

When replying please quote: AWWDA/GOK/M/W-03/2023-LOT 2. Vol I (6) PE-pmk

19th May 2023

To All Bidders,

**RE: CONSTRUCTION WORKS FOR THE AUGMENTATION OF ATHI WATER
SUPPLY PROJECTS IN 2 LOTS: LOT 2 - AUGMENTATION OF MURANG'A
COMMUNITY WATER SUPPLY PROJECT: CONTRACT NUMBER:
AWWDA/GOK/M/W-03/2023-LOT 2**

RESPONSE TO CLARIFICATIONS SOUGHT BY BIDDERS

Reference is made to the above-mentioned tender currently under procurement.

Pursuant to Clause 7.3 of the Instruction to Tenderers on Clarification and amendment of the Bidding Documents, please find hereby attached responses to clarifications as received by 16th May 2023.

All bidders are further informed that the last date of tender submission remains Tuesday 23th May 2023, at 12.00 p.m. East African Time, at the following address:

**The Chief Executive Officer,
Athi Water Works Development Agency,
Ground Floor, Athi Water Plaza,
Muthaiga North Road, Off Kiambu Road,
P.O. Box 45283-00100 Nairobi**



ENG. MICHAEL M. THUITA, MBS
CHIEF EXECUTIVE OFFICER

Encl;

1. Response to Clarifications.
2. Drawings for the 50m³ BPT, 100m³ BPT and Solar Masonry Wall



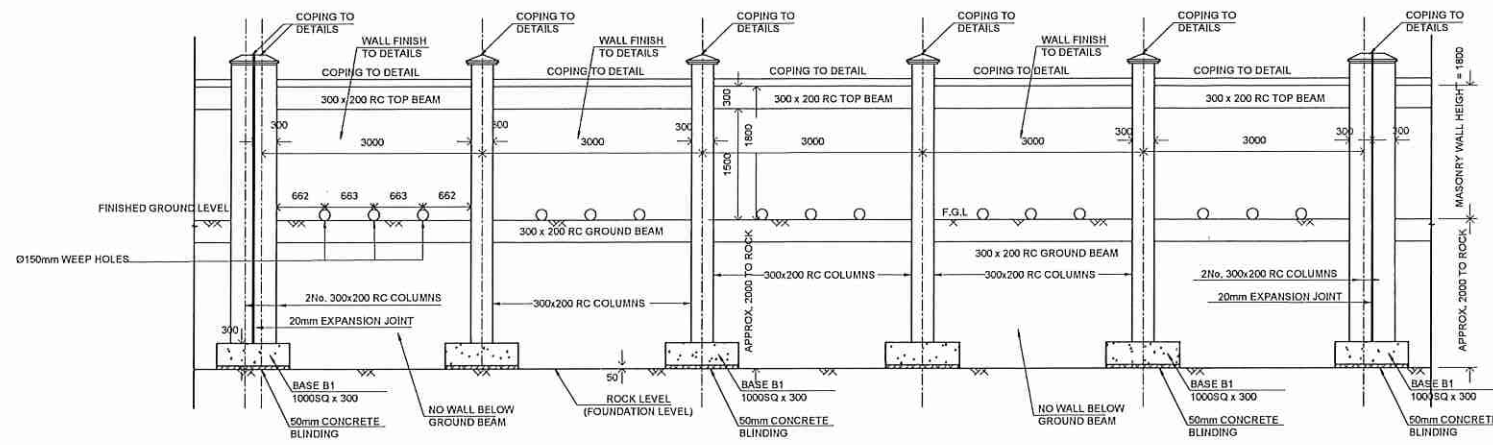
AUGMENTATION OF MURANG'A COMMUNITY WATER SUPPLY PROJECT

TENDER NO.: AWWDA/GOK/M/W-03/2023-LOT 2.

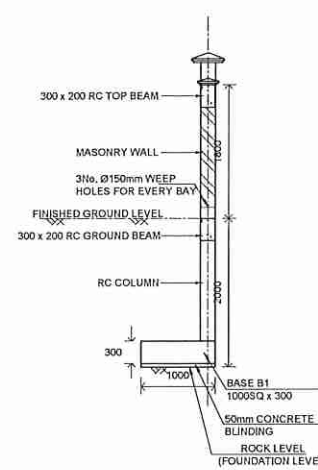
RESPONSE TO CLARIFICATIONS SOUGHT BY BIDDERS



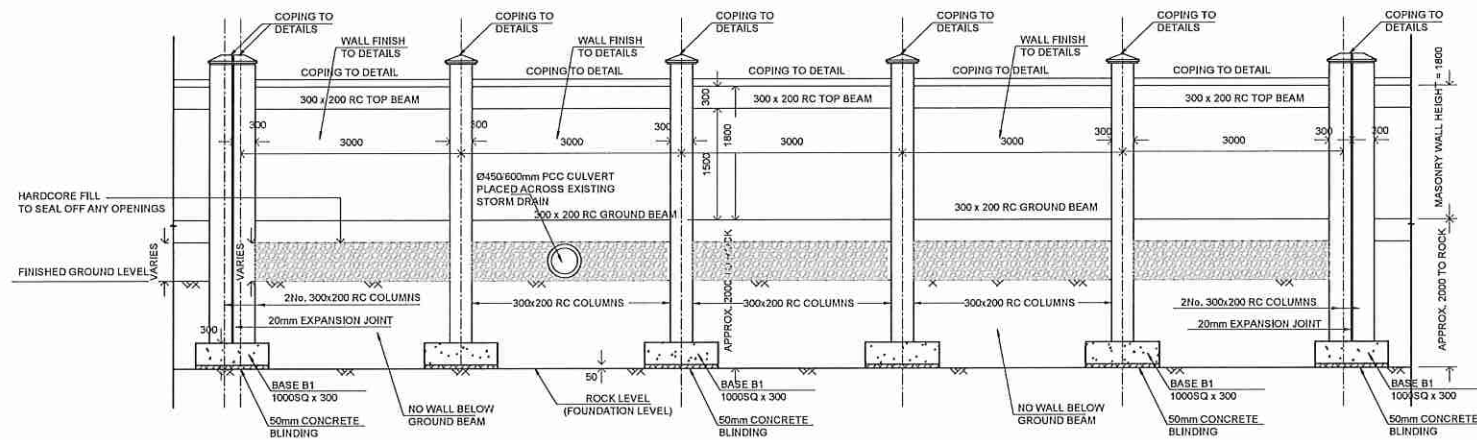
S/No.	Request for Clarification / Query	Response
1.	Kindly provide drawings for the Bulk Pressure (50M3 and 100M3) Tanks and other construction works.	The drawings for 50m3, 100m3 and the fence are hereby attached. The total lengths of the water pipelines are as per the BoQ. Detailed construction drawings will be developed and charged under Bill No 1 item no A290. Bidders interested to visit site for familiarisation are advised to contact AWWDA for planning purposes.
2.	In the Summary of Bill of Quantities, it has been mentioned as 2No. 50M3, while as in the BOQ Bill No. 3 it has been mentioned as 1No. Please clarify on the quantity.	This tender will involve construction of 2No. 50M3 tanks as per Bill No. 3 Collection Page.
3.	In the summary of Bill of Quantities: Kandara Bulk System is indicated as Bill No. 5, while as in the BOQ order it is indicated as Bill No. 4. Kindly Clarify the same.	The Kandara Bulk System is Bill No. 4 while as Equipping, Solarization and Construction of Steel Elevated Tanks is Bill No. 5
4.	Bill No. 1: in the provisional Sum Item Nos A325,326, A27.1 and A42.2 contractors' profit and overheads are not included please clarify on the same.	The contractor's profits and overheads are deemed to be covered in other items in the contract
5.	Bill No. 2: To carry out pilot excavations it is not indicated the quantity or unit. Where do we include in the price? Also, the fitting for the pipeline it is not indicated whether to use fusion method or fitting method, if it is fusion it is not mentioned in the Bill of Quantities.	The Contractor is expected to develop appropriate construction method statement and price for the same accordingly within the items provided for in this tender. The tender documents remain unchanged
6.	Bill No 4: In Kandara Bulk System item no x136 erecting of chain link is indicated as lump sum, please clarify the no. of metres for the perimeter.	The intake perimeter fence is 500m long
7.	Bill No. 5: it is requested for 5No boreholes and equipping, while as in reticulation bill No. 5C it is indicated as laying of 1KM pipeline and construction of 1 no water kiosk, while as in summary it is 10 no., please clarify whether it is 1no or 10 No.	The tender involves equipping of 5no. boreholes, construction of 5no. steel elevated tanks, reticulation of 10km length and construction of 10no. water kiosks and finally solarization of 10no. boreholes. The tender documents remain unchanged
8.	Bill No. 2: item A261-is the quantity of pressure testing and disinfection as per bill no 2 item A262 correct?	Pressure testing and disinfection of the water lines in sections of 100m
9.	Bill no 4-item A252-is the rate inclusive of pressure testing	Yes
10.	Bill No. 4-item A253-according to the description, does it mean discharge?	Yes, it is discharge by use of Electromagnetic Flow Meters
11.	Clarification on NCA. You Saying the only entity to bid is the one with NCA 4 or NCA4 and above	NCA 4 and above



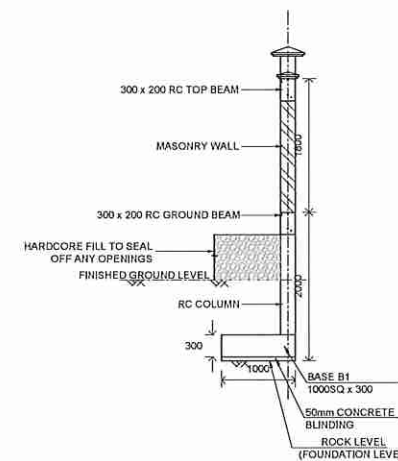
BOUNDARY WALL DETAIL ELEVATION
(TOP OF GROUND BEAM & F.G.L. AT SAME LEVEL)
SCALE 1:50



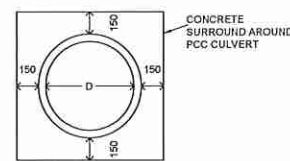
SECTION THROUGH BOUNDARY WALL
SCALE 1:50



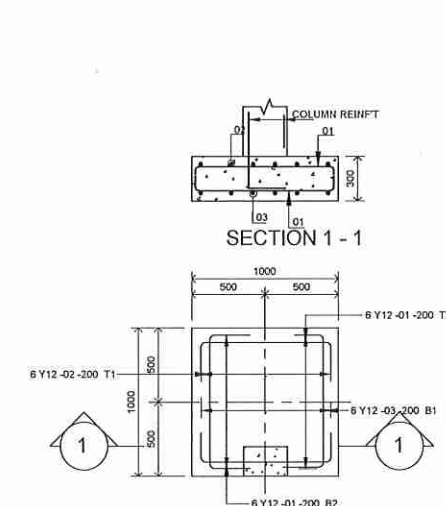
BOUNDARY WALL DETAIL ELEVATION
(SOFFIT OF GROUND BEAM ABOVE F.G.L.)
SCALE 1:50



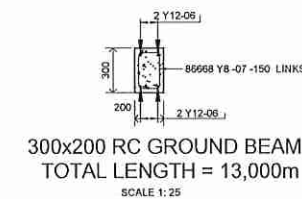
SECTION THROUGH BOUNDARY WALL
SCALE 1:50



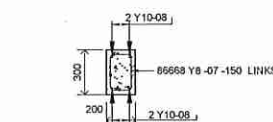
STORMWATER PCC CULVERT
FRONT ELEVATION
SCALE 1:25



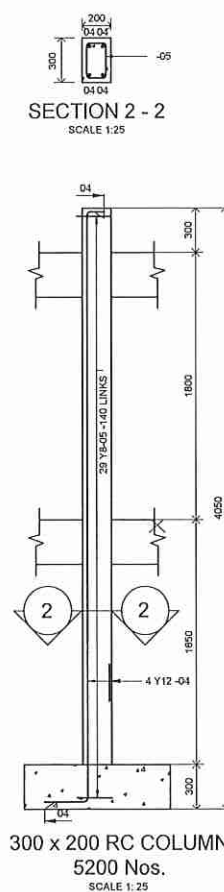
BASE B1
1000 x 1000 x 300
5200 Nos
SCALE 1:25



300x200 RC GROUND BEAM
TOTAL LENGTH = 13,000m
SCALE 1:25



300x200 RC TOP BEAM
TOTAL LENGTH = 13,000m
SCALE 1:25



300 x 200 RC COLUMN
5200 Nos.
SCALE 1:25

CLIENT: Athi Water Works Development Agency (AWWDA)
Africa Re-Centre, Hospital Road, Upper Hill,
P.O Box 45283-00100, Nairobi, Kenya.
Tel: +254 202727438.
Mob.: +254-715688272
Email: info@awwda.go.ke
Website: www.awwda.go.ke

Financier: The Government of Kenya

REVISIONS	MARK	DATE	DETAILS
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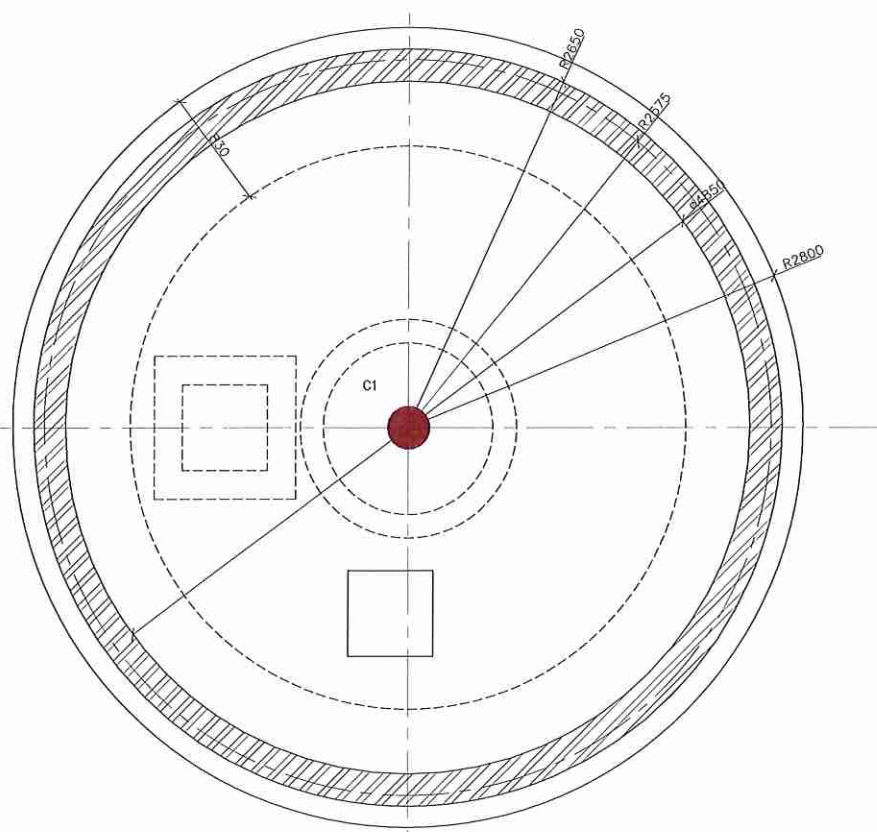
NOTES:

- FOUNDATION TO BE APPROX. 2000mm DEEP ON ROCK AND TO THE ENGINEER'S APPROVAL.
- CONCRETE GRADE COLUMNS AND GROUND BEAMS = 25N/mm². THE REST OF THE STRUCTURES = 20mm².
- MAXIMUM AGGREGATE SIZE 20.
- ALL DIMENSIONS IN MILLIMETERS.
- DRAWING TO BE READ IN CONJUNCTION WITH ARCHITECT'S DRAWING.
- SETTING OUT TO ARCHITECT DRAWINGS.
- MINIMUM MASONRY WALL STRENGTH 5.0 N/mm².
- COVER TO REINFORCEMENT: BEAMS = 25mm COLUMNS = 30mm BASES = 50mm

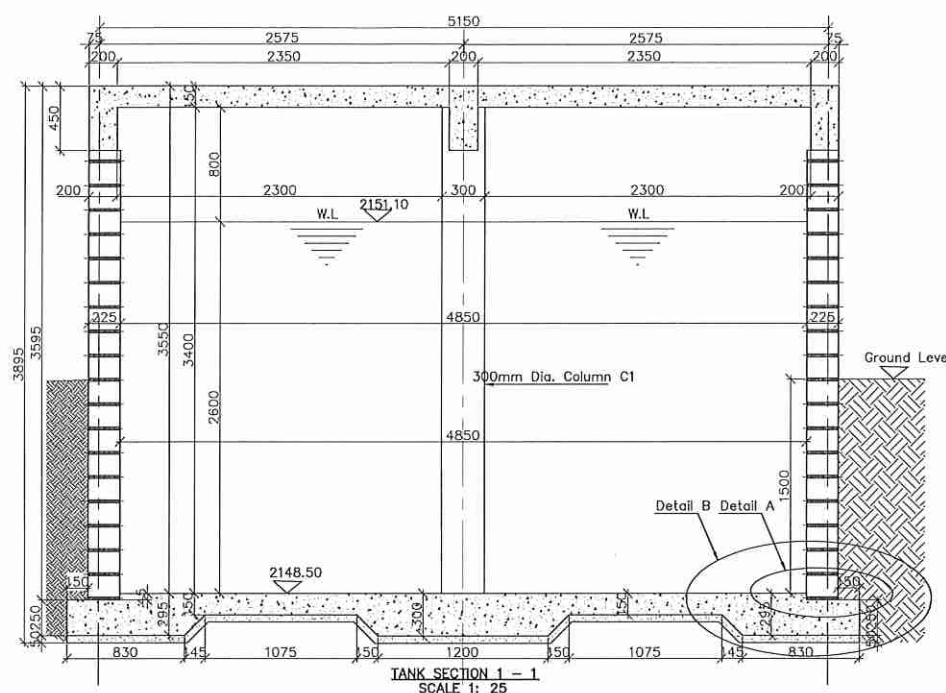
PROJECT TITLE
MASONRY WALL TO SECURE SOLAR PANELS
DRAWING TITLE
BOUNDARY WALL DETAILS

LOT 2: AUGMENTATION OF MURANG'A COMMUNITY WATER SUPPLY PROJECT
CONTRACT NO: AWWDA/GOK/M/W-03/2023-LOT 2

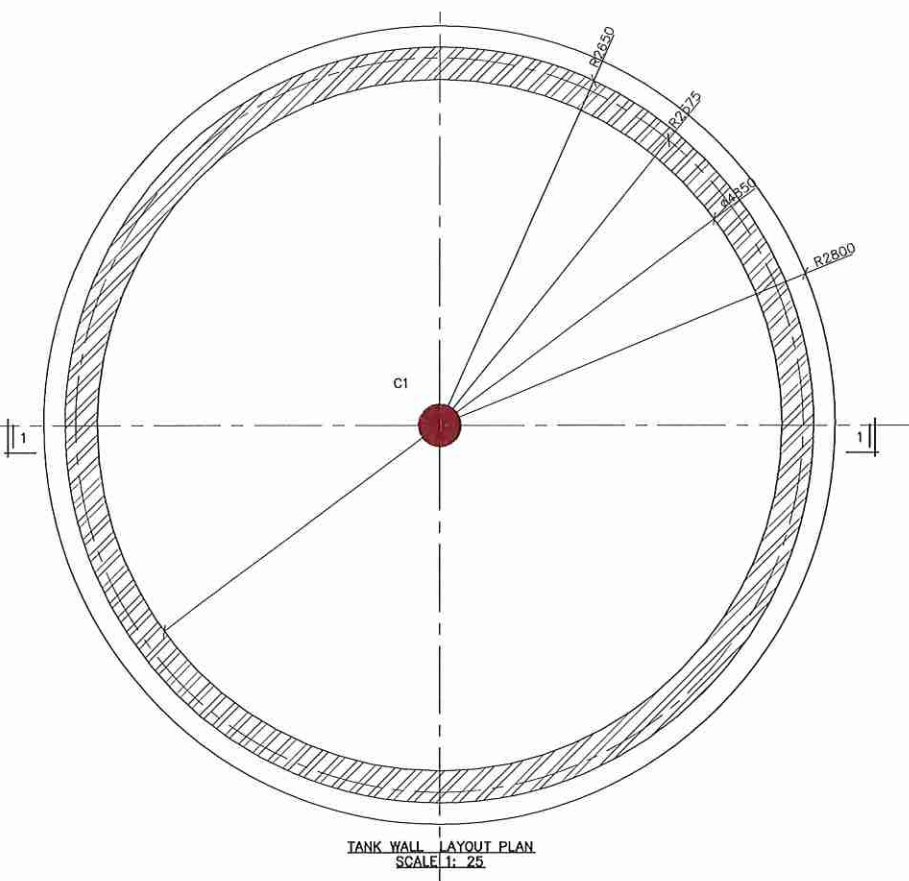
DESIGNED BY PAIK	DATE MAY 2023
DRAWN BY PMK	CHECKED BY DKR
SCALE A1 DWG 1:25/50 A3 DWG 1:50/100	REVISION 0
DRAWING NO. AWWDA/GOK/M/W-03/2023 - 1	



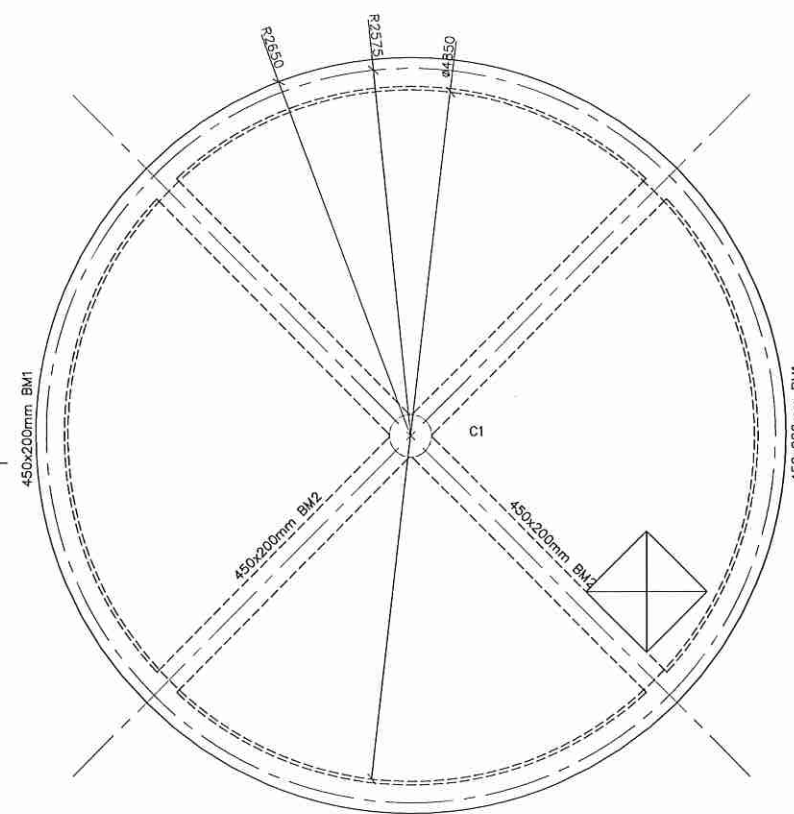
TANK FOUNDATION LAYOUT PLAN
SCALE 1: 25



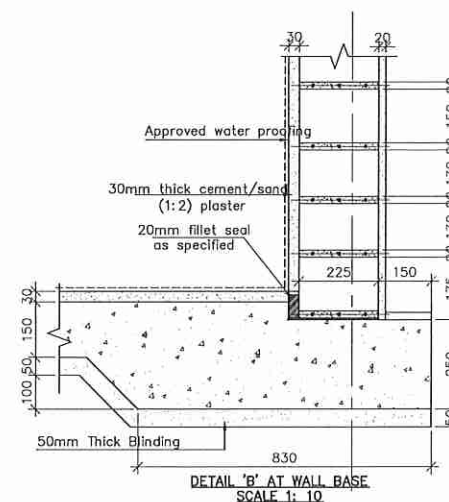
TANK SECTION 1-1
SCALE 1: 25



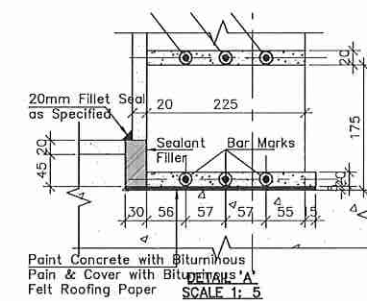
TANK WALL LAYOUT PLAN
SCALE 1: 25



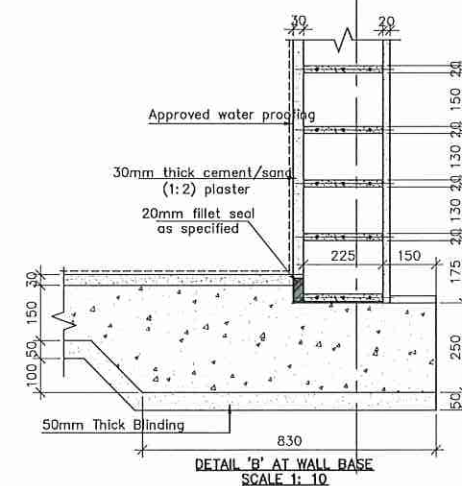
150mm THICK COVER SLAB LAYOUT PLAN
SCALE 1: 25



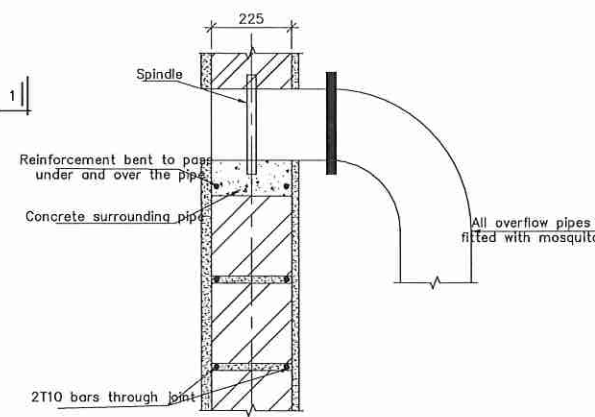
DETAIL 'B' AT WALL BASE
SCALE 1: 10



DETAIL 'A' AT WALL BASE
SCALE 1: 5



DETAIL 'B' AT WALL BASE
SCALE 1: 10



DETAIL 'A' AT WALL BASE
SCALE 1: 10

DETAIL 'A' AT WALL BASE
SCALE 1: 10

NOTES

1. All dimensions are in millimeters unless otherwise stated.
2. This drawing must not be scaled, only figured dimensions should be used.
3. This drawing must be read in conjunction with relevant Architectural drawings.
4. Reinforced concrete to be grade 25 and blinding class 15 to BS 8110.
5. Cover to main reinforcement to be as follows:
 - (a) Foundation = 50mm
 - (b) Columns = 40mm
 - (c) Beams = 30mm
 - (d) Slabs = 20mm
6. "I" Denotes deformed high yield bars to BS 4449. "R" Denotes round mild steel bars to BS 4449.
7. Reinforcement in walls and columns must be inspected by the Engineer before being enclosed in the formwork.
8. All masonry walls must be reinforced with 25mm hoop iron after every two alternate courses. The hoop iron must be extended through the column sections.
9. To ensure enhanced bonding between the masonry and the R.C. columns, the masonry walling must be raised first before the columns are casted.
10. All mortar used to be of cement sand mix 1:3, with all the stone walling being laid in 200mm courses with 12mm mortar joints.
11. A minimum of 5.0N/mm² average compressive strength of masonry in accordance with BS5390 should be used for all wall sections.
12. Mass concrete to be grade 15.
13. All concrete edges shall have 20x20mm chamfer.

REV	REVISIONS	DATE	APPROVED

CLIENT / EMPLOYER:
 CHIEF EXECUTIVE OFFICER
 ATHI WATER WORKS DEVT AGENCY
 P.O BOX 45283 - 00100 NAIROBI
 TEL: 020 - 2727438 FAX: 2724295

PROJECT MANAGER:
 CHIEF MANAGER - WATER WORKS
 ATHI WATER WORKS DEVT AGENCY
 P.O BOX 45283 - 00100 NAIROBI
 TEL: 020 - 2727438 FAX: 2724295

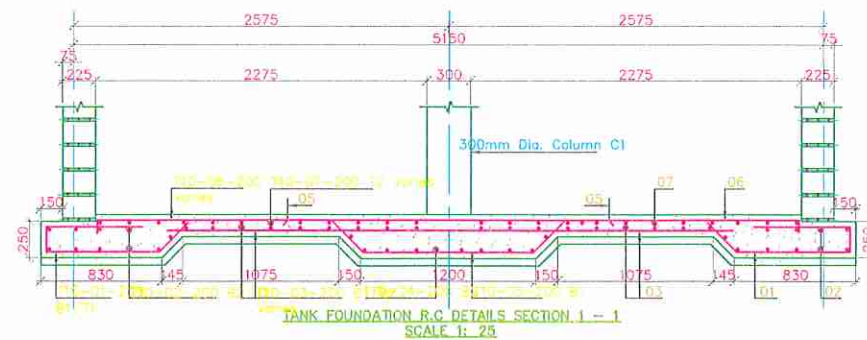
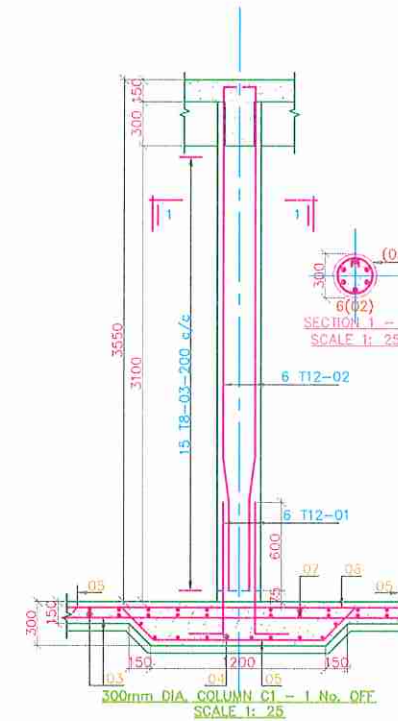
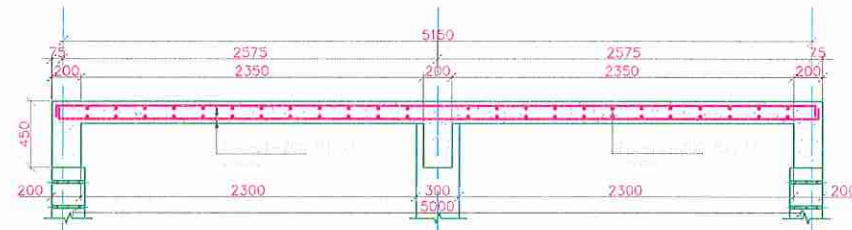
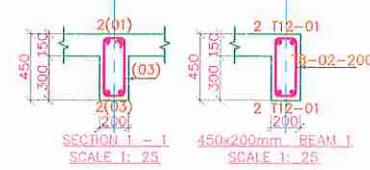
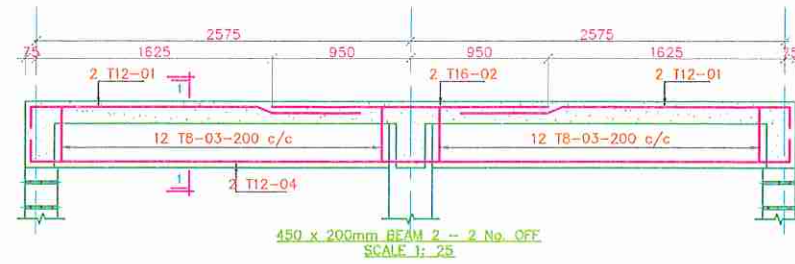
Project
 title: LOT 2: AUGMENTATION OF MURANG'A
 COMMUNITY WATER SUPPLY PROJECT
 CONTRACT NO.: AWWDA/GOK/M/W-03/2023-LOT 2

Drawing Title: 50m³ WATER STORAGE TANK.
 FOUNDATION, COVER SLAB LAYOUT PLAN, SECTION
 DETAILS

Designed by PMK
 Checked by DKR
 Scale 1: 25, 1:50
 Job No. Date 18TH MAY 2023
 Drawn by PMK
 Approved by DKR
 Sheet: 1 of 3

DRAWING No. AWWDA/GOK/M/W-03/2023 - 2

REV



NOTES

1. This drawing must not be scaled, only figured dimensions should be used.
2. This drawing must be read in conjunction with relevant Architectural drawings.
3. Reinforced concrete to be grade 25 and blinding class 15 to BS 8110.
4. Cover to main reinforcement to be as follows:
 - (a) Foundation = 50mm
 - (b) Columns = 40mm
 - (c) Beams = 30mm
 - (d) Slabs = 20mm
5. "T" Denotes deformed high yield bars to BS 4449. "R" Denotes round mild steel bars to BS 4449.
6. Reinforcement in walls and columns must be inspected by the Engineer before being enclosed in the formwork.
7. All masonry walls must be reinforced with 25mm hoop iron after every two alternate courses. The hoop iron must be extended through the column sections.
8. To ensure enhanced bonding between the masonry and the R.C. columns, the masonry walling must be raised first before the columns are casted.
9. All mortar used to be of cement sand mix 1:3, with all the stone walling being laid in 200mm courses with 12mm mortar joints.
10. A minimum of 5.0N/mm² average compressive strength of masonry in accordance with BS5399 should be used for all wall sections.
11. Mass concrete to be grade 15
12. All concrete edges shall have 20x20mm chamfer

REV	REVISIONS	DATE	APPROVED

CIENT / EMPLOYER:
CHIEF EXECUTIVE OFFICER
 ATHI WATER WORKS DEVT AGENCY
 P.O BOX 45283 - 00100 NAIROBI
 TEL: 020 - 2727438 FAX: 2724298

PROJECT MANAGER:
CHIEF MANAGER - WATER WORKS
 ATHI WATER WORKS DEVT AGENCY
 P.O BOX 45283 - 00100 NAIROBI
 TEL: 020 - 2727438 FAX: 2724298

SUPERVISING CONSULTANT:

Project title: LOT 2: AUGMENTATION OF MURANG'A COMMUNITY WATER SUPPLY PROJECT
 CONTRACT NO.: AWWDA/GOK/M/W-03/2023-LOT 2

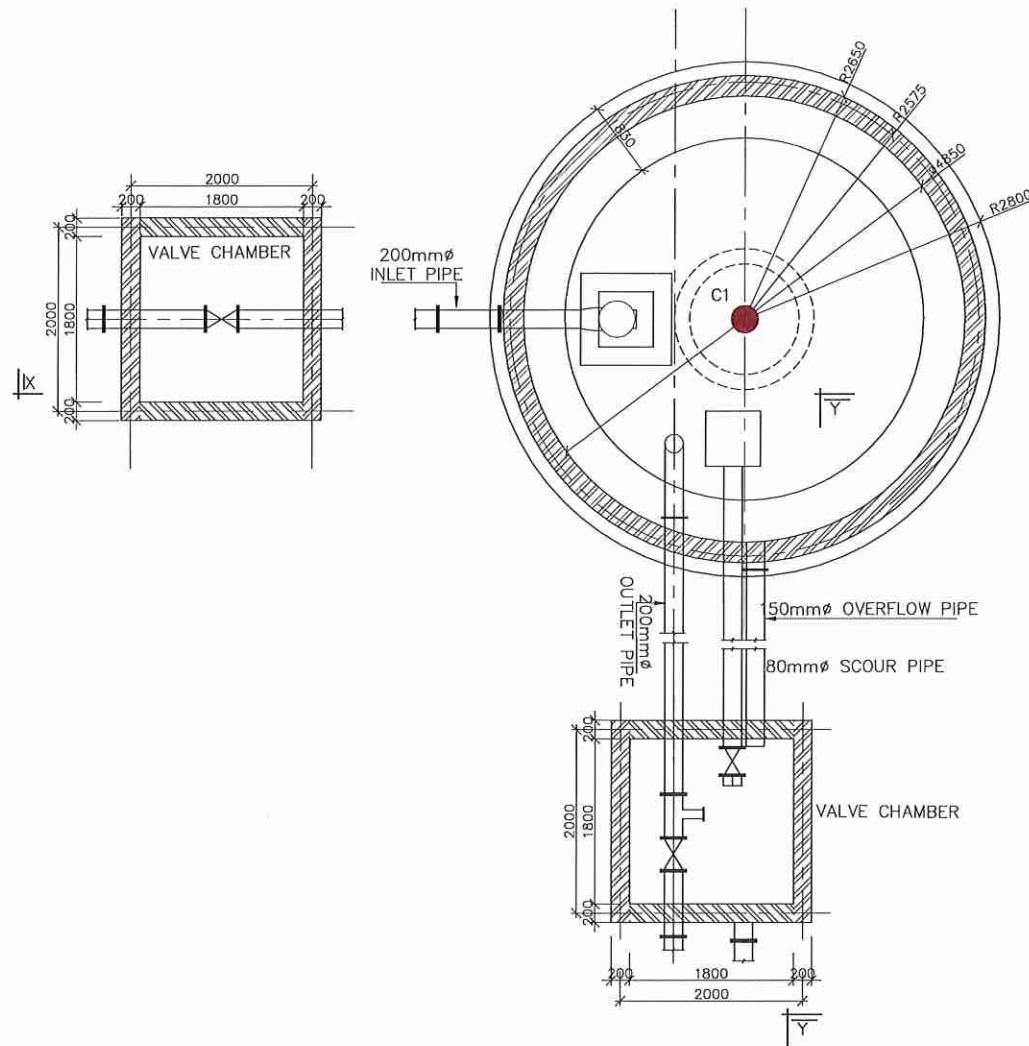
Drawing Title: 50m³ WATER STORAGE TANK.
 FOUNDATION, COVER SLAB, COLUMN AND BEAMS.
 R.C DETAILS

Designed by PMK
 Checked by DKR
 Scale 1: 25, 1:50
 Job No. MCE 225

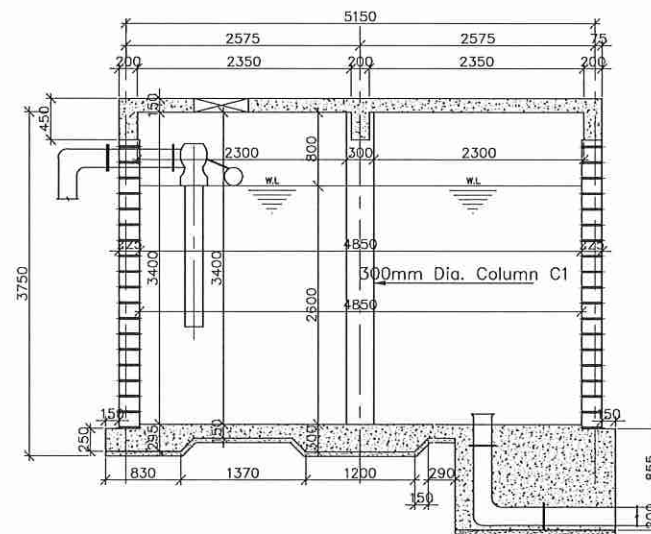
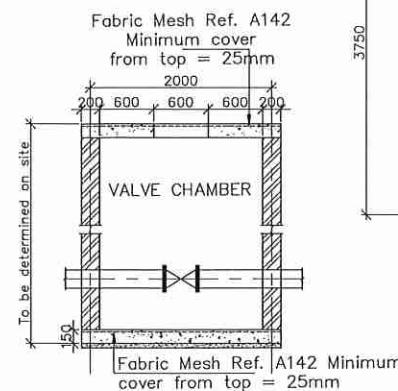
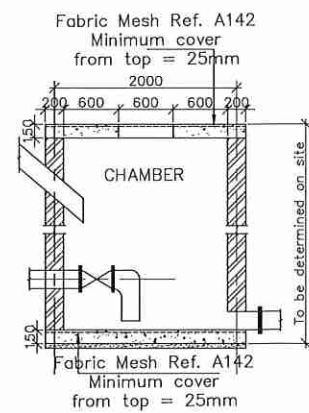
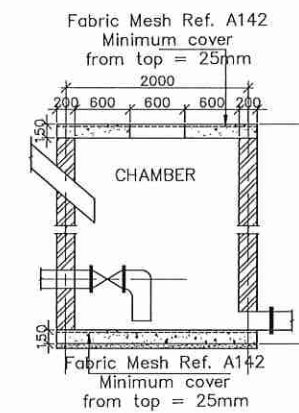
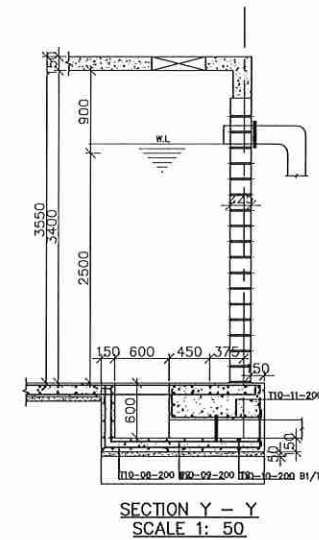
Drawn by PMK
 Approved by DKR
 Date 18TH MAY 2023
 Sheet: 2 of 3

DRAWING No. AWWDA/GOK/M/W-03/2-23 - 2

REV



225mm THICK TANK FOUNDATION & DETAILS LAYOUT PLAN
SCALE 1: 50



SECTION X - X
SCALE 1: 50

NOTES

1. All dimensions are in millimeters unless otherwise stated.
2. This drawing must not be scaled, only figured dimensions should be used.
3. This drawing must be read in conjunction with relevant Architectural drawings.
4. Reinforced concrete to be grade 25 and blinding class 15 to BS 8110.
5. Cover to main reinforcement to be as follows:
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11. A minimum of 5.0N/mm² average compressive strength of masonry in accordance with BS5390 should be used for all wall sections.
12. Mass concrete to be grade 15
13. All concrete edges shall have 20x20mm chamfer

REV	REVISIONS	DATE	APPROVED

CLIENT / EMPLOYER:
 CHIEF EXECUTIVE OFFICER
 ATHI WATER WORKS DEVT AGENCY
 P.O BOX 45283 - 00100 NAIROBI
 TEL: 020 - 2727438 FAX: 2724295

PROJECT MANAGER:
 CHIEF MANAGER - WATER WORKS
 ATHI WATER WORKS DEVT AGENCY
 P.O BOX 45283 - 00100 NAIROBI
 TEL: 020 - 2727438 FAX: 2724295

SUPERVISING CONSULTANT:

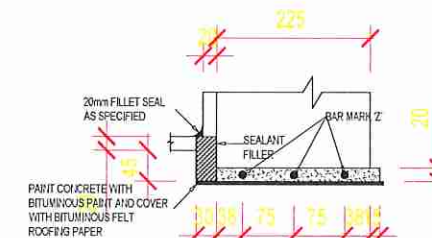
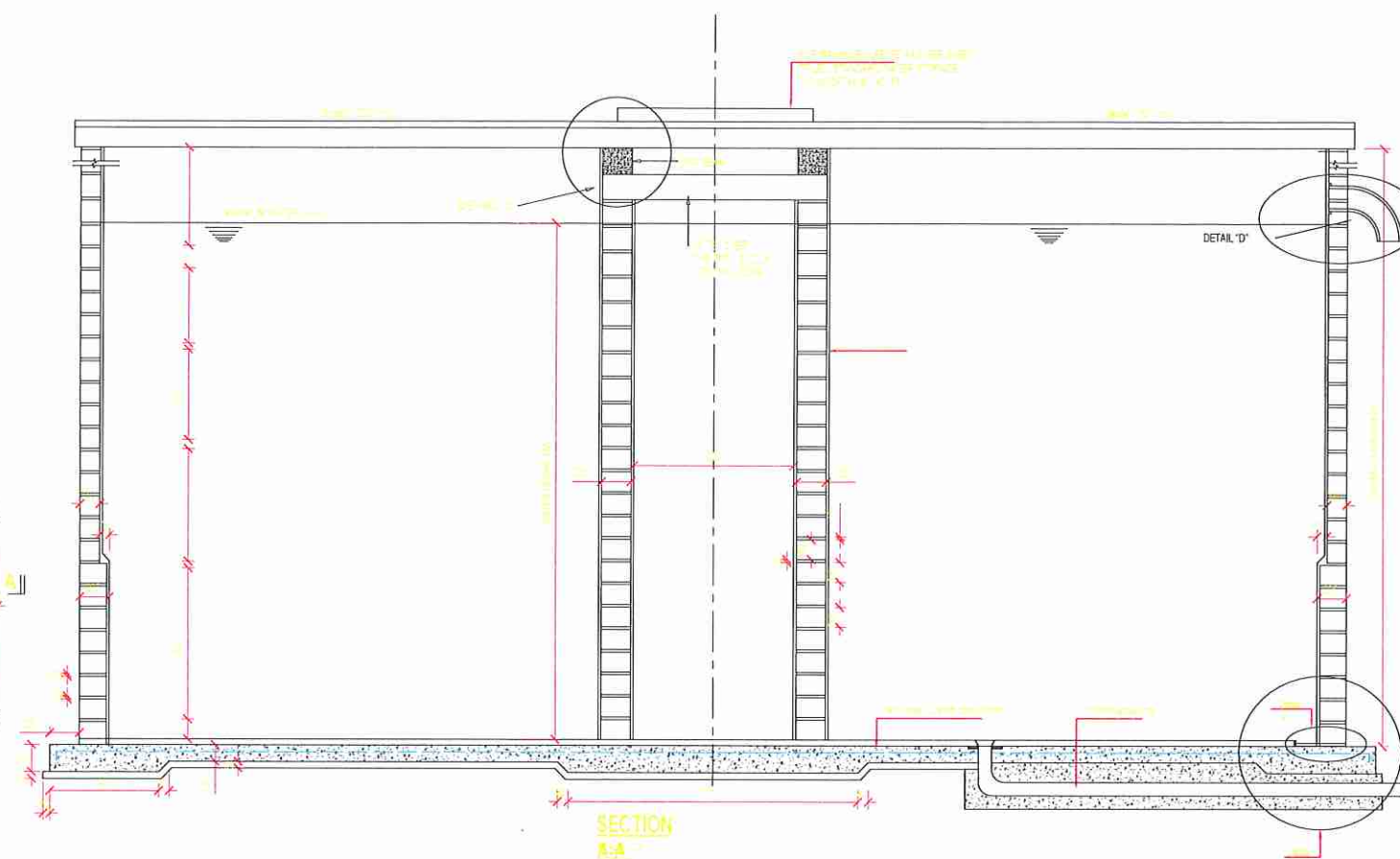
Project title: LOT 2: AUGMENTATION OF MURANGA COMMUNITY WATER SUPPLY PROJECT
 CONTRACT NO: AWWDA/GOK/M/W-03/2023-LOT 2

Drawing Title: 50m³ WATER STORAGE TANK.
 WATER TANK CONNECTION
 DETAILS

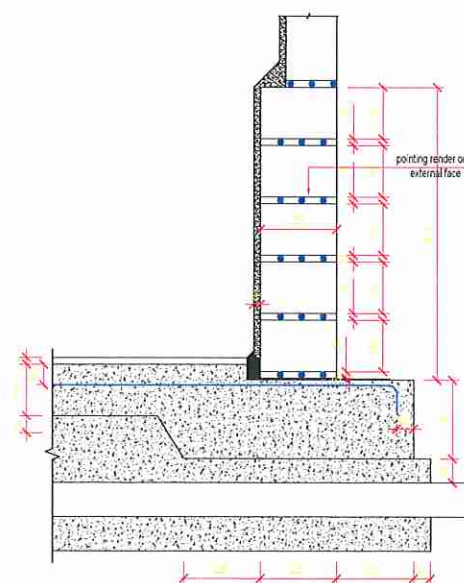
Designed by PMK	Drawn by PMK
Checked by DKR	Approved by DKR
Scale 1: 25, 1:50	Date
Job No.	Sheet: 3 of 3

DRAWING No. AWWDA/GOK/M/W-03/2023 - 2

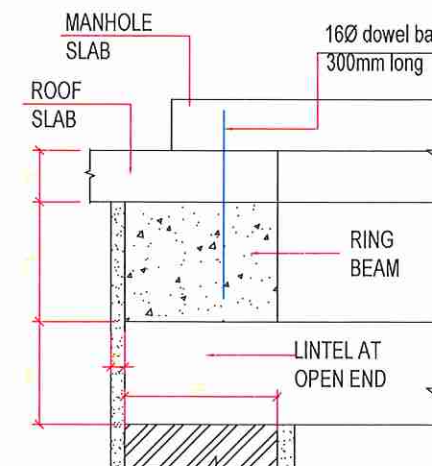
REV



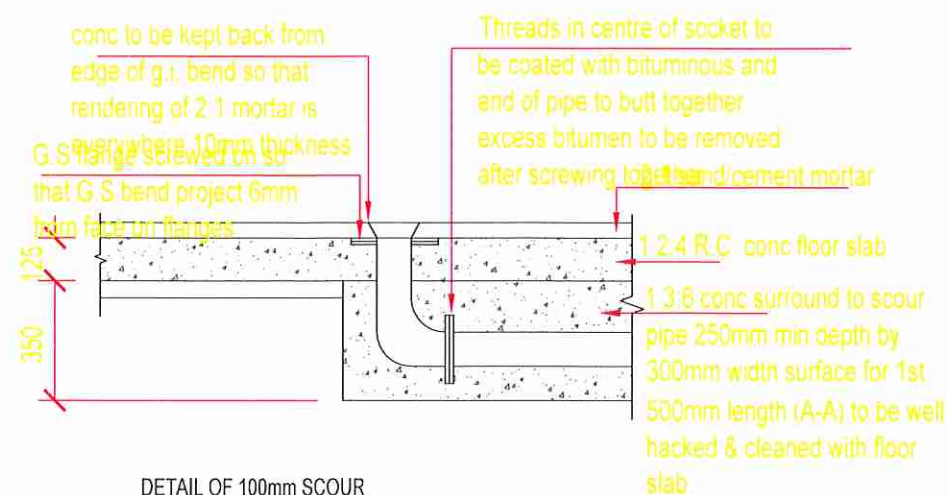
DETAIL A
SCALE 1:5



DETAIL "B" AT WALL BASE
SCALE 1:10



DETAIL C
SCALE 1:10



DETAIL OF 100mm SCOUR
PIPE¹⁰

REV	REVISIONS	DATE	ISSN	APPD
4	BY			
	CHECKED			
3	BY			
	CHECKED			
2	BY			
	CHECKED			
1	DRAFT DETAILED DESIGN AND TENDER DOCUMENTS	BY		
	CHECKED			

CLIENT / EMPLOYER:

 CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
P.O BOX 45283 – 00100 NAIROBI
TEL: 020 – 2727438 FAX: 2724295

PROJECT MANAGER: CHIEF MANAGER – WATER WORKS
ATHI WATER WORKS DEVT AGENCY

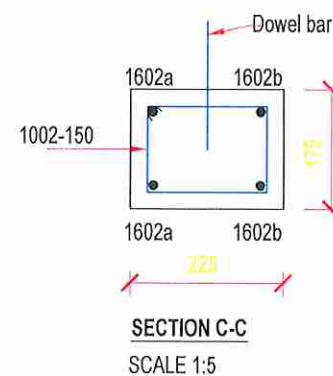
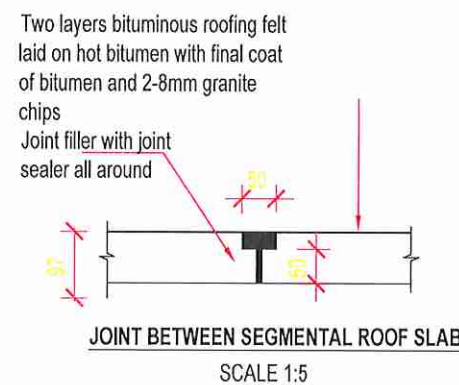
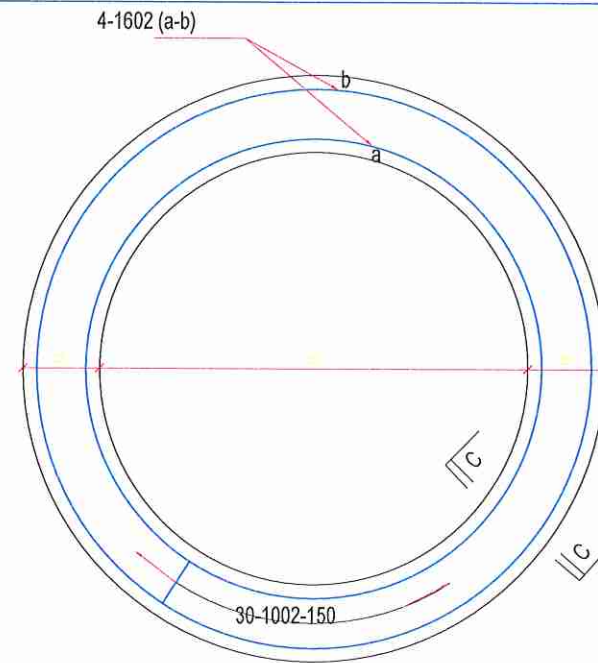
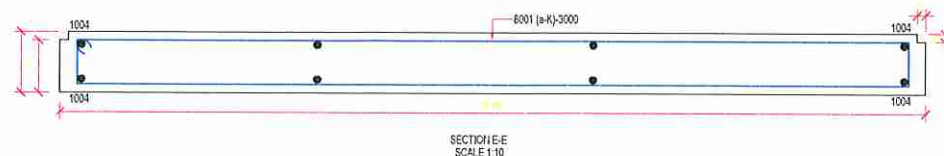
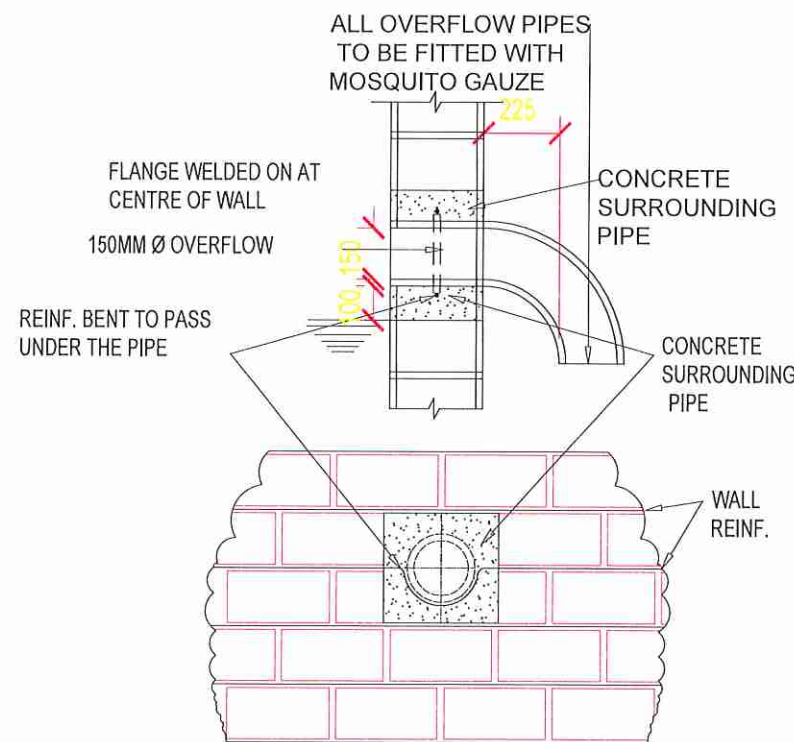
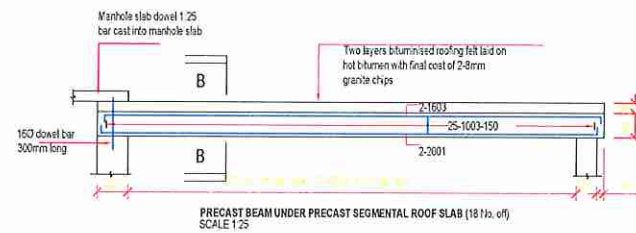
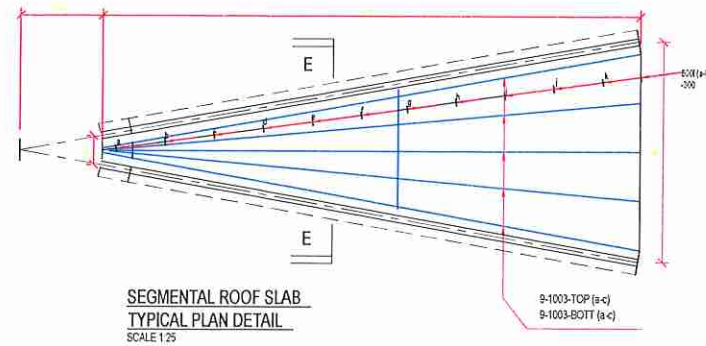
 P.O BOX 45283 – 00100 NAIROBI
TEL: 020 – 2727438 FAX: 2724295

LOT 2: AUGMENTATION OF MURANG'A
COMMUNITY WATER SUPPLY PROJECT

CONTRACT NO.: AWWDA/GOK/M/W-03/2023-LOT 2

Drawing Title
100 CUBIC METER MASONRY TANK
CIVIL DETAILS

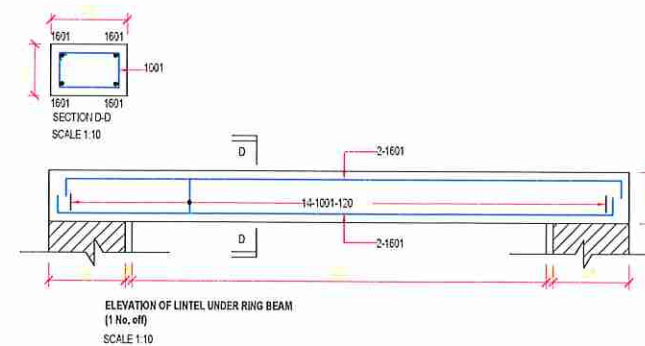
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Scale 1:10.25		Date MAY 2023	
JOB NO.	---	Sheet: 1 of 2	
STAT	DRAWING NO: AWWA-GOK-MW-03-2023 - 3		



CAPACITY	TANK DIMENSIONS									
	DIA. D	O/A TANK HT H (MIN)	WATER HW	L	W	B	T	No.	WEIGHT	
100 m³ (22000 GALLONS)	7.00m (R=4.3m)	3.500m	4.500m	3.090m	1.305m	215mm	75mm	18	423Kg	

BAR BENDING SCHEDULE					
TANK DIAMETER 8.600m					
LOCATION	Bar Mark	DIA.	NO.	LENGTH	SHAPE (BS1478)
LINTEL UNDER RING BEAM	1601	16Ø	4	1.810	[75] 1,660 [75]
RING BEAM	1601	10Ø	14	0.650	[75] 100 INT. DIM.
	1602a	16Ø	2	4.770	R=0.6550
	1602b	"	2	5.880	R=0.830
ROOF UNITS					[50] x [50]
	1003a	10Ø	216	3.150	x=3.050
	b	"	72	3.080	x=2.980
	c	"	36	3.000	x=2.900
	8001	8Ø			[x] 50 INT. DIM.
	8001a	8Ø	18	0.570	xa=0.145
	b	"	"	0.780	xb=0.250
	c	"	"	0.990	xc=0.355
	d	"	"	1.200	xd=0.460
	e	"	"	1.410	xe=0.565
	f	"	"	1.620	xf=0.675
	g	"	"	1.830	xg=0.775
	h	"	"	2.040	xh=0.880
	i	"	"	2.250	xi=0.985
	j	"	"	2.460	xj=1.090
	k	"	"	2.670	xk=1.195
MASONRY WALL RING BEAM	"z"	10Ø			Raverage 4.500
	1002	10Ø	31	0.750	[200] 125 INT. DIM.

TANK BASE SLAB BAR BENDING SCHEDULE				
TANK DIAMETER 8.600m				
Bar Mark	DIA.	NO.	LENGTH	SHAPE (BS 1478)
				[75] x [75]
a	8	6	7.82m	x=7.67m
b	8	4	7.80m	x=7.65m
c	8	4	7.76m	x=7.61m
d	8	4	7.72m	x=7.58m
e	8	4	7.67m	x=7.52m
f	8	4	7.61m	x=7.46m
g	8	4	7.54m	x=7.38m
h	8	4	7.44m	x=7.29m
i	8	4	7.32m	x=7.18m
j	8	4	7.20m	x=7.07m
k	8	4	7.08m	x=6.93m
l	8	4	6.92m	x=6.78m
m	8	4	6.78m	x=6.63m
n	8	4	6.57m	x=6.42m
o	8	4	6.37m	x=6.22m
p	8	4	6.14m	x=5.99m
q	8	4	5.88m	x=5.73m
r	8	4	5.62m	x=5.46m
s	8	4	5.29m	x=5.14m
t	8	4	4.94m	x=4.79m
u	8	4	4.53m	x=4.38m
v	8	4	4.07m	x=3.92m
w	8	4	3.51m	x=3.36m
x	8	4	2.82m	x=2.67m
y	8	4	1.75m	x=1.60m



REV	REVISIONS	NO.	DATE	APPROVED
4	BY			
3	CHECKED			
2	BY			
1	CHECKED			
1	DRAFT DETAILED DESIGN AND TENDER DOCUMENTS	BY		
CLIENT / EMPLOYER:				
CHIEF EXECUTIVE OFFICER ATHI WATER WORKS DEVELOPMENT AGENCY P.O. BOX 45283 - 00100 NAIROBI TEL: 020 - 2727438 FAX: 2724295				
PROJECT MANAGER:				
CHIEF MANAGER - WATER WORKS ATHI WATER WORKS DEVT AGENCY P.O. BOX 45283 - 00100 NAIROBI TEL: 020 - 2727438 FAX: 2724295				
LOT 2: AUGMENTATION OF MURANG'A COMMUNITY WATER SUPPLY PROJECT				
CONTRACT NO.: AWWDA/GOK/M/W-03/2023-LOT 2				
Drawing Title 100 CUBIC METER MASONRY TANK CIVIL DETAILS				
Designed by	PMK	Drawn by	PMK	
Checked by	DKR	Approved by	DKR	
Scale	1:10/25	Date	MAY 2023	
JOB NO.	—	Sheet	2 of 2	
STAT.	DRAWING NO: AWWDA/GOK/M/W-03/2023-3			