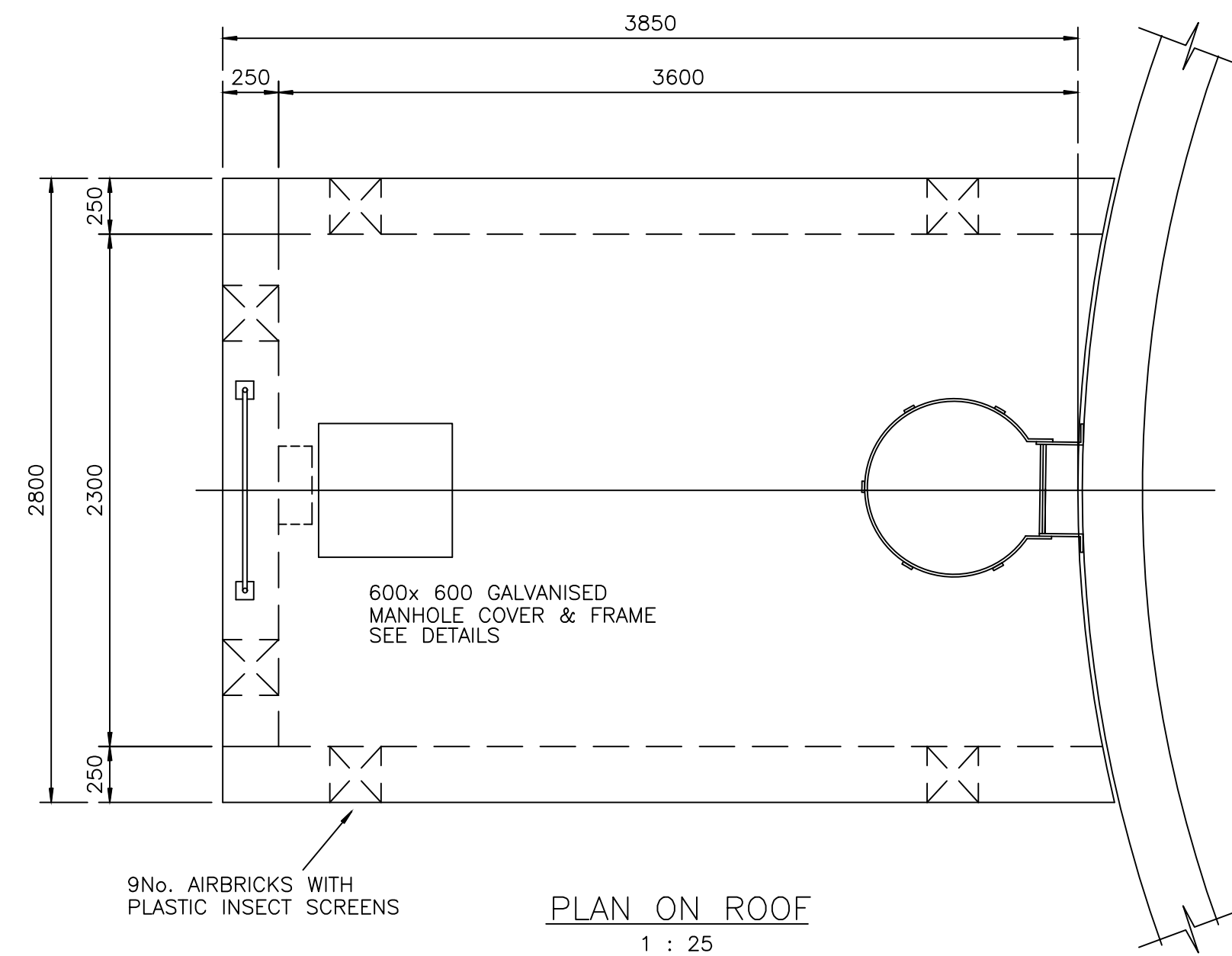
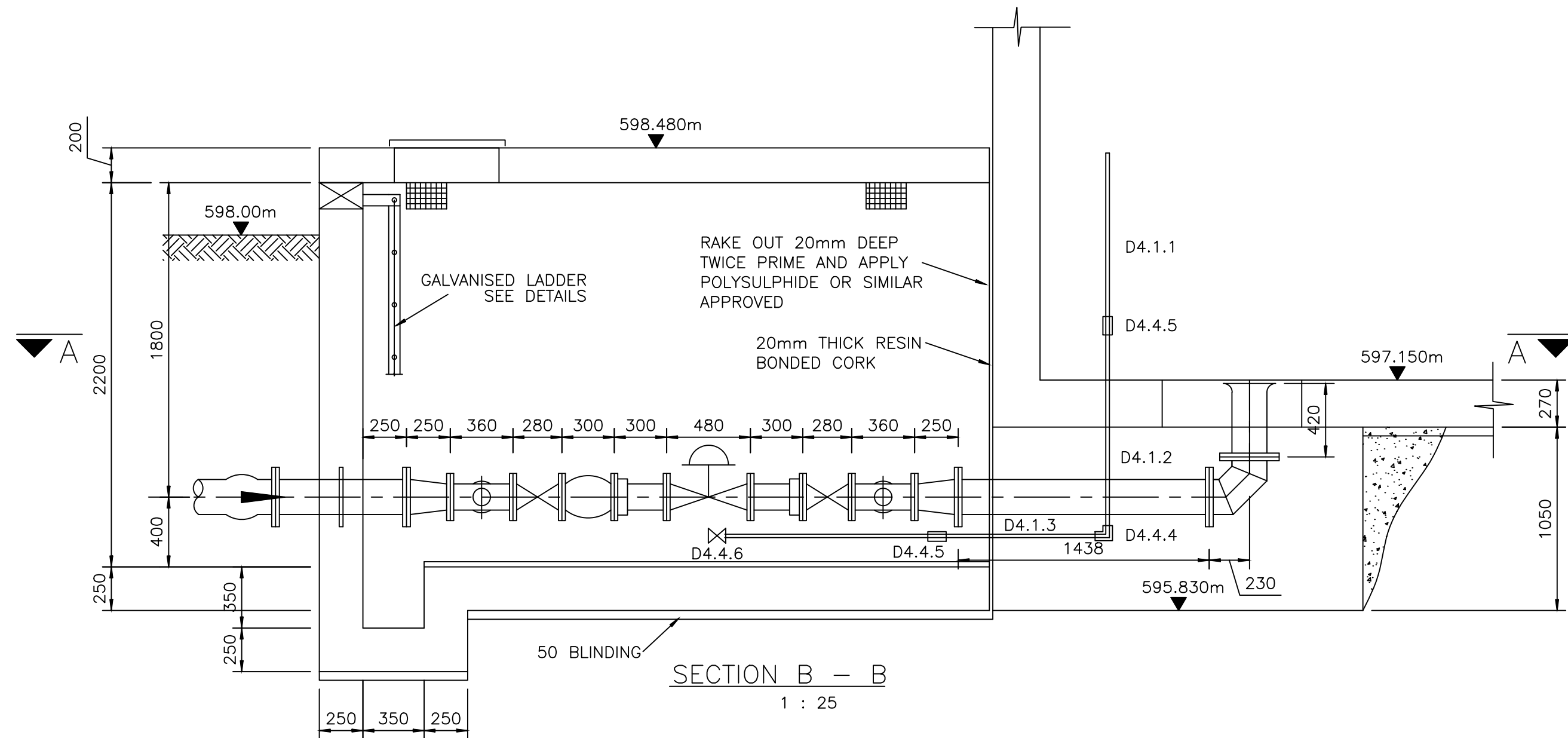
DESIGNED G. MLAMBO
CHECKED S. MGUTSHINI (PR ENG REG. No. 20040208)
DRAWN P.N.
CHECKED G. MLAMBO
PROJ. ENG. / ING. G. MLAMBO (PR ENG REG. No. 20190797)

ZIYANDA consulting
TEL: (033) 346 0689
FAX: (033) 346 0692
E-mail: ziyanda@ziyandaconsulting.co.za
PO BOX 809
HILTON
PIETERMARITZBURG
3245
APPROVED : S. MGUTSHINI (PR ENG REG. No. 20040208)

Ugu District Municipality
APPROVED :

PROJECT/DRAWING TITLE UGU DISTRICT MUNICIPALITY
VULAMEHLO CROSS BORDER WATER SCHEME
CONSTRUCTION OF CIVIL, MECHANICAL & ELECTRICAL WORKS TO
OPTIMISE THE OPERATIONS OF THE VULAMEHLO WATER
TREATMENT WORKS
500m³ CLEAR WATER RESERVOIR - GENERAL ARRANGEMENT
(SHEET 1 OF 2)

No.	REFERENCE DRAWINGS
0	ISSUED FOR TENDER
1	ONLY REVISIONS MARKED THUS Δ ARE VALID
APR 23	DATE
CHKD	CHKD
APPRV	APPRV



DRAWING STATUS
ISSUED FOR TENDER

ORIGINAL SCALE
AS SHOWN ON A1

ALT. DWG. No.	CONTRACT No.
SHT. No. 2 OF 2	PROJECT No. J094
DRAWING No. J094-D03	REVISION 0

No.	REFERENCE DRAWINGS
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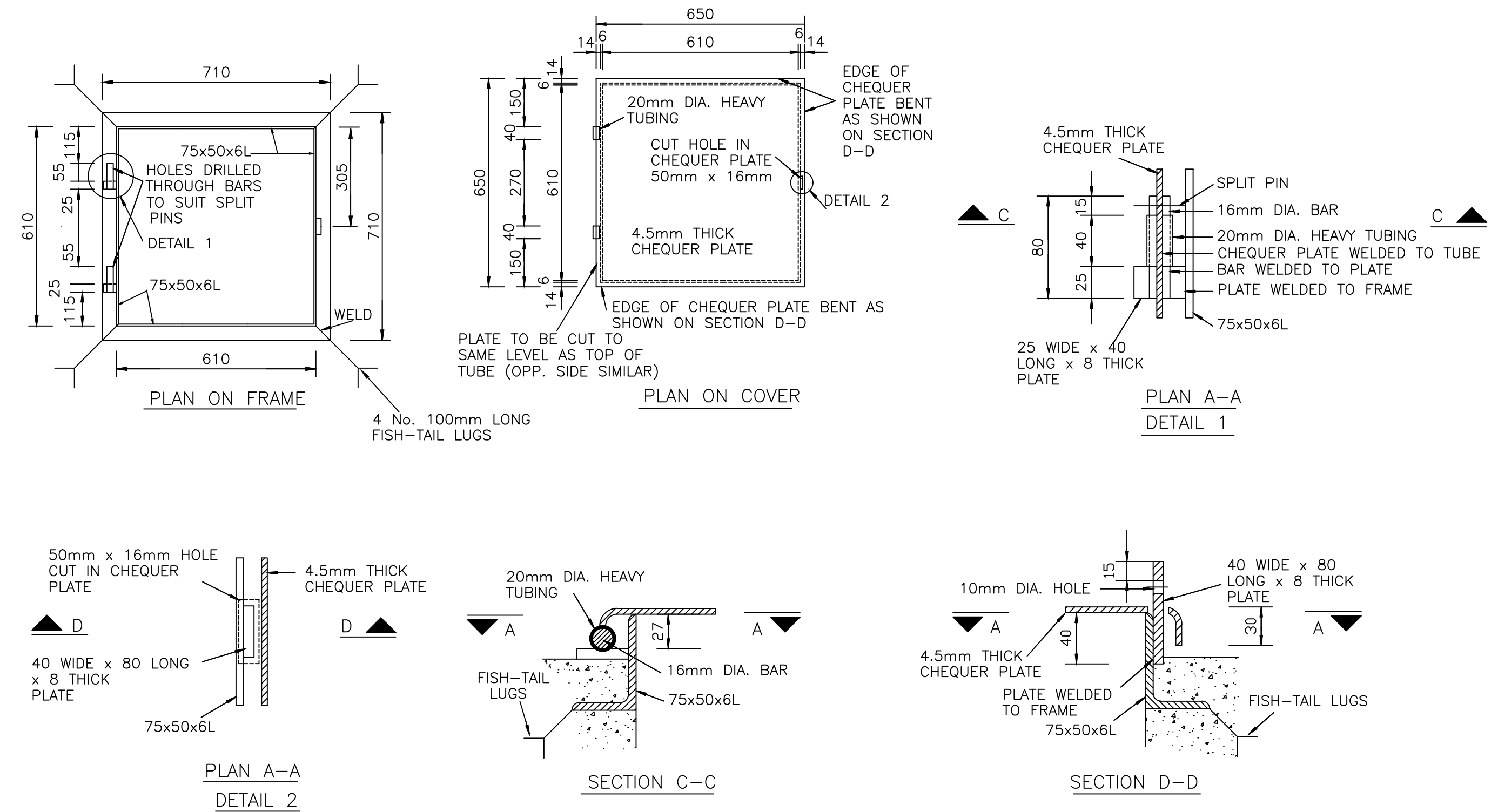
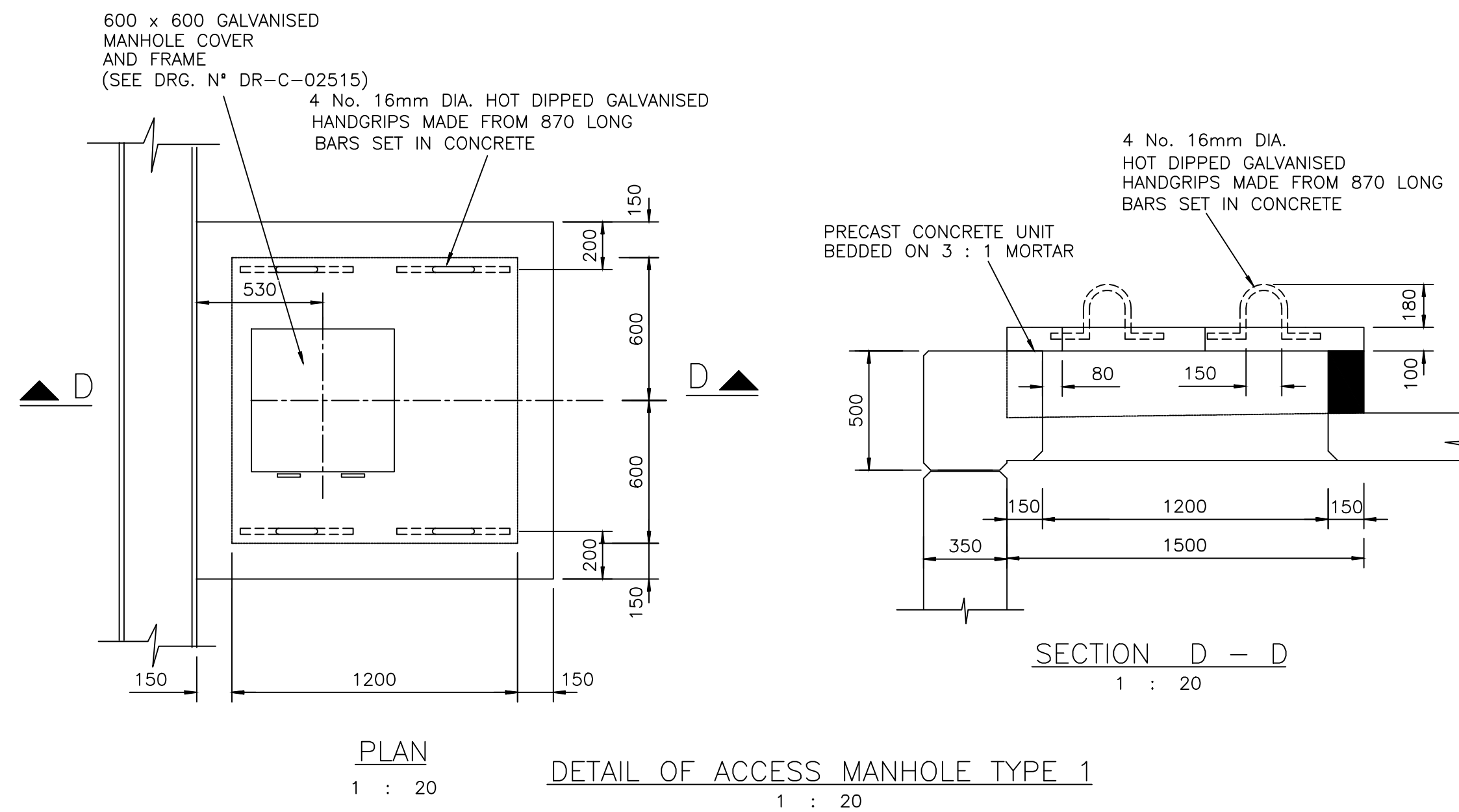
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△	ONLY REVISIONS MARKED THUS △ ARE VALID			

DESIGNED	G. MLAMBO
CHECKED	S. MGUTSHINI (PR ENG REG. No. 20040208)
DRAWN	P.N.
CHECKED	G. MLAMBO
PROJ. ENG. / ING.	G. MLAMBO (PR ENG REG. No. 20190797)

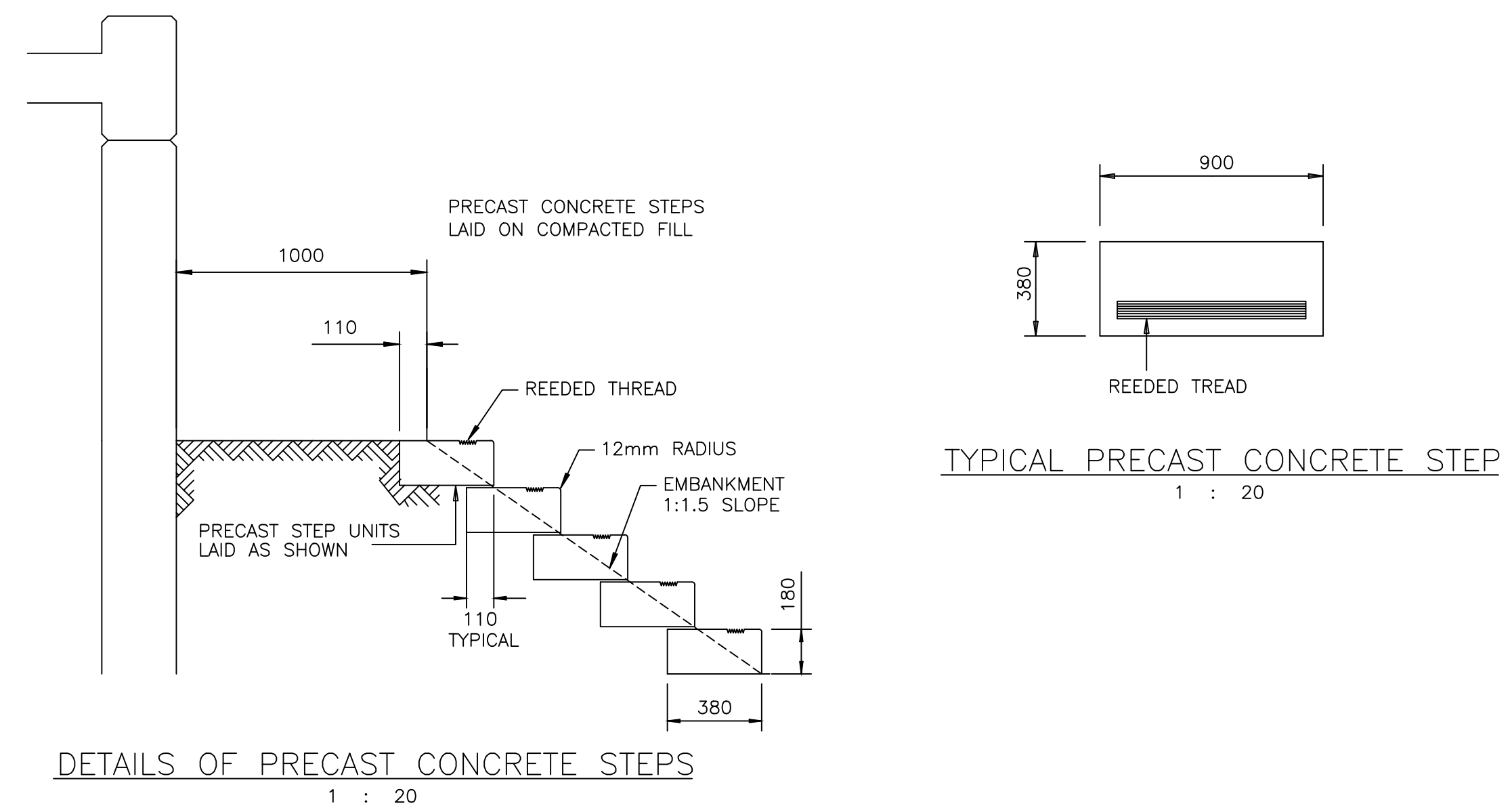
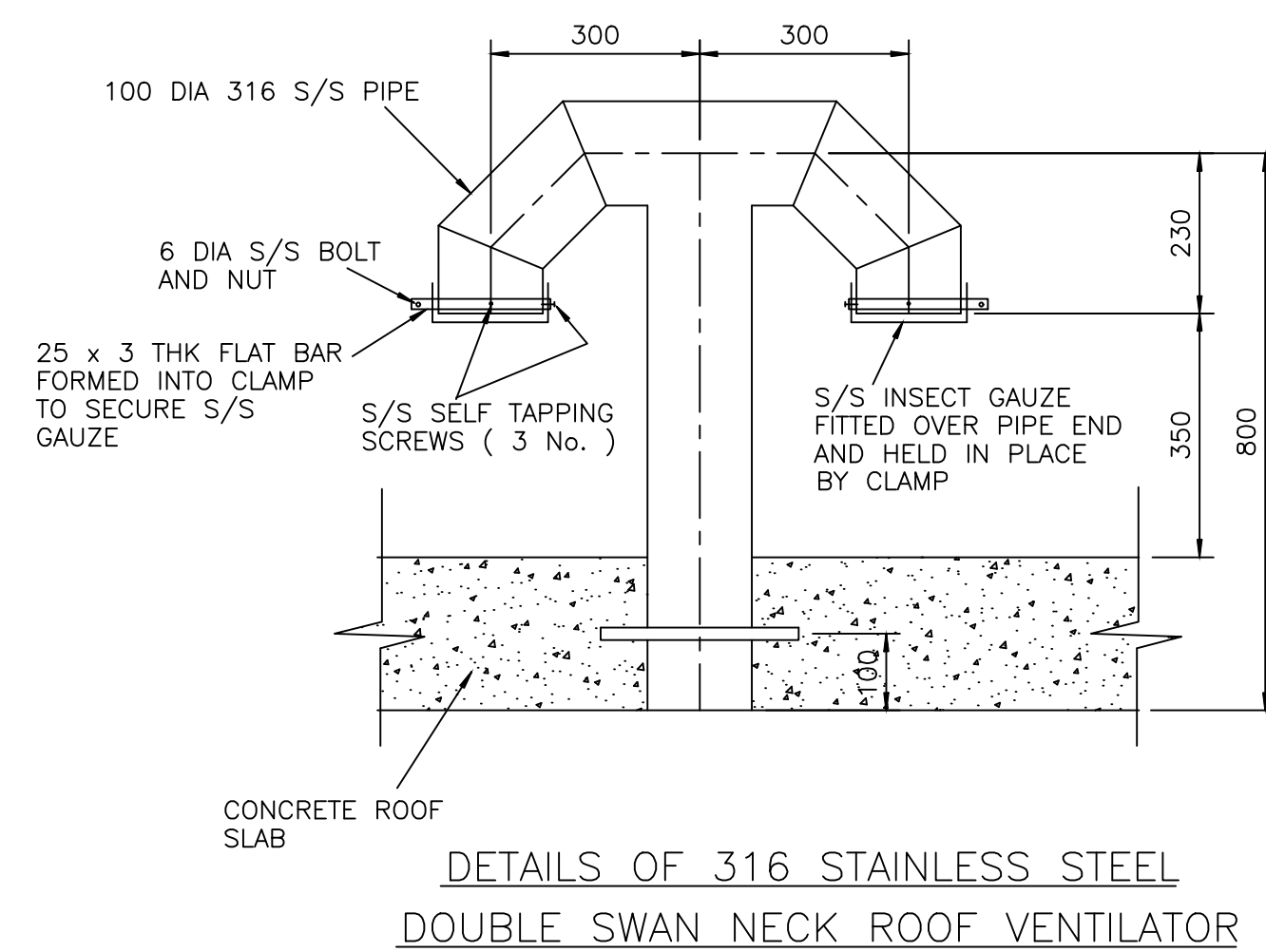
TEL: (033) 346 0689 FAX: (033) 346 0692 E-mail: ziyanda@ziyandaconsulting.co.za	PO. BOX 809 HILTON PIETERMARITZBURG 3245
APPROVED : S. MGUTSHINI (PR ENG REG. No. 20040208)	

Ugu District Municipality	APPROVED : _____
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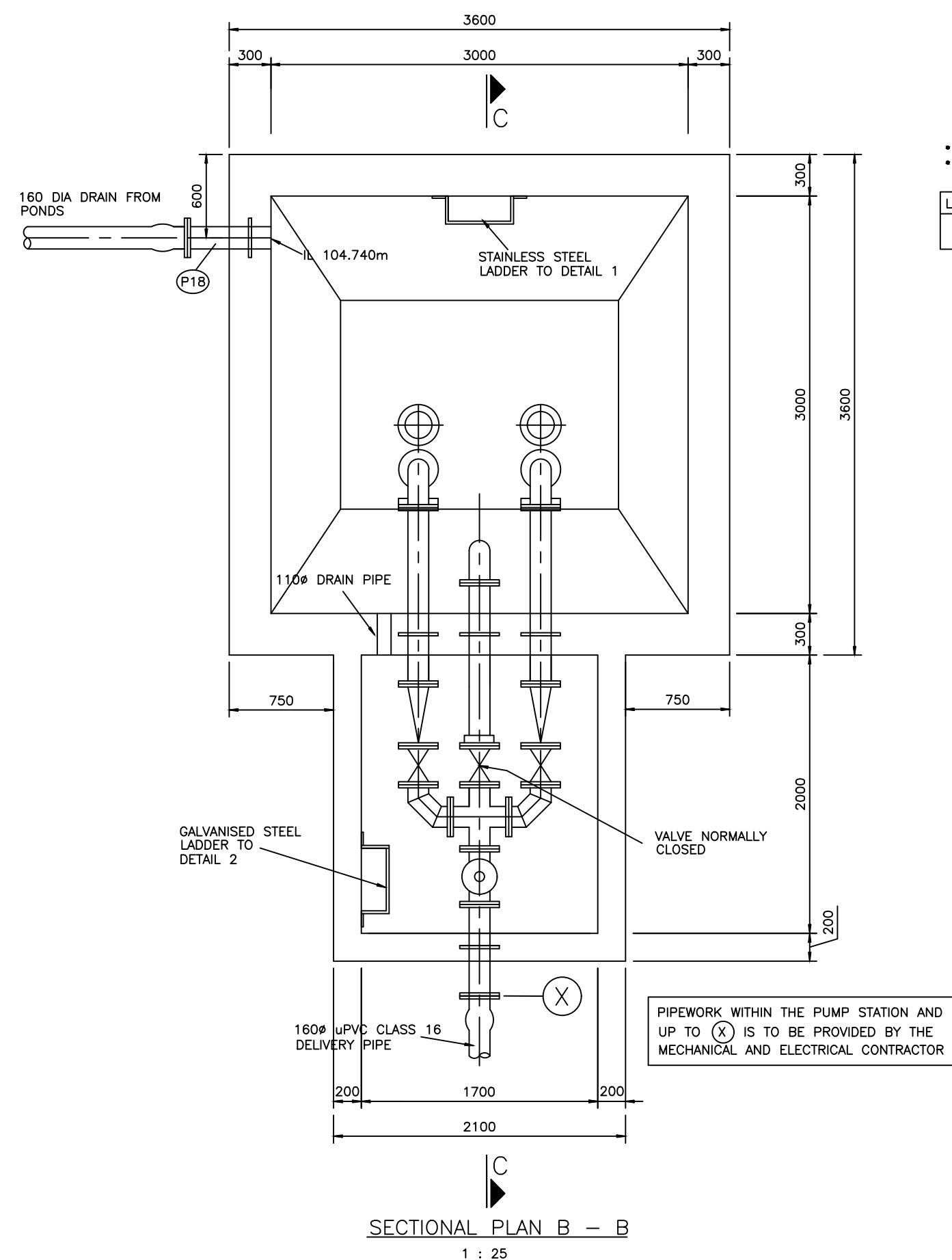
PROJECT/DRAWING TITLE UGU DISTRICT MUNICIPALITY VULAMEHLO CROSS BORDER WATER SCHEME CONSTRUCTION OF CIVIL, MECHANICAL & ELECTRICAL WORKS TO OPTIMISE THE OPERATIONS OF THE VULAMEHLO WATER TREATMENT WORKS 500m³ CLEAR WATER RESERVOIR - PIPE CULVERT (SHEET 2 OF 2)
--



DETAILS OF GALVANISED MANHOLE COVER AND FRAME



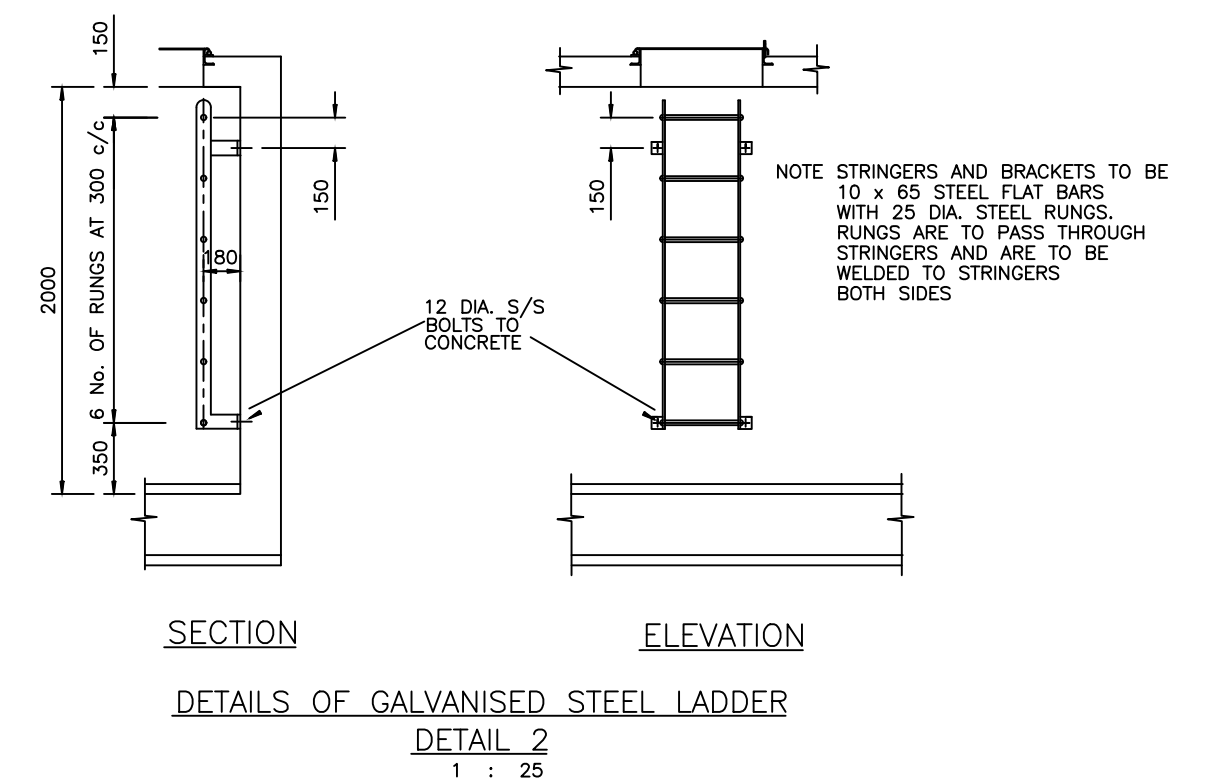
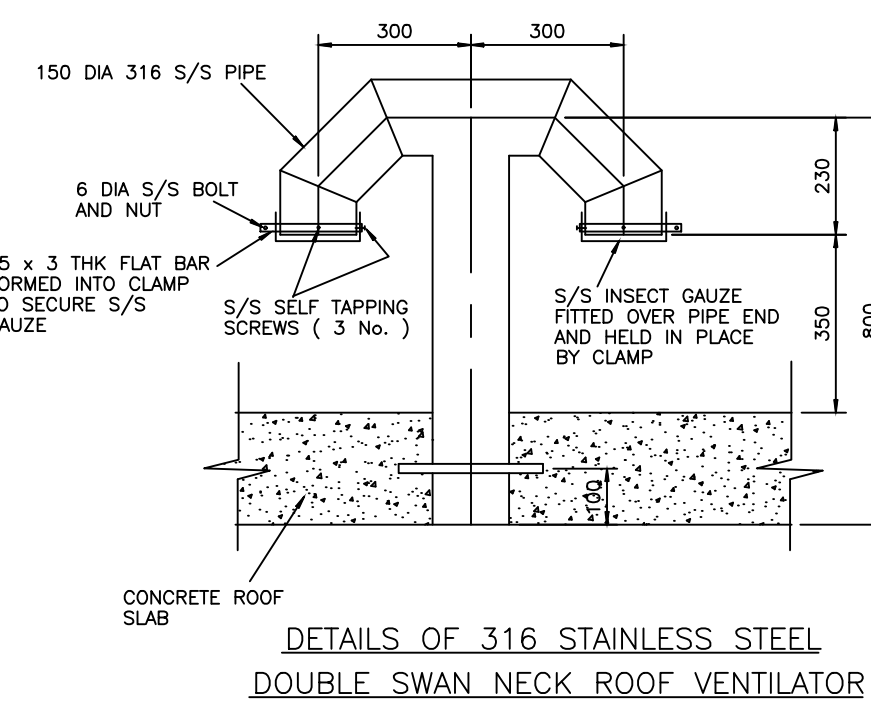
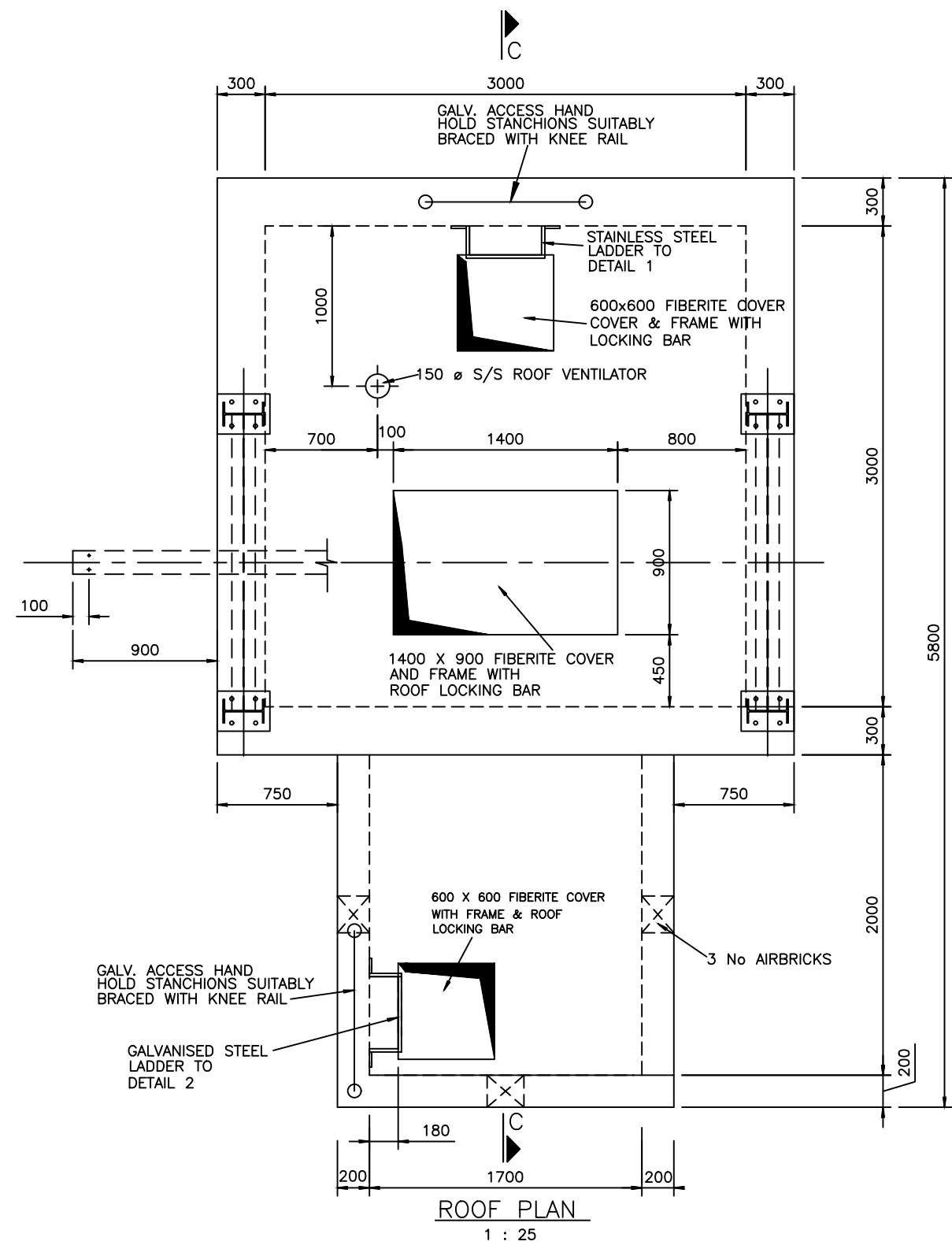
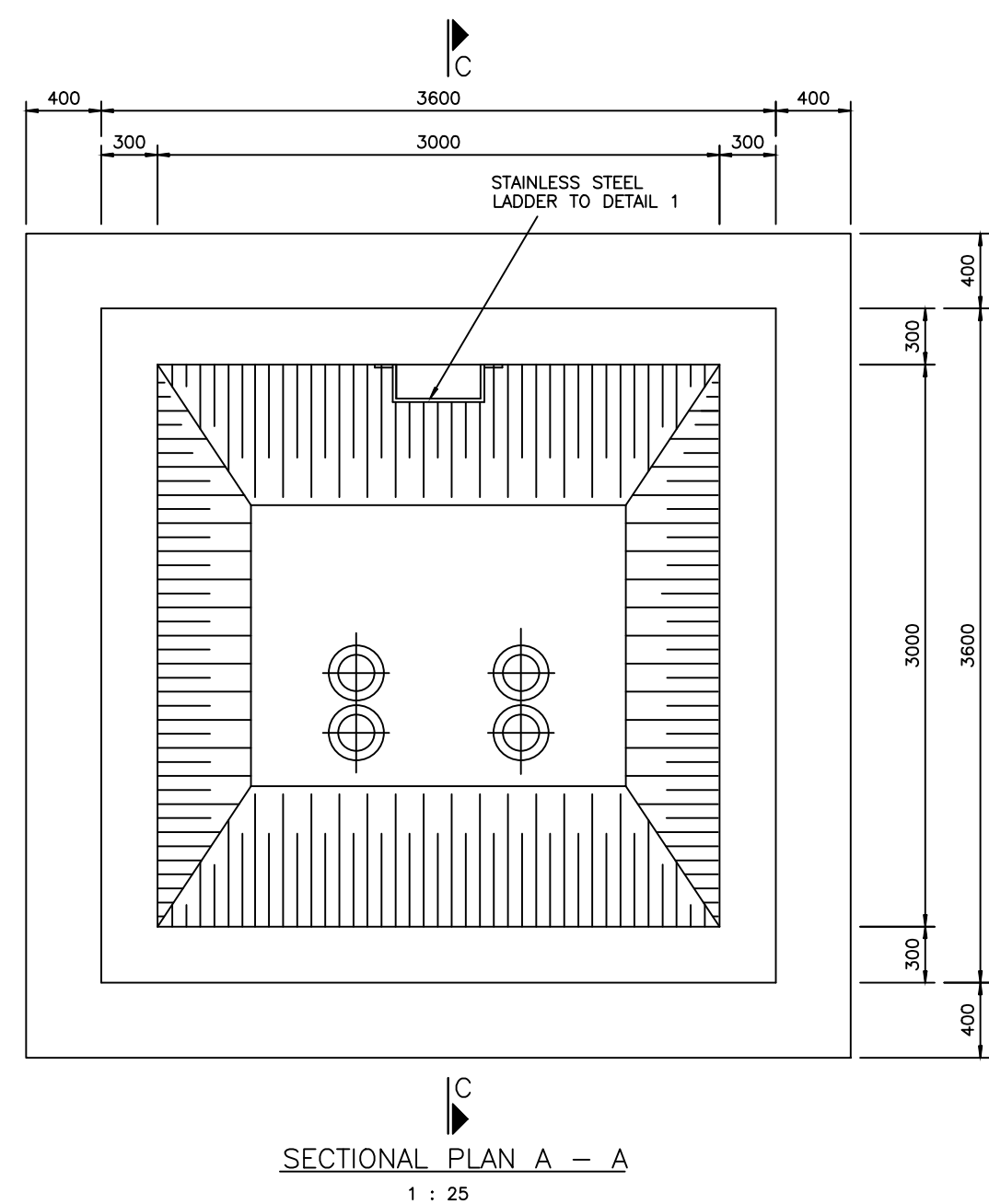
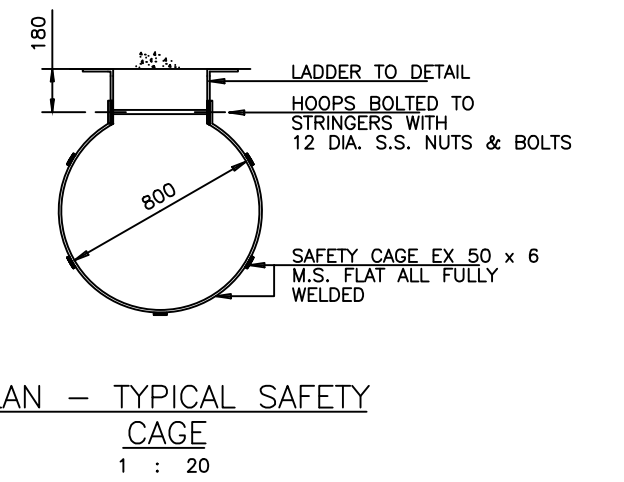
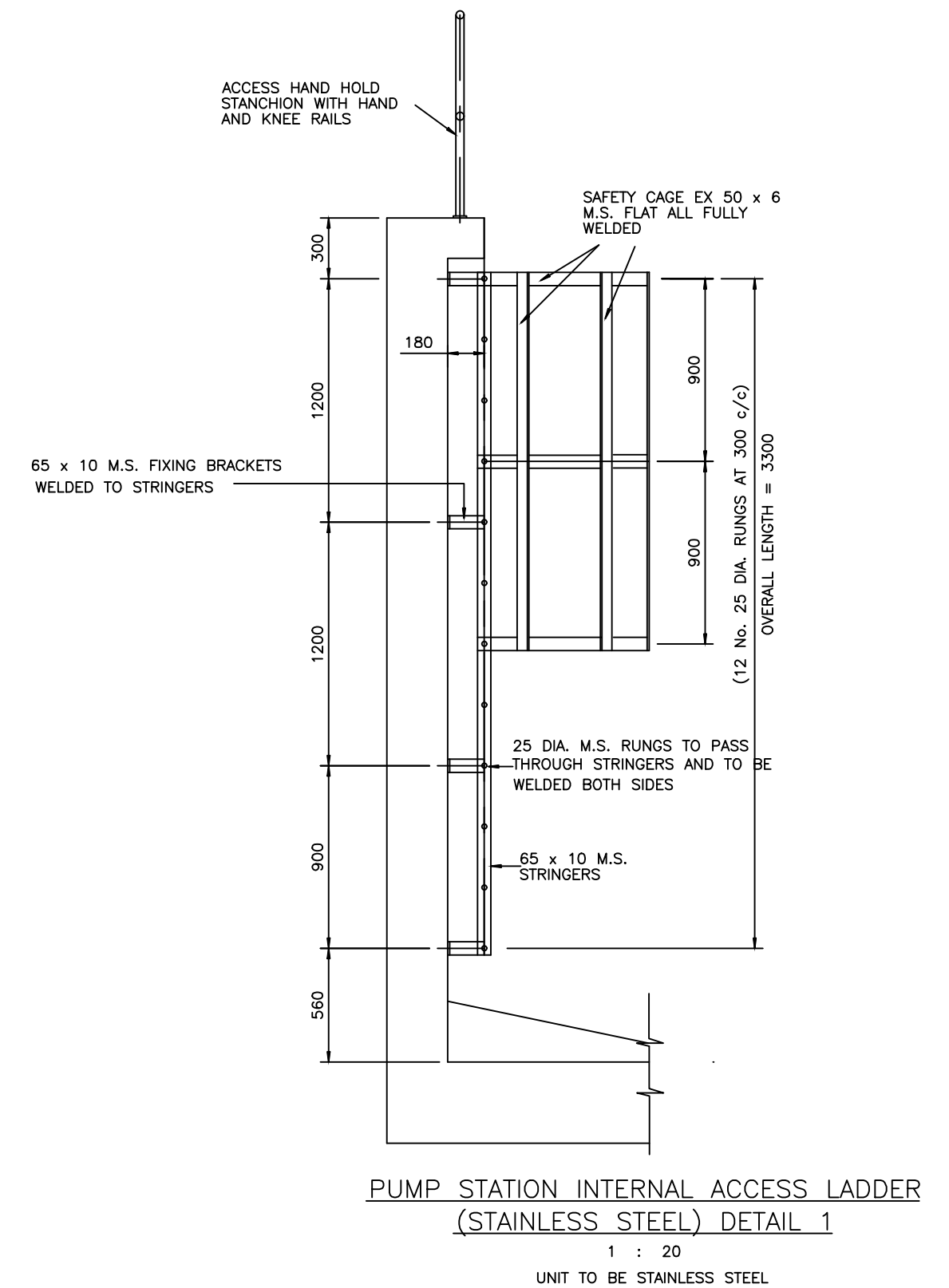
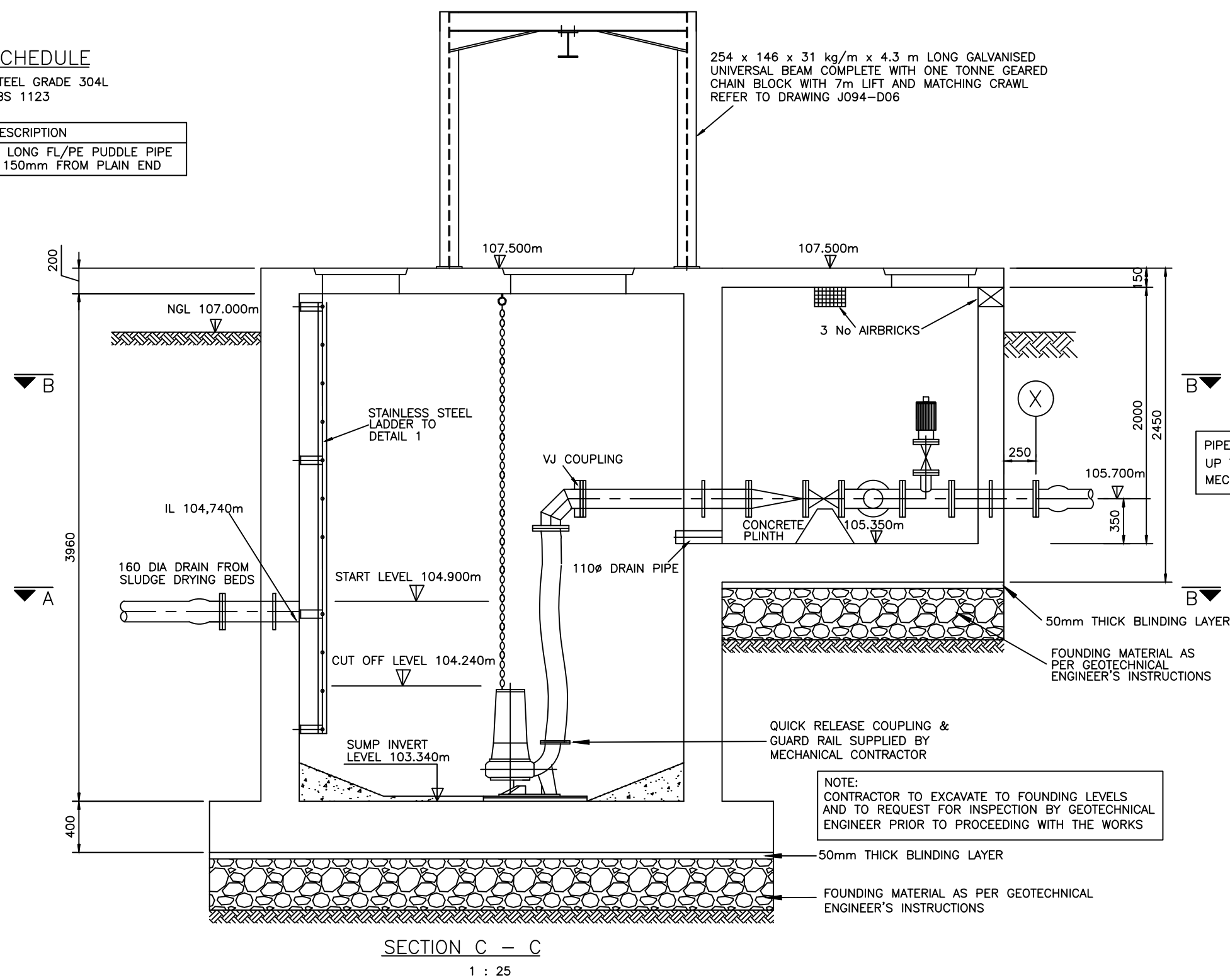
No.				REFERENCE DRAWINGS			
DESIGNED				G. MLAMBO			
CHECKED				S. MGUTSHINI (PR ENG REG. No. 20040208)			
DRAWN				P.N.			
CHECKED				G. MLAMBO			
PROJ. ENG. / ING.				G. MLAMBO (PR ENG REG. No. 20190797)			
0				ISSUED FOR TENDER			
APR 23				DATE			
ONLY REVISIONS MARKED THUS ARE VALID				REVISIONS			
APPROVED				S. MGUTSHINI (PR ENG REG. No. 20040208)			
TEL: (033) 346 0689				PO BOX 809			
FAX: (033) 346 0692				HILTON PIETERMARITZBURG 3245			
E-mail: ziyanda@ziyandaconsulting.co.za				APPROVED			
PROJECT/DRAWING TITLE				UGU DISTRICT MUNICIPALITY VULAMEHLO CROSS BORDER WATER SCHEME			
CONSTRUCTION OF CIVIL, MECHANICAL & ELECTRICAL WORKS TO OPTIMISE THE OPERATIONS OF THE VULAMEHLO WATER TREATMENT WORKS				500m ³ CLEAR WATER RESERVOIR – STEELWORK DETAILS (SHEET 2 OF 2)			
DRAWING STATUS				ISSUED FOR TENDER			
ORIGINAL SCALE				AS SHOWN ON A1			
ALT. DWG. No.				CONTRACT No. UGU-07-1630-2023			
SHT. No.				PROJECT No. J094			
DRAWING No.				J094-D04			
REVISION				0			



PUDDLE PIPE SCHEDULE

• ALL PUDDLE PIPES TO BE STAINLESS STEEL GRADE 304L
• ALL FLANGES TO BE TABLE 1000/3 SABS 1123

LABEL	No.	OFF	DESCRIPTION
P18	1		150mm DIA x 600mm LONG FL/PE PUDDLE PIPE WITH PUDDLE COLLAR 150mm FROM PLAIN END



No.	REFERENCE DRAWINGS	REVISIONS	DATE	CHKD	APPRV
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2	ONLY REVISIONS MARKED THUS ARE VALID				

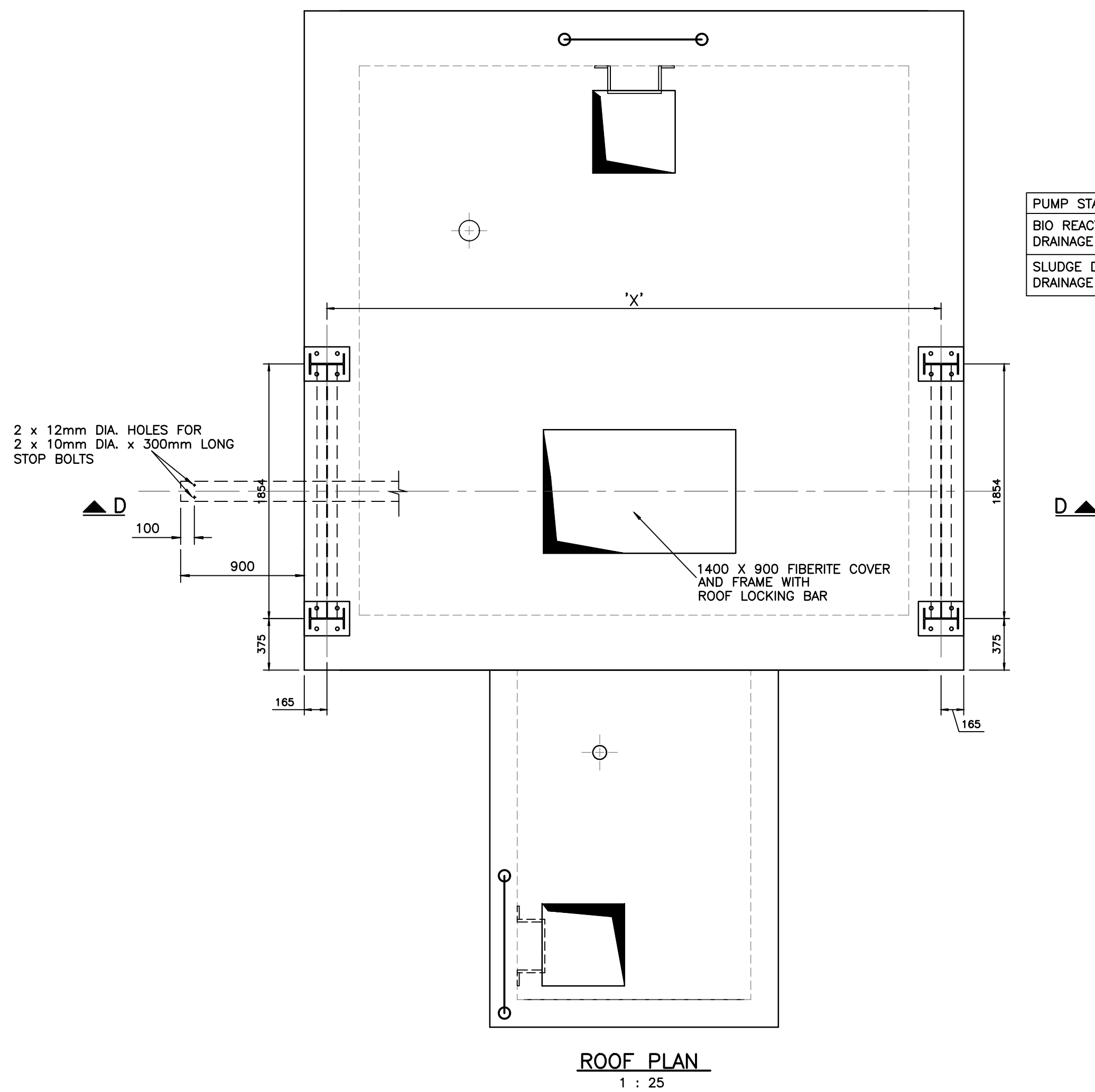
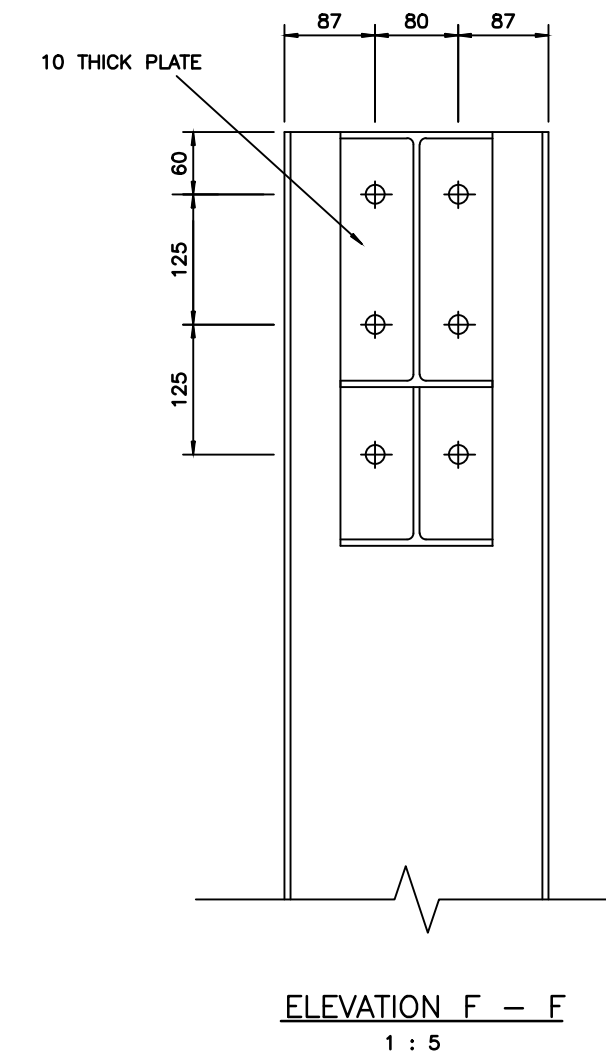
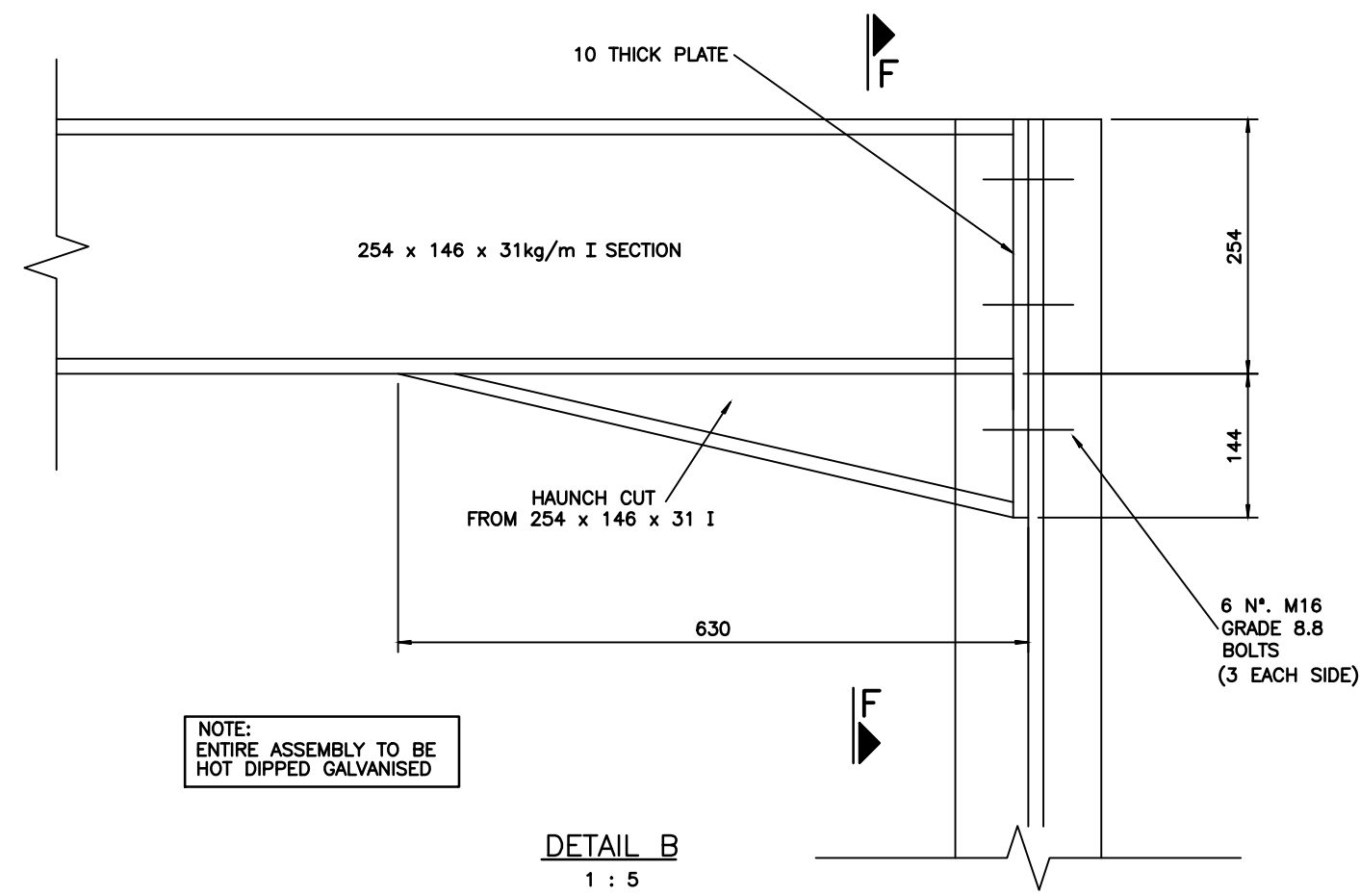
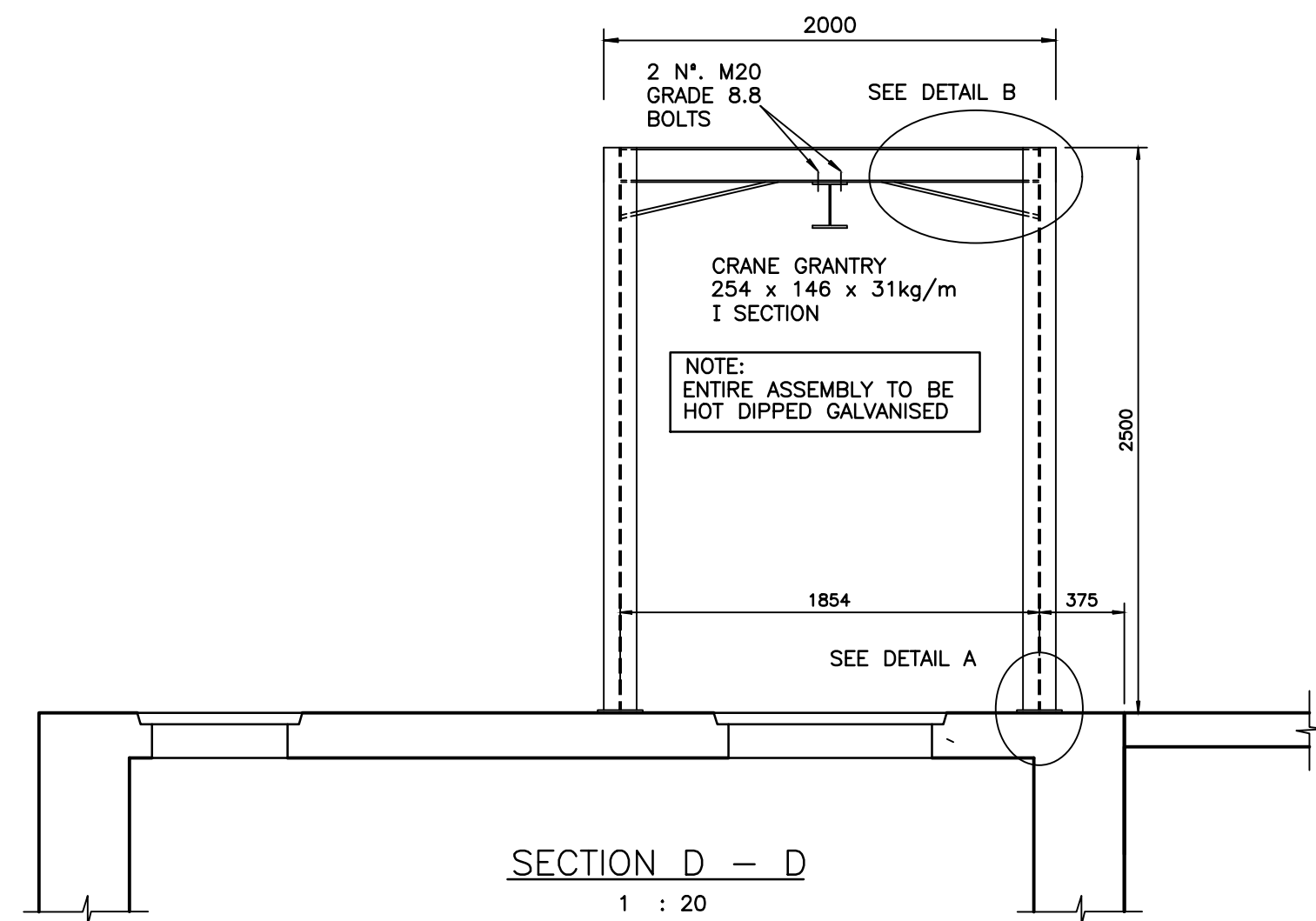
DESIGNED	G. MLAMBO
CHECKED	S. MGUTSHINI
DRAWN	P. NAIDOO
TRACED	
CHECKED	
PROJ. ENG.	G. MLAMBO (PR ENG REG. No. 20190797)

ZIYANDA consulting
TEL: (033) 346 0689
FAX: (033) 346 0692
E-mail: ziyanda@ziyandaconsulting.co.za
APPROVED: G. MLAMBO
PR. ENG. REG. No. 20190797

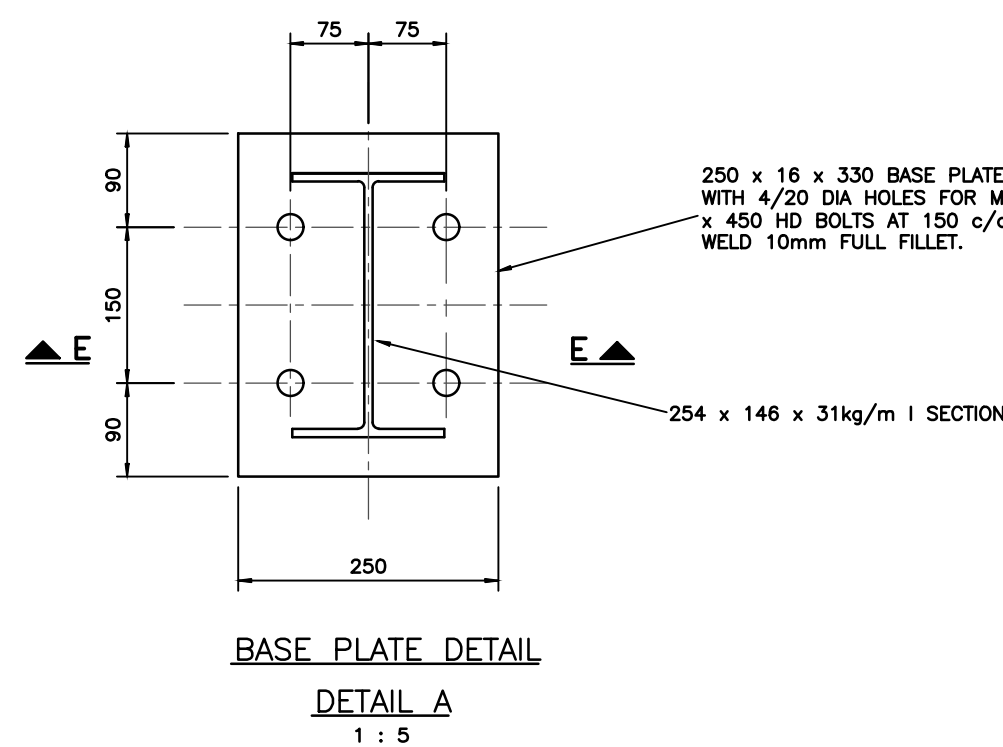
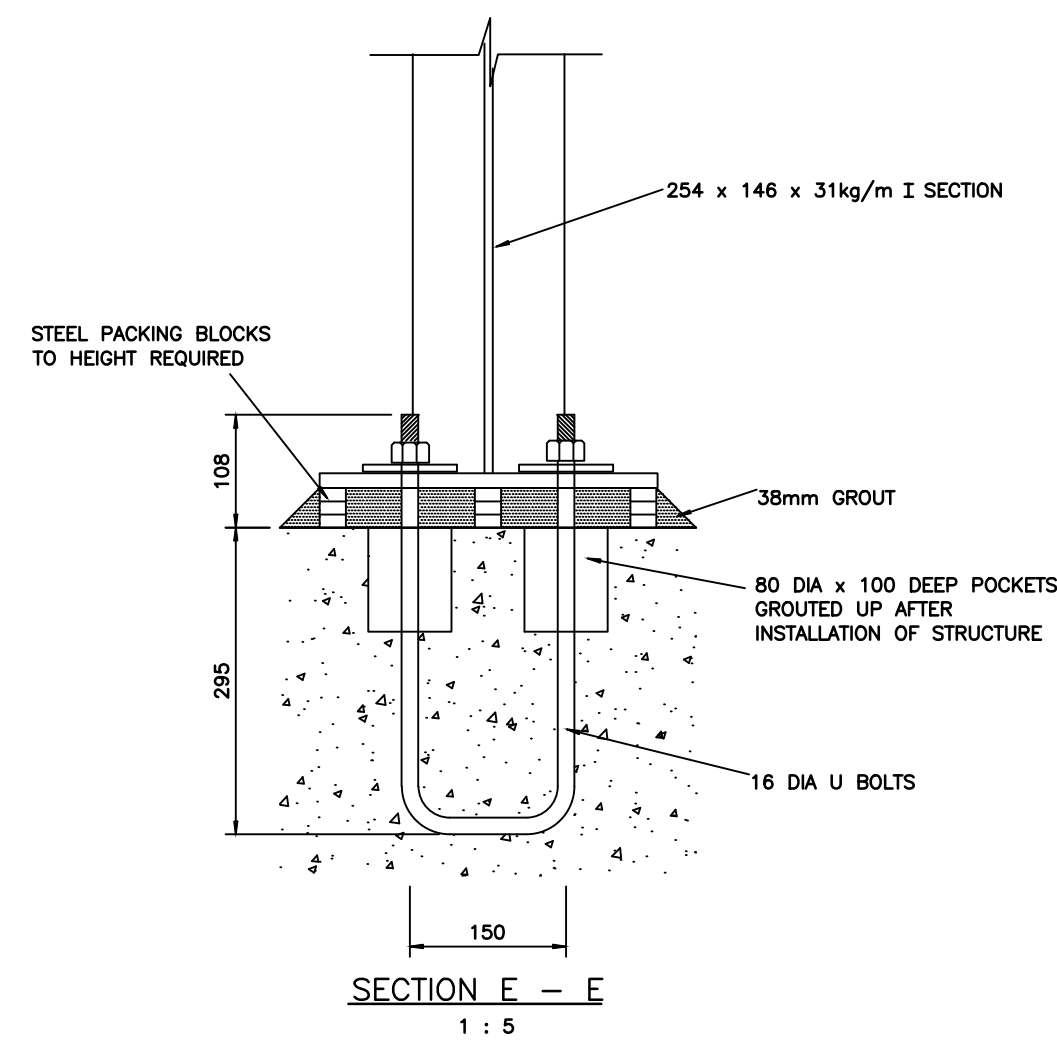
Ugu District Municipality
APPROVED: _____

PROJECT/DRAWING TITLE	UGU DISTRICT MUNICIPALITY VULAMEHLO CROSS BORDER WATER SCHEME CONSTRUCTION OF CIVIL, MECHANICAL & ELECTRICAL WORKS TO OPTIMISE THE OPERATIONS OF THE VULAMEHLO WATER TREATMENT WORKS DETAILS OF BACKWASH EFFLUENT RETURN PUMP STATION
-----------------------	--

DRAWING STATUS ISSUED FOR TENDER	
ORIGINAL SCALE 1 : 200	CONTRACT No. UGU-07-1630-2023
SHT. No. OF	PROJECT No. J094
DRAWING No. J094-D05	REVISION 0



PUMP STATION	'X'
BIO REACTOR / CLARIFIER DRAINAGE PUMP STATION	4470
SLUDGE DRYING BEDS DRAINAGE PUMP STATION	3270



No.	REFERENCE DRAWINGS	REVISIONS	DATE	CHKD	APPRV

0	ISSUED FOR TENDER	APR '23			
	REVISIONS	DATE	CHKD	APPRV	
	ONLY REVISIONS MARKED THUS Δ ARE VALID				

DESIGNED	G. MLAMBO	
CHECKED	S. MOUTSHINI	
DRAWN	P. NAIDOO	
TRACED		
CHECKED		
PROJ. ENG.	G. MLAMBO	
	(PR ENG REG. No. 20190797)	

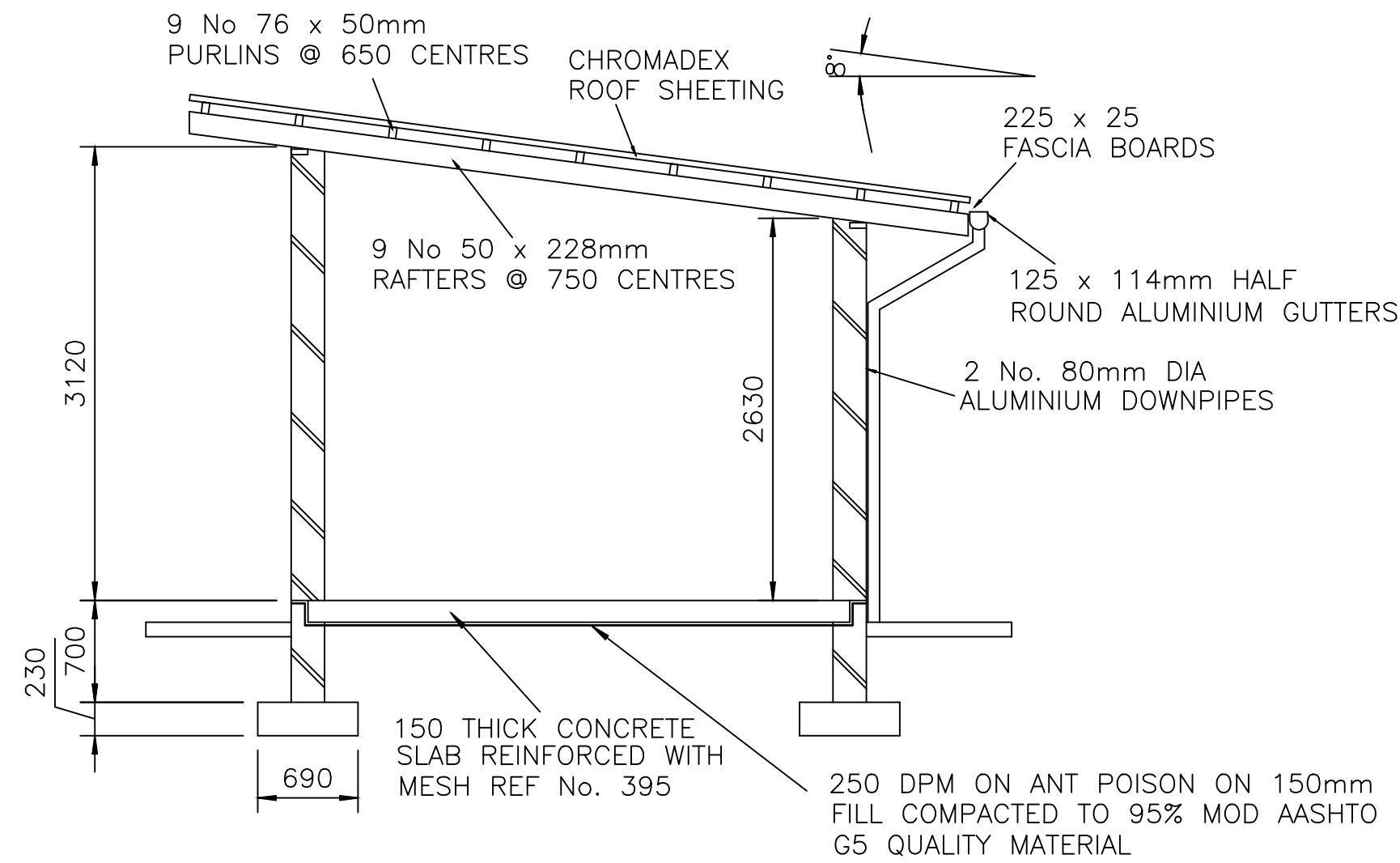
ZIYANDA
consulting
 TEL: (033) 346 0699
 FAX: (033) 346 0692
 E-mail: ziyanda@ziyandaconsulting.co.za
 APPROVED:
 G. MLAMBO
 (PR ENG REG. No. 20190797)

Ugu District Municipality
 APPROVED: _____

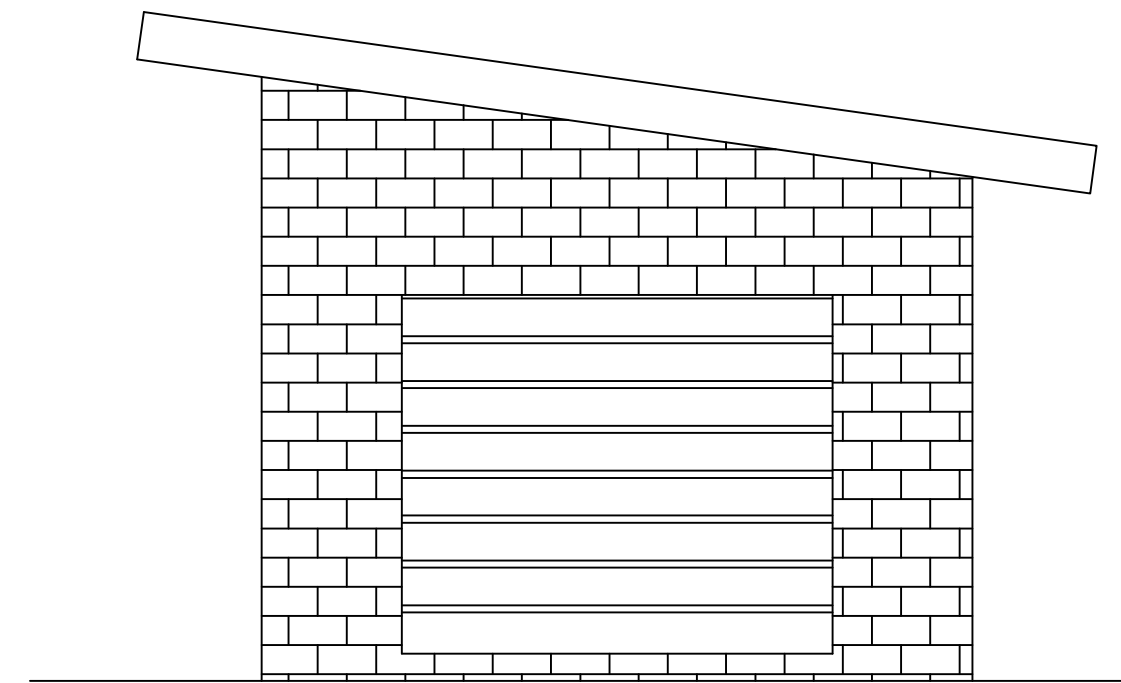
PROJECT/DRAWING TITLE
 UGU DISTRICT MUNICIPALITY
 VULAMEHLO CROSS BORDER WATER SCHEME
 CONSTRUCTION OF CIVIL, MECHANICAL & ELECTRICAL WORKS TO OPTIMISE THE OPERATIONS OF THE VULAMEHLO WATER TREATMENT WORKS
 BACKWASH EFFLUENT RETURN PUMP STATION
 CRAWL BEAM ASSEMBLY DETAILS

DRAWING STATUS
ISSUED FOR TENDER

ORIGINAL SCALE AS SHOWN	CONTRACT No. UGU-07-1630-2023
SHT. No. OF	PROJECT No. J094
DRAWING No. J094-D06	REVISION 0

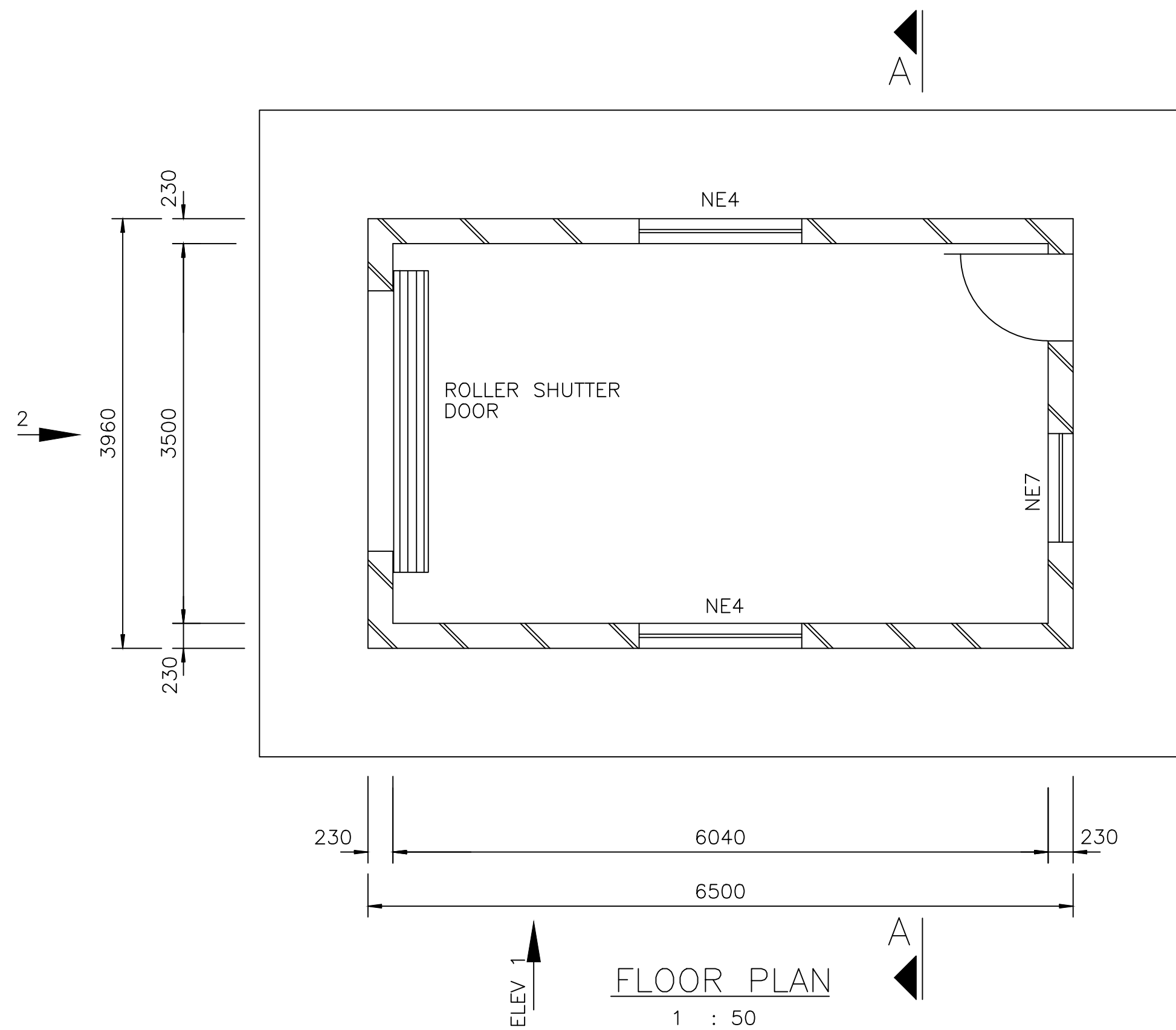


SECTION A - A
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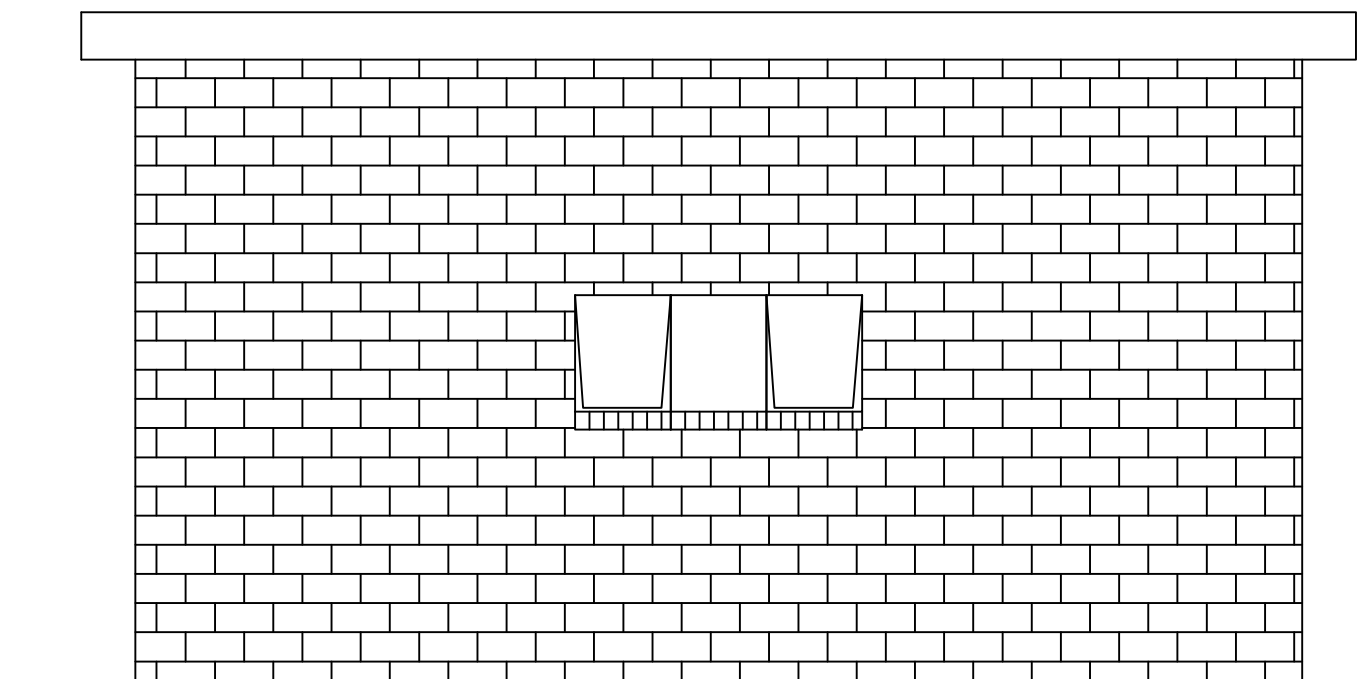


ELEVATION 2
1 : 50

- GENERAL NOTES:
1. ALL WORK AND MATERIALS TO COMPLY WITH NATIONAL BUILDING REGULATIONS, SANS 1200, 0164, 82, 1083, AND 1090.
 2. DIMENSIONS ARE NOT TO BE SCALED OFF THE DRAWINGS. ALL DISCREPANCIES TO BE BROUGHT TO THE ATTENTION OF THE ENGINEER TIMEOUSLY.
 3. ALL SHARP EXPOSED CONCRETE EDGES TO BE CHAMFERED 20 x 20mm.
 4. GROUND WATER CONTROL AND FALLS OF STORM WATER DRAINAGE TO BE AGREED WITH ENGINEER ON SITE.
 5. ALL BULK EXCAVATIONS, PLATFORMS, SOIL IMPROVEMENTS, FOUNDATIONS AND CONSTRUCTION JOINTS TO BE APPROVED BY THE ENGINEER.
 6. APRON SLAB IS TO BE 100mm THICK WITH 20/19 MPa/mm CONCRETE. SLAB TO BE CAST IN 2m ALTERNATE PANELS AND FINISHED WITH WOOD FLOAT TO NON-SLIP FINISH. 10mm EXPANSION JOINT SEALED WITH POLYSULPHIDE SEALER TO BE PROVIDED EVERY 6 METERS. SLAB TO FALL 30mm AWAY FROM BUILDING.



FLOOR PLAN
1 : 50



ELEVATION 1
1 : 50

DRAWING STATUS
ISSUED FOR TENDER

ORIGINAL SCALE
AS SHOWN ON A1

ALT. DWG. No.	CONTRACT No.
SHT. No.	PROJECT No.
DRAWING No.	REVISION
J094-D07	0

No.	REFERENCE DRAWINGS

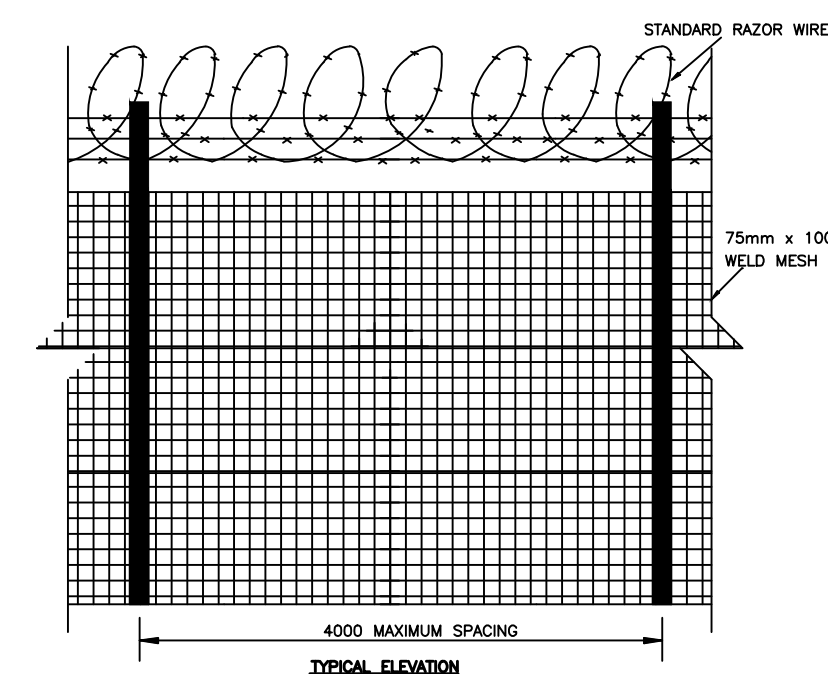
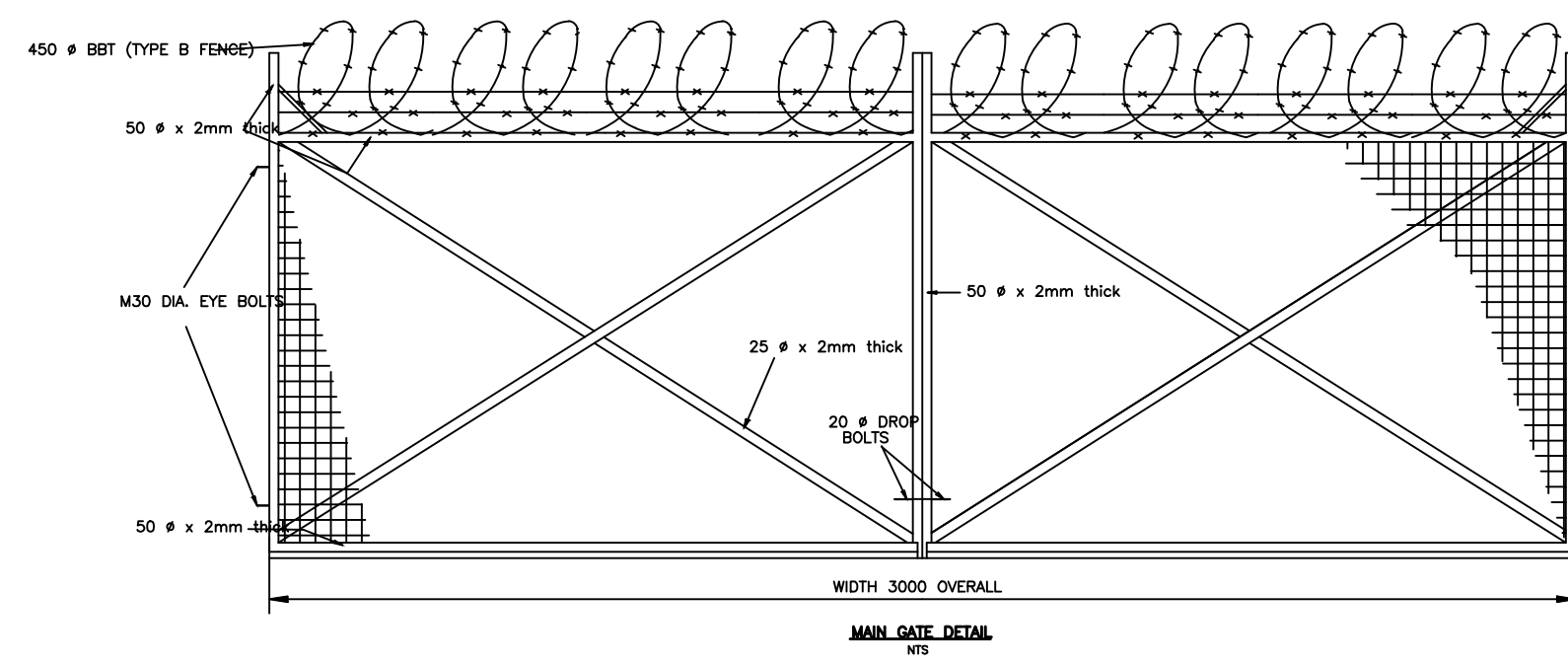
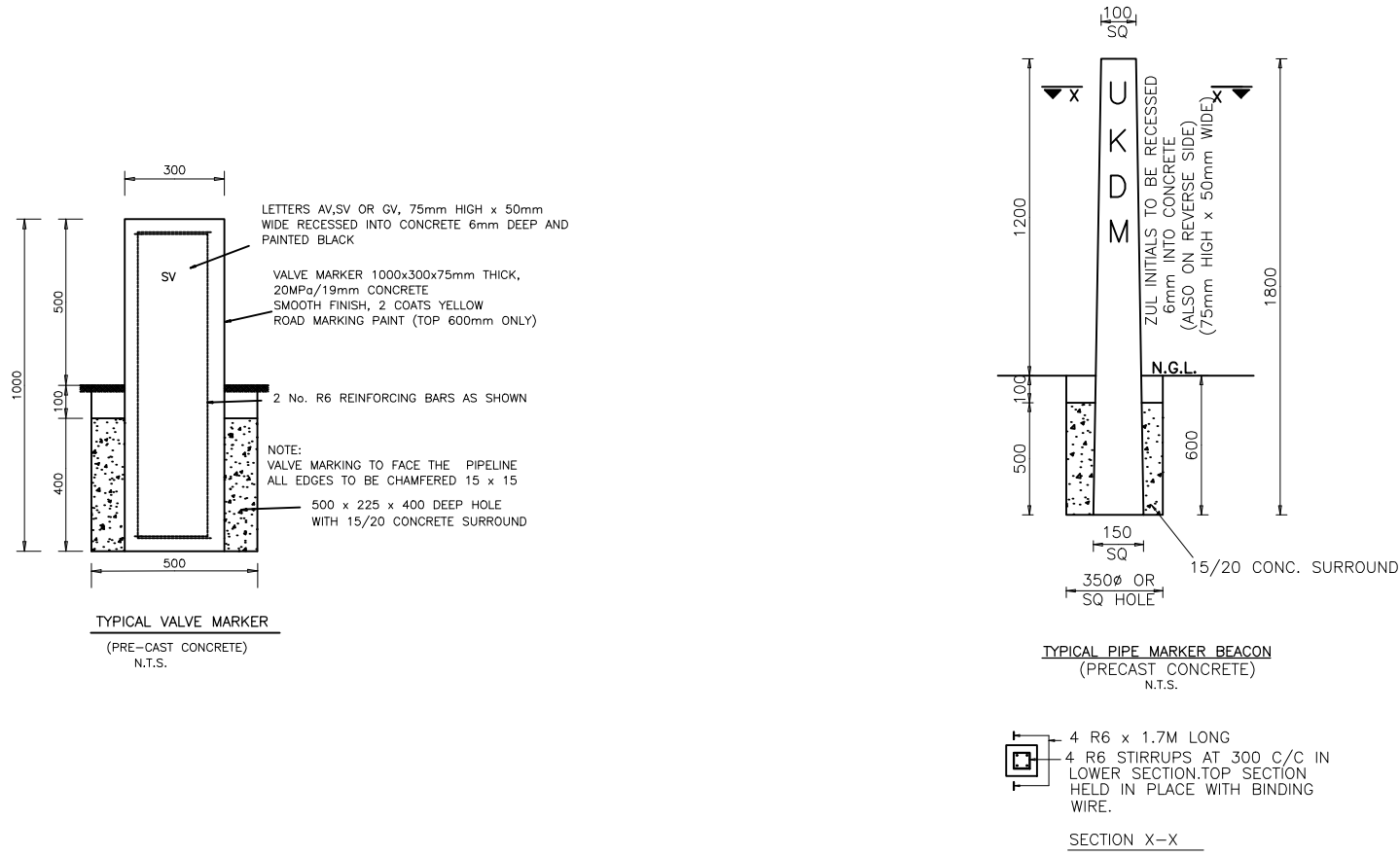
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	REVISIONS	DATE		
	ONLY REVISIONS MARKED THUS ARE VALID			

DESIGNED	G. MLAMBO
CHECKED	S. MGUTSHINI (PR ENG REG. No. 20040208)
DRAWN	P.N.
CHECKED	G. MLAMBO
PROJ. ENG. / ING.	G. MLAMBO (PR ENG REG. No. 20190797)


 TEL: (033) 346 0689
 FAX: (033) 346 0692
 E-mail: ziyanda@ziyandaconsulting.co.za
 APPROVED :
 S. MGUTSHINI
 (PR ENG REG. No. 20040208)


 APPROVED :

PROJECT/DRAWING TITLE UGU DISTRICT MUNICIPALITY
 VULAMEHLO CROSS BORDER WATER SCHEME
 CONSTRUCTION OF CIVIL, MECHANICAL & ELECTRICAL
 WORKS TO OPTIMISE THE OPERATIONS OF THE VULAMEHLO
 WATER TREATMENT WORKS
 CHEMICAL STORAGE BUILDING

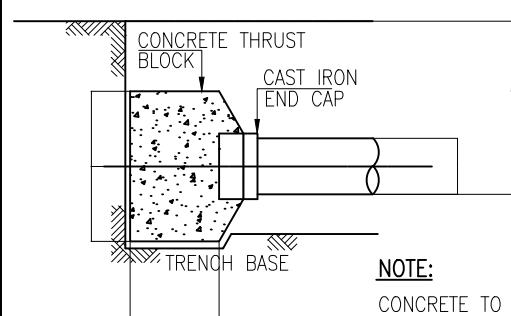
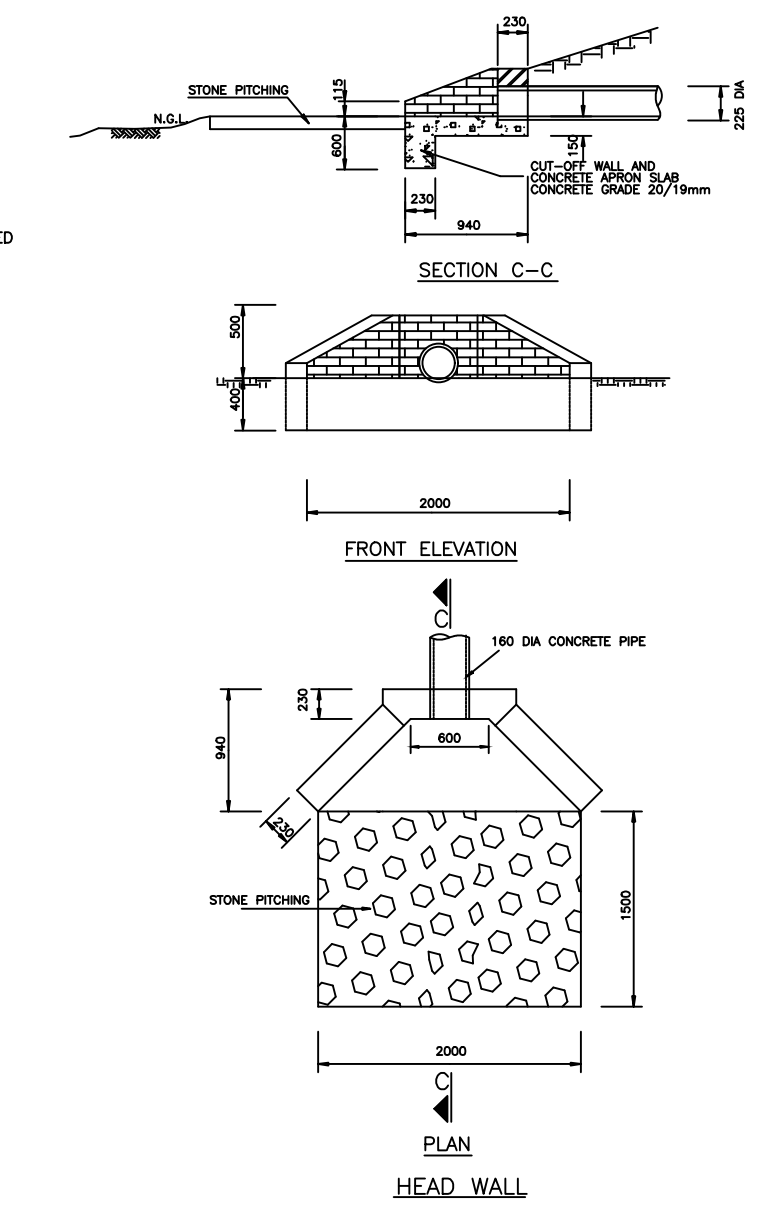
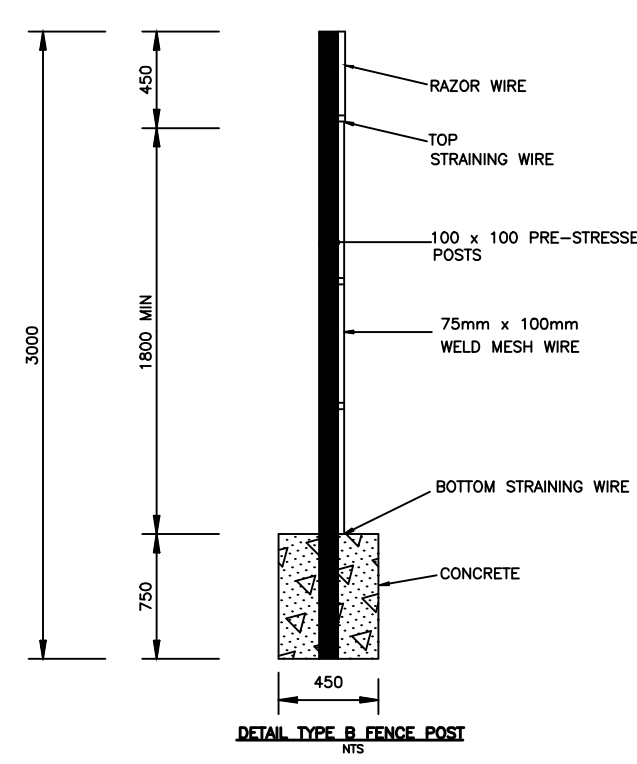


FOR SECURITY FENCING

NOTE:

1) 4 No. STAINING WIRES.

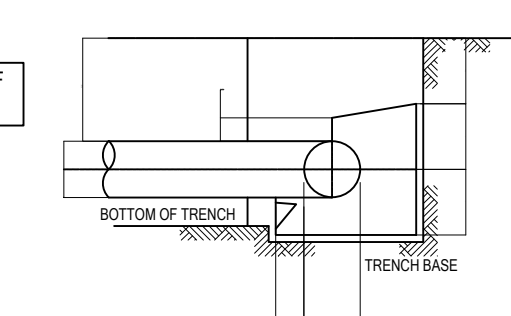
2) BBT-COILS TO BE EXTENDED NOT MORE THAN 10 000.



THRUST BLOCKS : BENDS AND T-JUNCTIONS
MAX. TEST PRESSURE 900kPa : PIPE CLASS 12

PIPE D (mm)	ANGLE OF BEND							
	11.25°		22.5°		45°		90°	
	X	Y	X	Y	X	Y	X	Y
50	75	75	75	75	100	100	225	100
63	75	75	100	100	150	150	275	150
75	75	75	100	125	175	150	325	175
90	100	100	125	125	200	175	400	200
100	100	100	125	150	250	200	475	250
110	125	125	175	175	275	225	525	275
125	125	125	175	200	300	250	600	300
140	150	150	200	200	350	300	675	350
160	175	150	225	225	350	275	675	350
200	200	175	275	250	425	325	825	425
250	250	225	325	325	525	400	1000	525
315	300	275	400	400	650	500	1250	650

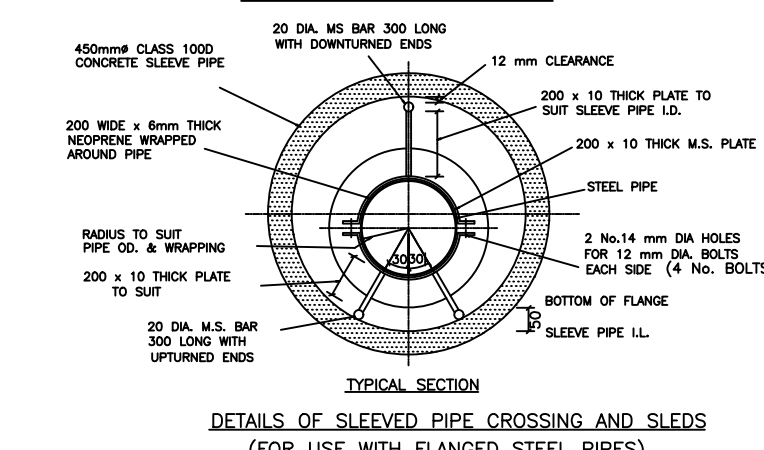
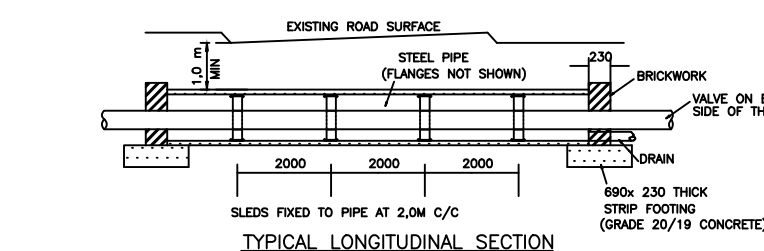
MAXIMUM DEPTH OF COVER IS 800mm.



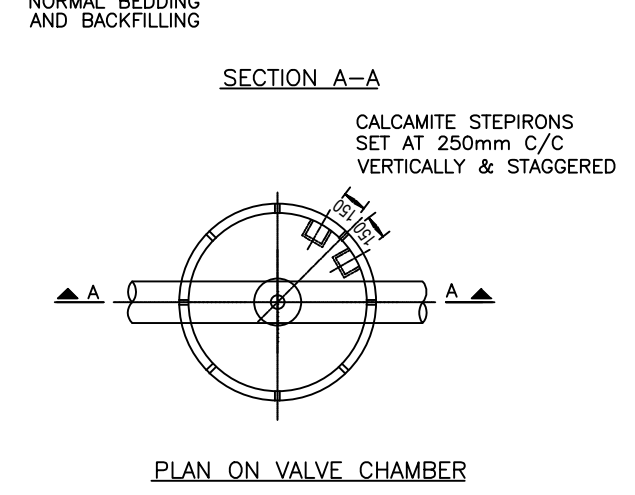
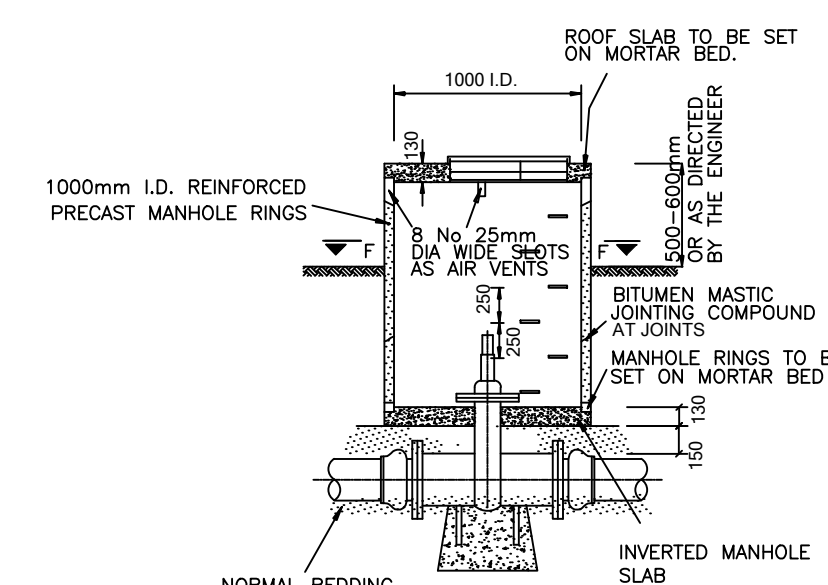
NO THRUST BLOCKS WILL BE REQUIRED UNLESS OTHERWISE SHOWN FOR CHANGE OF DIRECTION LESSER THAN 10°

REFER TO TABLE BELOW FOR APPLICABLE SIZES

PIPE SIZE	CONCRETE SLEEVE SIZE
100mm	150mm
110mm & LOWER	300mm

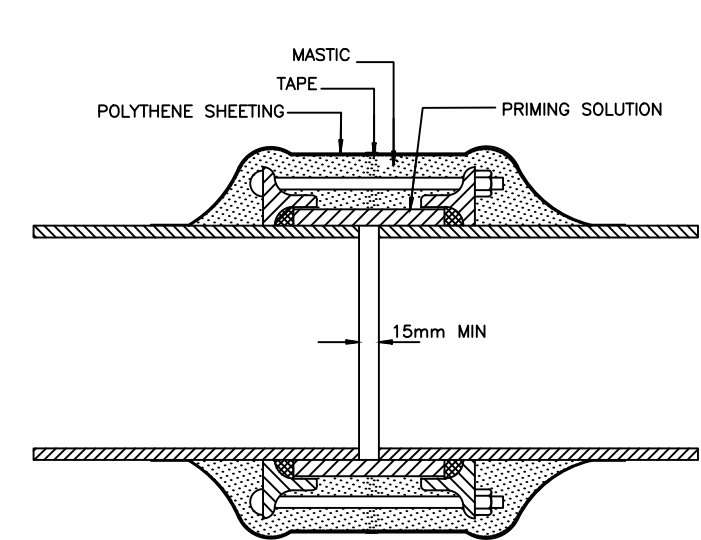
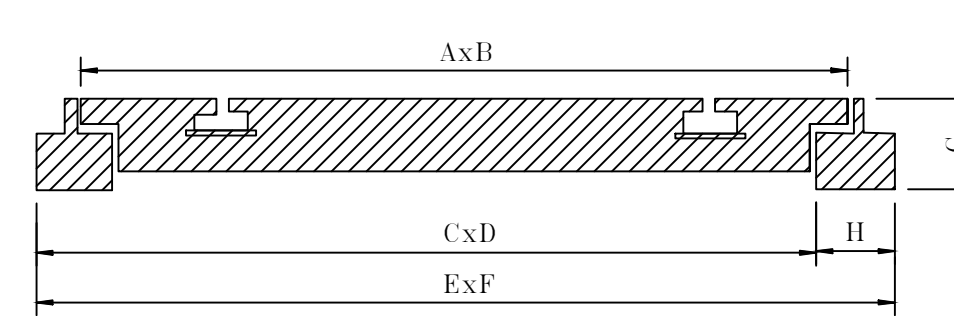
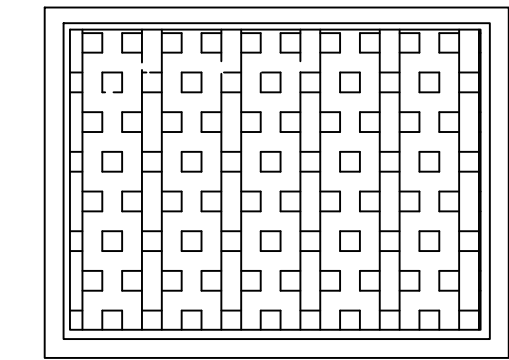


DETAILS OF SLEEVED PIPE CROSSING AND SLEDS (FOR USE WITH FLANGED STEEL PIPES)



ACCESS MANHOLE COVER DETAIL (SANS 1882:2003)

Code	Size	Type	Class	Force	Kg	A	B	C	D	E	F	G	H
119130	670mm	9D	M/D	40kN	39KG	670mm	530mm	595mm	450mm	760mm	620mm	80mm	75mm



MASTIC PROTECTION TO FLANGED JOINTS, FLEXIBLE COUPLINGS AND FLANGE ADAPTORS TO BE AS SUPPLIED BY DENSO PRODUCTS OR SIMILAR APPROVED.

NOTE:

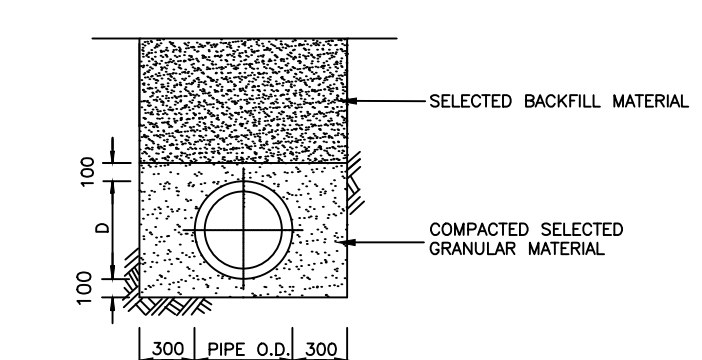
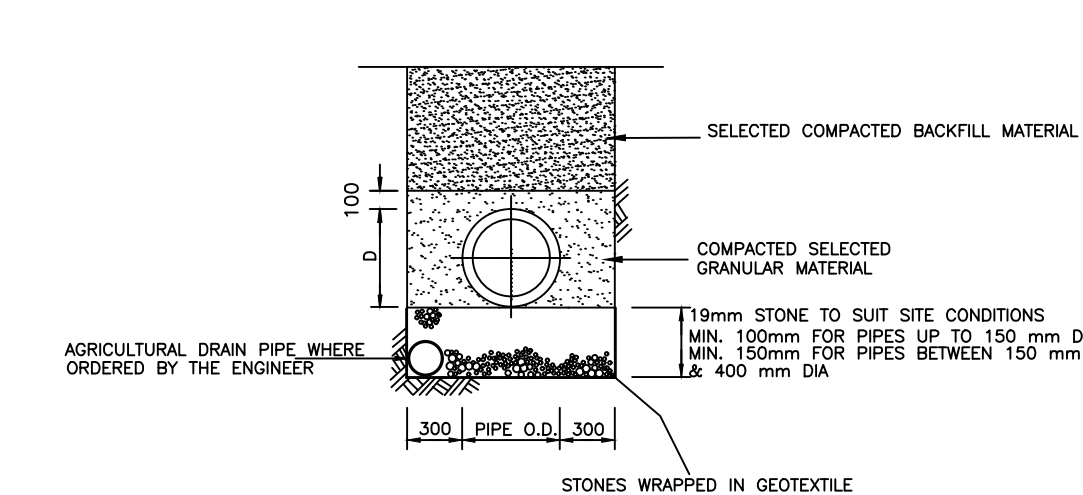
1. APPLICATION TO BE IN ACCORDANCE WITH MANUFACTURERS' INSTRUCTIONS.

2. MASTIC TO BE APPLIED AS SHOWN ABOVE AND MOULDLED TO CONTOUR OF FLANGED JOINT/COUPLING ENSURING ALL AIR IS EXPELLED.

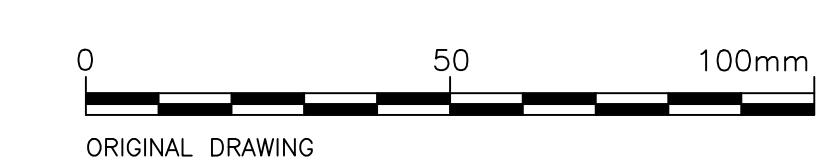
3. MASTIC TAPE TO OVERLAP 75mm CIRCUMFERENTIALLY.

4. JOINT BY 100mm AND SECURED USING DUCT TAPE.

(TO BE READ IN CONJUNCTION WITH PROJECT SPECIFICATION)



TYPICAL PIPELINE TRENCH SECTION N.T.S.



No.	REFERENCE DRAWINGS

0	ISSUED FOR TENDER	02/23	G.M	S.
△	REVISIONS	DATE	CHKD	APPR
ONLY REVISIONS MARKED THUS △ ARE VALID				

DESIGNED	G. MLAMBO
CHECKED	G. MLAMBO
DRAWN	N. MAGWAZA
CHECKED	C. MLAMBO (PR. ENG. REG. No. 20190797)
PROJ. ENG.	G. MLAMBO (PR. ENG. REG. No. 20190797)

TEL: (033) 346 0689
FAX: (033) 346 0692
E-mail: ziyanda@ziyandaconsulting.co.za

APPROVED : S. MGUTSHINI (PR. ENG. REG. No. 20040208)

CLIENT: Ugu District Municipality

APPROVED : _____

PROJECT/DRAWING TITLE: UGU DISTRICT MUNICIPALITY
VULAMEHLO CROSS BORDER WATER SCHEME
CONSTRUCTION OF CIVIL, MECHANICAL & ELECTRICAL WORKS TO OPTIMISE THE OPERATIONS OF THE VULAMEHLO WATER TREATMENT WORKS
STANDARD DETAILS

DRAWING STATUS: ISSUED FOR TENDER

ORIGINAL SCALE: AS SHOWN ON A0

ALT. DWG. No. UGU-07-1630-2023

SHT. No. OF PROJECT No. J094

DRAWING No. J094-D08

REVISION: 0

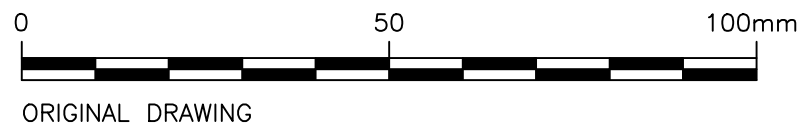


ELECTRICAL LEGEND

- FLUORESCENT LIGHTING
- SECURITY LIGHTING
- PLUG POINT
- SWITCH POINT
- AIR CONDITIONER

NOTES

- DOORS**
INTERIOR WALL PLY C/DECK
EXTERIOR WALL PLY C/DECK
- ELECTRICITY**
D.B220V
NORMAL TRUNKING
- OTHER**
IND. VINYL
- OFFICE FURNITURE
AS PER THE BID SPECIFICATION



DRAWING STATUS	
ISSUED FOR TENDER	
ORIGINAL SCALE	
AS SHOWN ON A1	
ALT. DWG. No.	CONTRACT No.
	UGU-07-1630-2023
SHT. No.	OF
	PROJECT No.
	J094
DRAWING No.	REVISION
J094 - D09	0

No.	REFERENCE DRAWINGS
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0	ISSUED FOR TENDER	04/23	GM	SM
△	REVISIONS	DATE	CHKD	APPRV
ONLY REVISIONS MARKED THUS △ ARE VALID				

DESIGNED	B. MLALAZI
CHECKED	G. MLAMBO
DRAWN	B. MLALAZI
CHECKED	G. MLAMBO
PROJ. ENG.	G. MLAMBO (PR ENG REG. No. 20190797)



TEL: (033) 346 0689
FAX: (033) 346 0692
E-mail: ziyanda@ziyandaconsulting.co.za

APPROVED: _____
S. MGUTSHINI
(PR ENG REG. No. 20040208)

PO BOX 809
HILTON
PIETERMARITZBURG
3245

CLIENT:



APPROVED: _____

PROJECT/DRAWING TITLE

UGU DISTRICT MUNICIPALITY

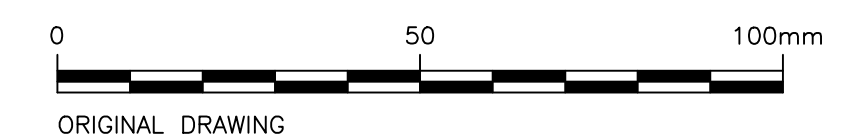
VULAMEHLO CROSS BORDER WATER SCHEME

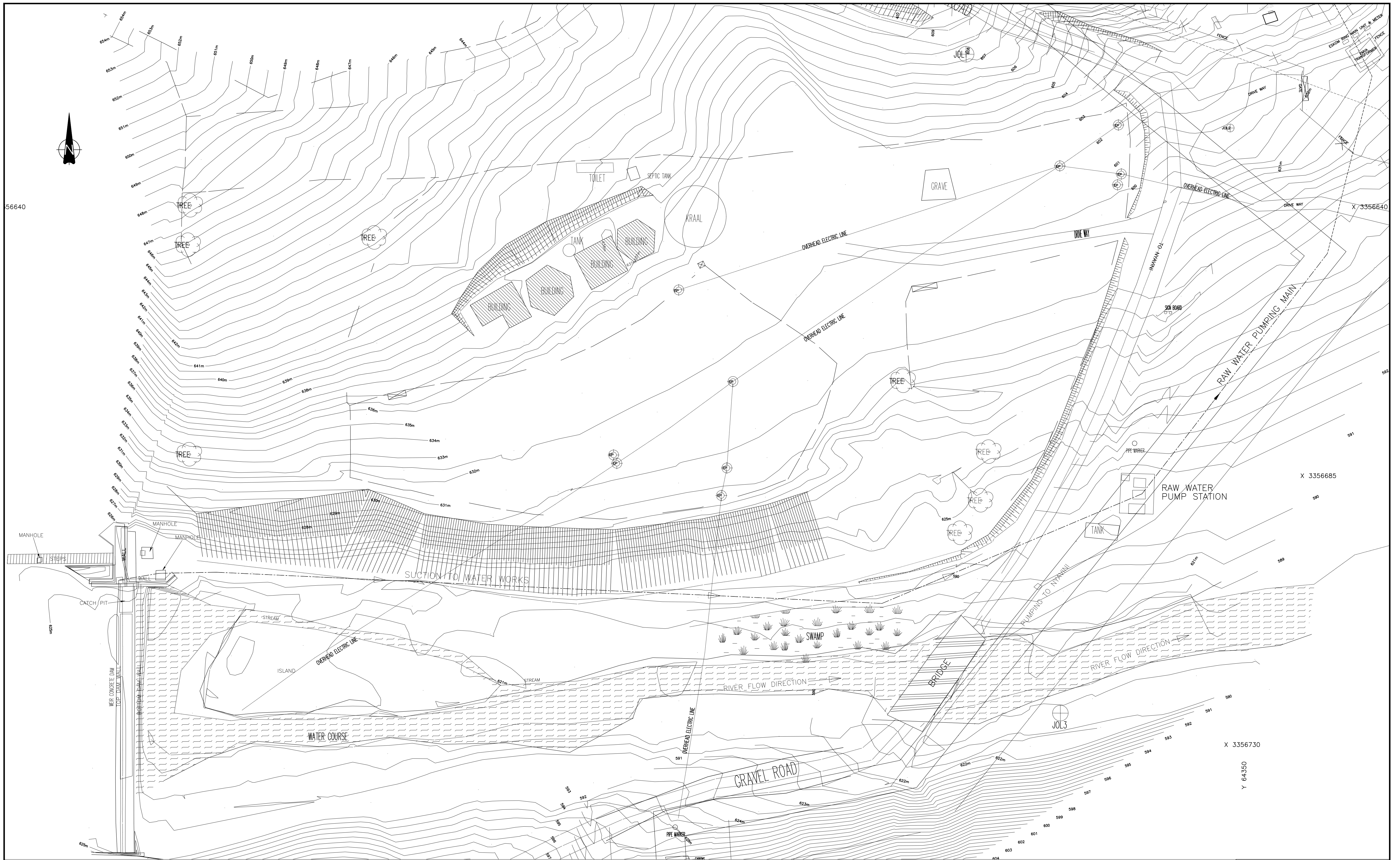
CONSTRUCTION OF CIVIL, MECHANICAL & ELECTRICAL WORKS TO OPTIMISE THE OPERATIONS OF THE VULAMEHLO WATER TREATMENT WORKS

ENGINEER'S OFFICE LAYOUT PLAN



- 1) CHROMADEK METAL SHEETING (RUST RESISTANT METAL)
- 2) SPRAY PAINTED TO CUSTOMER'S SPECIFICATIONS WITH AUTOMOTIVE QUALITY DUCO PAINT WORKING
- 3) HIGH PERFORMANCE 5 TO 7 YEAR OUTDOOR QUALITY VINYL LOGOS UV RESISTANT FULL COLOUR THERMAL PRINT ONTO A HIGH PERFORMANCE OUTDOOR GRADE VINYL SUBSTRATE OR HIGH PERFORMANCE 5 TO 7 YEAR OUTDOOR QUALITY
- 4) VINYL APPLIED DIRECTLY TO THE PREPARED CHROMADEK (IF LOGO CONSISTS OF FLAT COLOURS)
- 5) LOCATION
THE BOARD MUST BE ERECTED AT THE ENTRANCE TO THE CONSTRUCTION SITE
- 6) ERECTION DURATION
THE BOARD MUST REMAIN UNTIL THE END OF THE DEFECTS LIABILITY PERIOD

[illegible]



No.		REFERENCE DRAWINGS		REVISIONS		DATE		CHKD		APPRV		DESIGNED G. MLAMBO		CHECKED S. MGUTSHINI		DRAWN P. NAIDOO		TRACED		CHECKED		PROJ. ENG. G. MLAMBO (PR. ENG. REG. No. 20190797)		 TEL: (033) 346 0889 FAX: (033) 346 0892 E-mail: ziyanda@ziyandacconsulting.co.za APPROVED: G. MLAMBO (PR. ENG. REG. No. 20190797)		 PO BOX 809 HILTON PIETERMARITZBURG 3205 APPROVED: _____		PROJECT/DRAWING TITLE UGU DISTRICT MUNICIPALITY VULAMEHLO CROSS BORDER WATER SCHEME CONSTRUCTION OF CIVIL, MECHANICAL & ELECTRICAL WORKS TO OPTIMISE THE OPERATIONS OF THE VULAMEHLO WATER TREATMENT WORKS PROJECT PLAN (SHEET 2 OF 2)		DRAWING STATUS ISSUED FOR TENDER		ORIGINAL SCALE 1 : 200		CONTRACT No. UGU-07-1630-2023		SHT. No. OF		PROJECT No. J094		DRAWING No. J094-P01		REVISION 0	
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