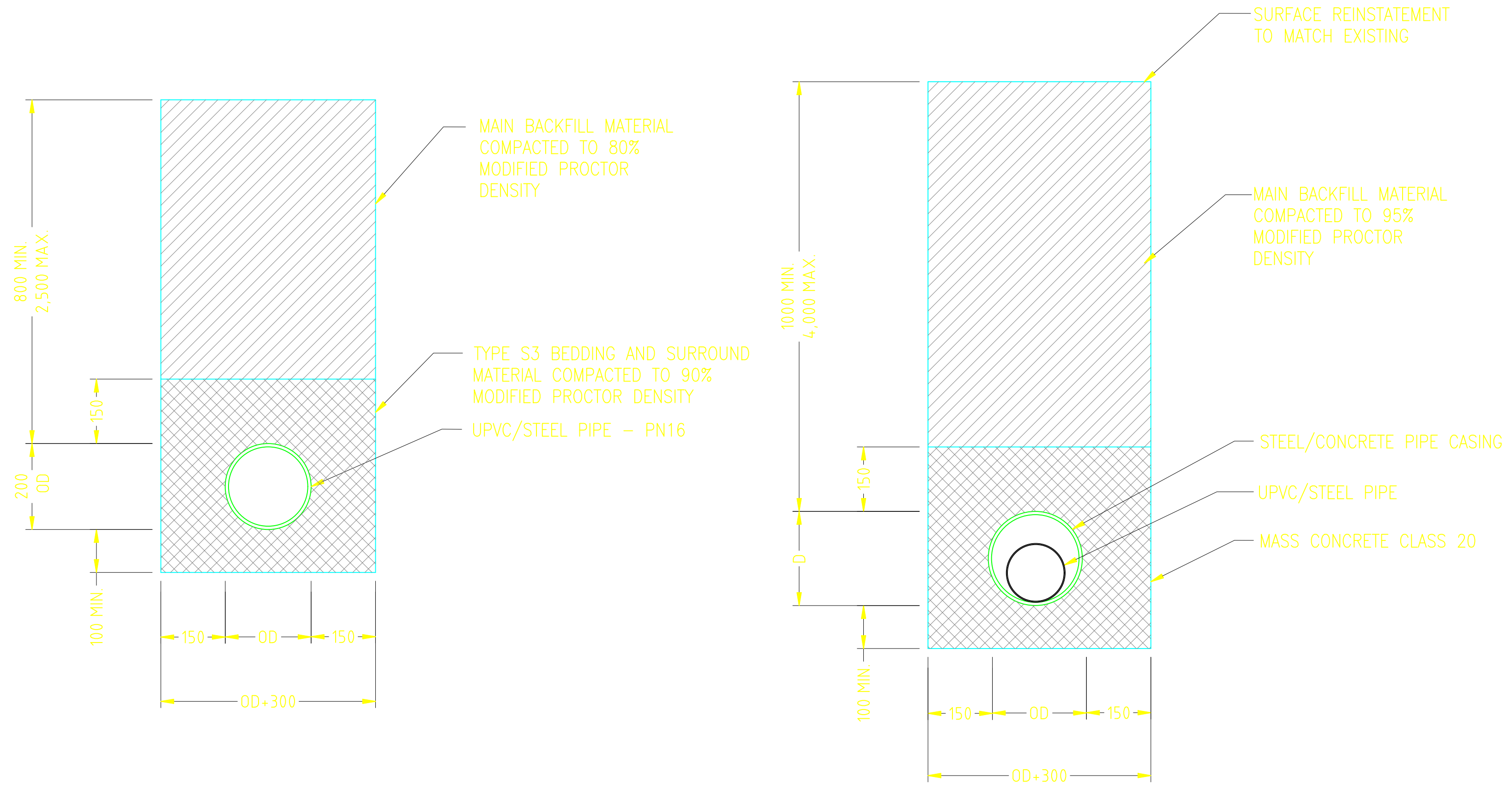
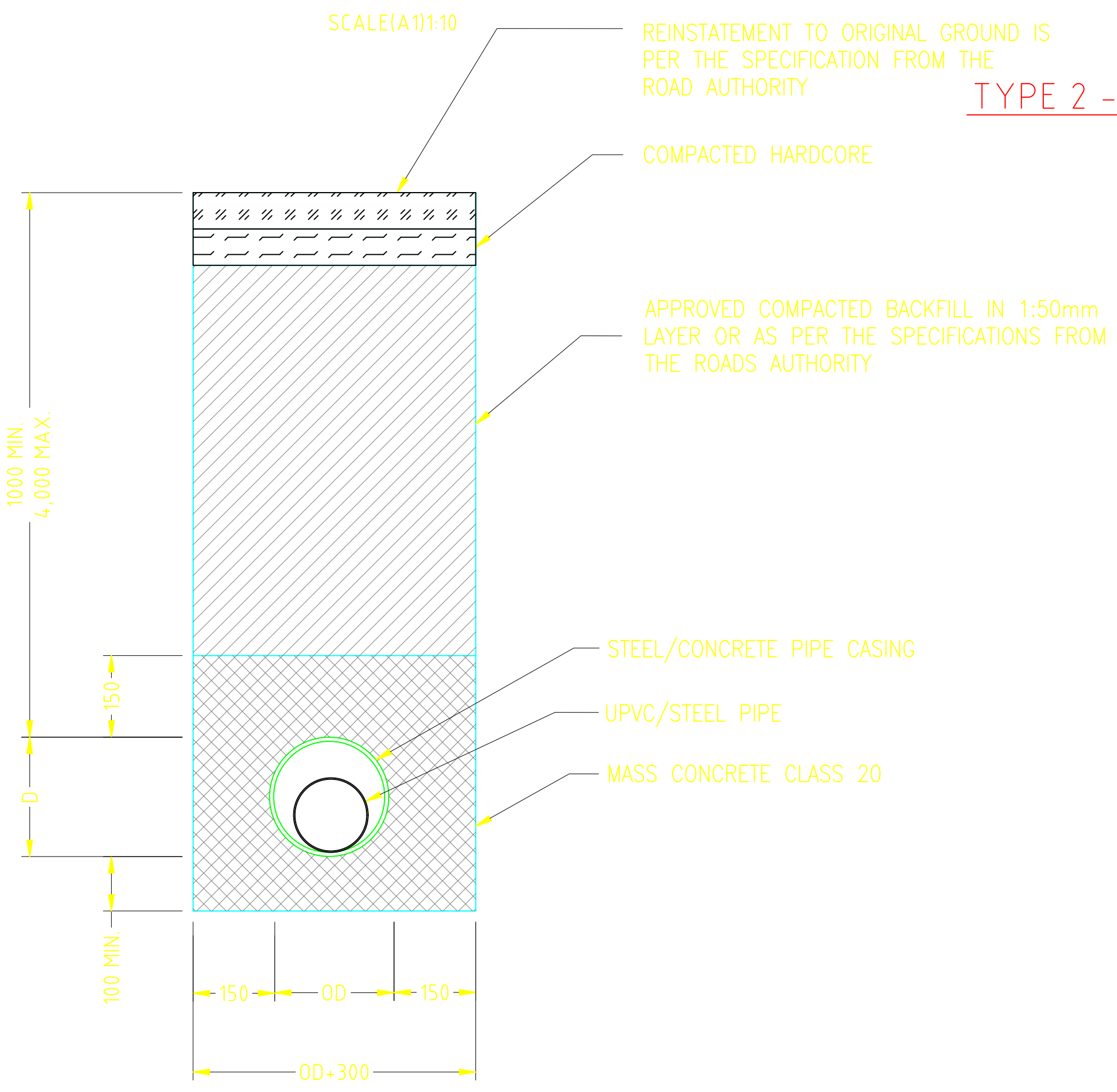




TYPE 1 - PIPE ACROSS OPEN GROUND

TYPE 2 - PIPE ACROSS EARTH AND GRAVEL ROADS



TYPE 3 - PIPE ACROSS TARMAC ROAD

NOTES

1. TYPE S1 BEDDING AND SURROUND TO BE SINGLE SIZED GRANULAR MATERIAL.
2. TYPE S2 BEDDING AND SURROUND TO BE GRADED GRANULAR MATERIAL.
3. TYPE S3 BEDDING AND SURROUND TO BE SAND AND COARSE GRAINED SOIL WITH LESS THAN 12% FINES.
4. THE MINIMUM WIDTH OF PIPE TRENCH SHALL BE AS INDICATED ON THE DRAWING. THIS DIMENSION WILL BE USED FOR MEASUREMENT OF THE WORK AND NO SEPARATE MEASUREMENT WILL BE TAKEN OR ALLOWED FOR OVERBREAK.
5. THE CONTRACTOR SHALL ADVISE THE ENGINEER WHENEVER TRENCH INVERTS HAVE BEEN EXCAVATED AND TRIMMED AND ARE READY FOR INSPECTION. NO TRENCH INVERT SHALL BE COVERED WITH BEDDING MATERIAL OR PIPES LAID UNTIL THE INSPECTION HAS BEEN CARRIED OUT AND THE TRENCH INVERT APPROVED.
6. FOR EARTH ROADS CROSSINGS THE ENGINEER SHALL DETERMINE WHETHER TO CLASSIFY IT AS TYPE 1 OR TYPE 2 DEPENDING ON THE TRAFFIC SIZE.

General Notes

NOTES:

1. CONTOUR LEVELS ARE IN METERS AT TWO METER INTERVALS
2. GRID VALUES ARE IN METERS AT 200 METER INTERVALS
3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
4. FOR FITTING DETAILS SEE DRG. NO. BRT/GM005

LEGEND:

- ROAD (TARMAC)
- ROAD / TRACK (EARTH / MURRAM)
- FENCE / HEDGE
- CONTOURS
- ELECTRIC POST
- CULVERT
- GATE
- TEMPORARY STRUCTURES
- BUILDINGS
- KenHA / KeRRA ROAD BEACON
- PROPOSED TREATED WATER GRAVITY MAIN
- TP10 TRAVERSE POINT & No.
- TRIAL HOLE
- HORIZONTAL BEND (H) OR VERTICAL BEND (V) WITH ANGLE INDICATED
- RIVER/STREAM
- V.J. VIKING JOHNSON
- GV GATE VALVE
- SV-01 SECTIONAL VALVE & No.
- WO-01 WASHOUT VALVE & No.
- LAV-01 AIR VALVE & No.
- WM WATER METER
- PROPOSED MASONRY CHAMBER
- DIRECTION (SLOPE MIN. OR 1 IN n)

ISSUED FOR CONSTRUCTION				
REVISIONS		SIGN	DATE	APPROVED
D	INVERTS AT ROAD CROSSING	BY	VSK	15/01
		CHECKED		
		BY		
		CHECKED		
		BY		
		CHECKED		
		BY		
		CHECKED		

CLIENT: **THE CHIEF EXECUTIVE OFFICER
TANA WATER WORKS
DEVELOPMENT AGENCY**
P.O BOX 1292 - 10100,
NYERI, KENYA

ENGINEERS: **MANAGING DIRECTOR
NYERI WATER AND SANITATION COMPANY**
P.O BOX 1520 - 10100,
NYERI, KENYA

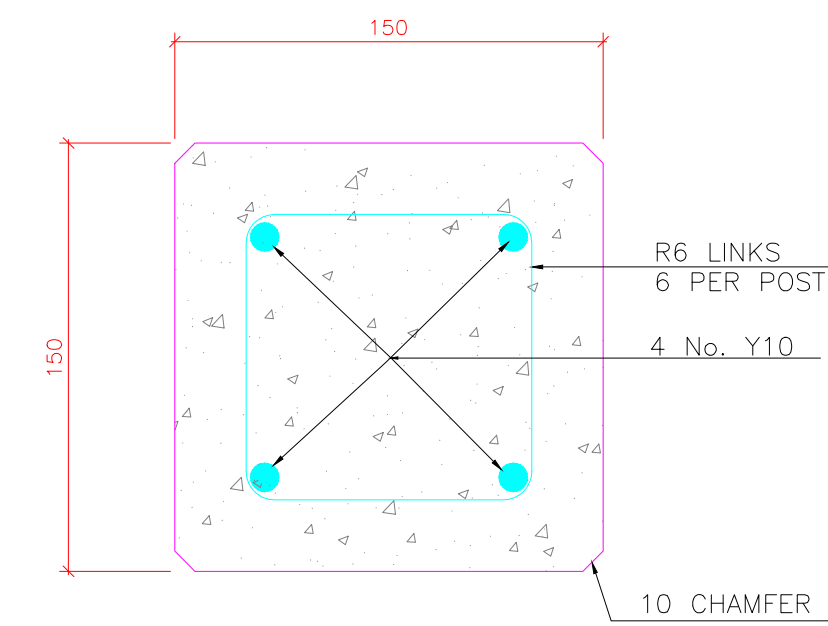
**THE CHIEF EXECUTIVE OFFICER
TANA WATER WORKS DEVELOPMENT
AGENCY**
P.O BOX 1292 - 10100,
NYERI, KENYA

PROJECT TITLE:		
No.	Revision/Issue	Date
CONTRACT No.		

Firm Name and Address
**MAJI HOUSE, ALONG BADEN
POWELL ROAD
P.O. BOX, 1292 -10100.
Nyeri, Kenya
+254 724 259 891,+254 61
2034118
+254 61-2032282
Email: info@tanawwda.go.ke
Website: www.tanawwda.go.ke**

Project Name and Address
**TYPE
OF
ROAD
CROSSING**

Project	Sheet
WATER PROJECT	
Date 14.04.2022	
Scale 1:1000	



BAR BENDING SCHEDULE

BAR	Nb. OFF	TYPE	LENGTH
Y10	4	STRAIGHT	1000
R6	6		500
			

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- ### NOTES:
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- ### LEGEND:
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- ROAD / TRACK (EARTH / MURRAM)
- FENCE / HEDGE
- 1480
- CONTOURS
- ELECTRIC POST
-
- CULVERT
-
- GATE
-
- TEMPORARY STRUCTURES
-
- BUILDINGS
-
- KeNHA / KeRRA ROAD BEACON
-
- PROPOSED TREATED WATER GRAVITY MAIN
- TP10
- TRAVERSE POINT & No.
-
- TRIAL HOLE
- 30°
- HORIZONTAL BEND (H) OR VERTICAL BEND (V) WITH ANGLE INDICATED
-
- RIVER/STREAM
- V.J.
- VIKING JOHNSON
- GV
- GATE VALVE
- SV-01
- SECTIONAL VALVE & No.
- WO-01
- WASHOUT VALVE & No.
- LA-01
- AIR VALVE & No.
- WM
- WATER METER
-
- PROPOSED MASONRY CHAMBER
-
- DIRECTION (SLOPE MIN. OR 1 IN 1 n)

REVISIONS				SIGN	DATE	APPROVED
D	INVERTS AT ROAD CROSSING	BY	VGK	15/01		
		CHECKED				
		BY				
		CHECKED				
		BY				
		CHECKED				
		BY				
		CHECKED				

CLIENT: **THE CHIEF EXECUTIVE OFFICER
TANA WATER WORKS
DEVELOPMENT AGENCY**
P.O BOX 1292 - 10100,
NYERI, KENYA

ENGINEERS: **MANAGING DIRECTOR**
NYERI WATER AND SANITATION COMPANY
P.O BOX 1520 - 10100,
NYERI, KENYA

**THE CHIEF EXECUTIVE OFFICER
TANA WATER WORKS DEVELOPMENT
AGENCY
P.O BOX 1292 - 10100,
NYERI, KENYA**

PROJECT TITLE:	
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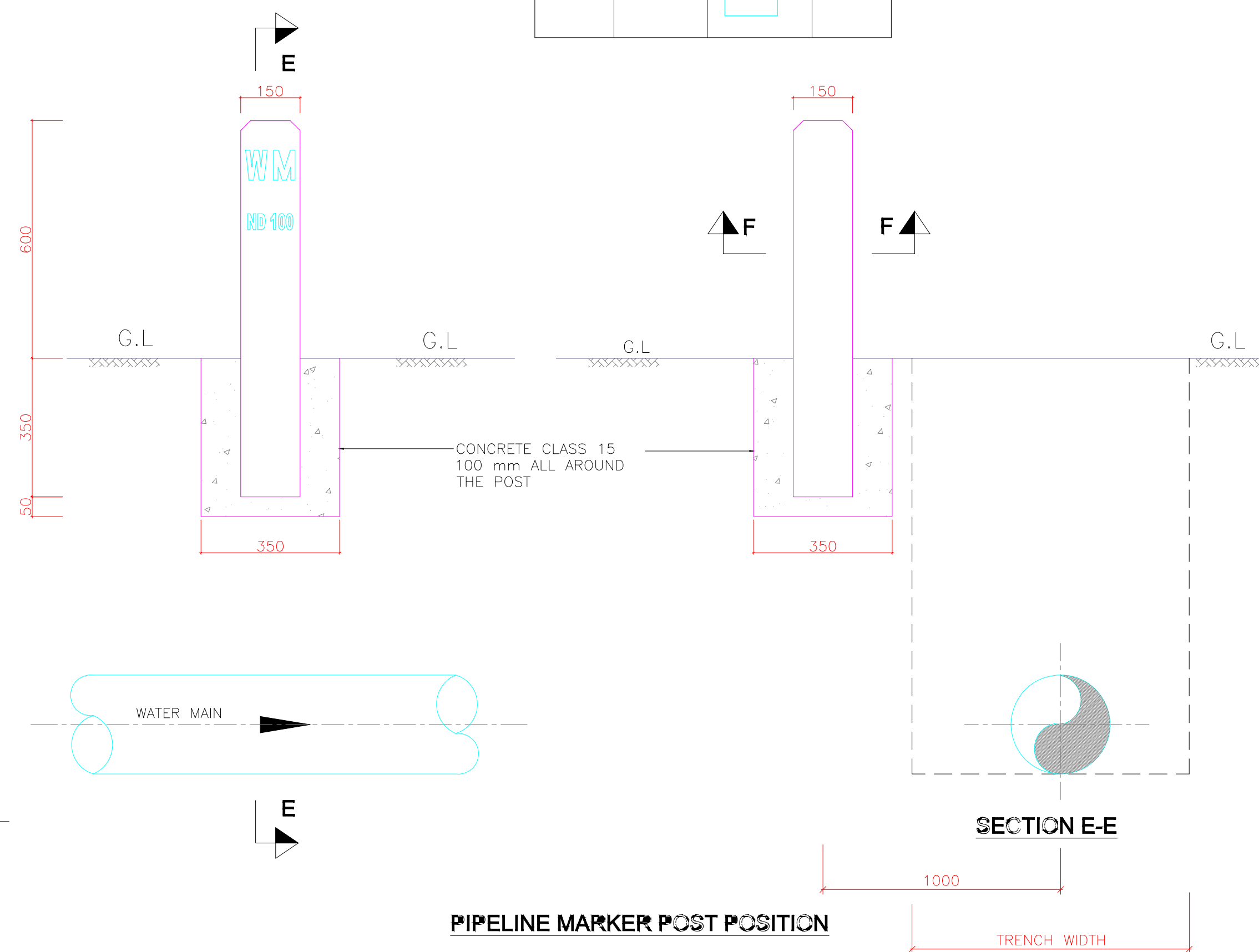
PROJECT TITLE:		
No.	Revision/Issue CONTRACT No.	Date

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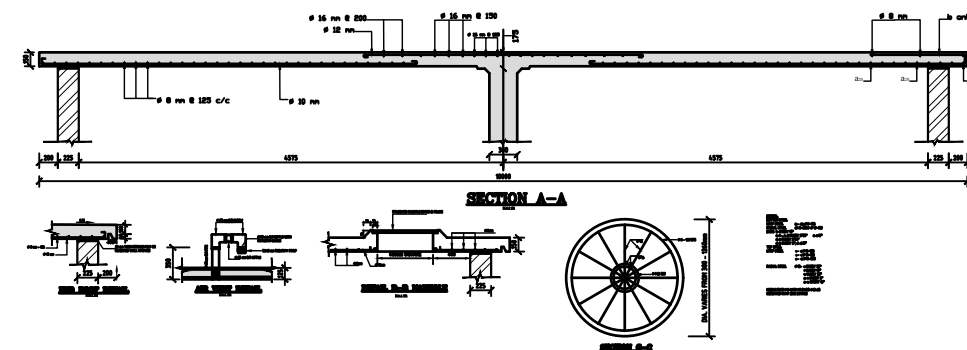
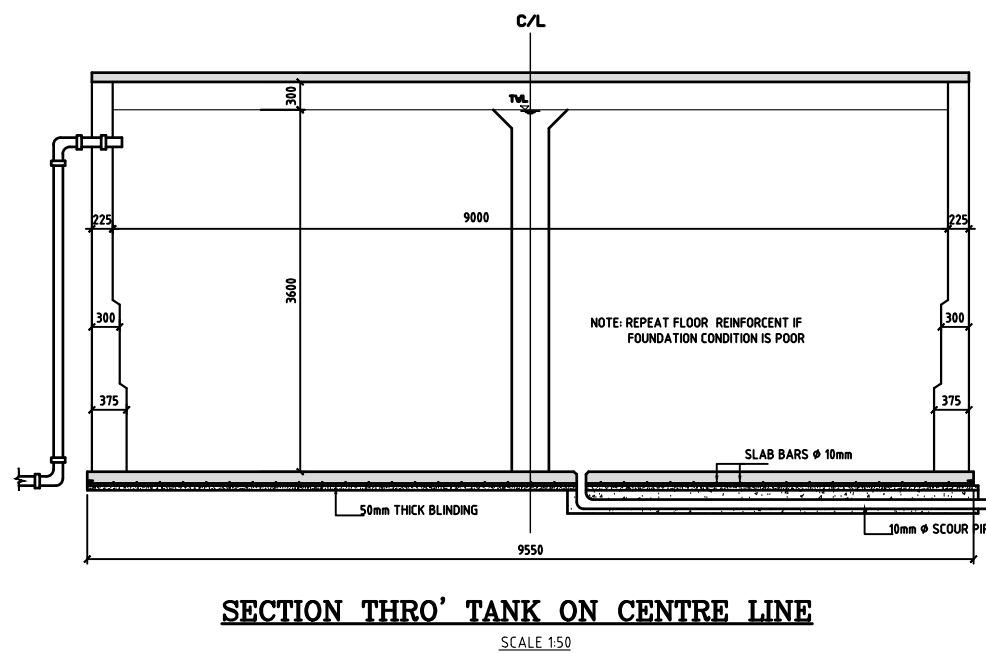
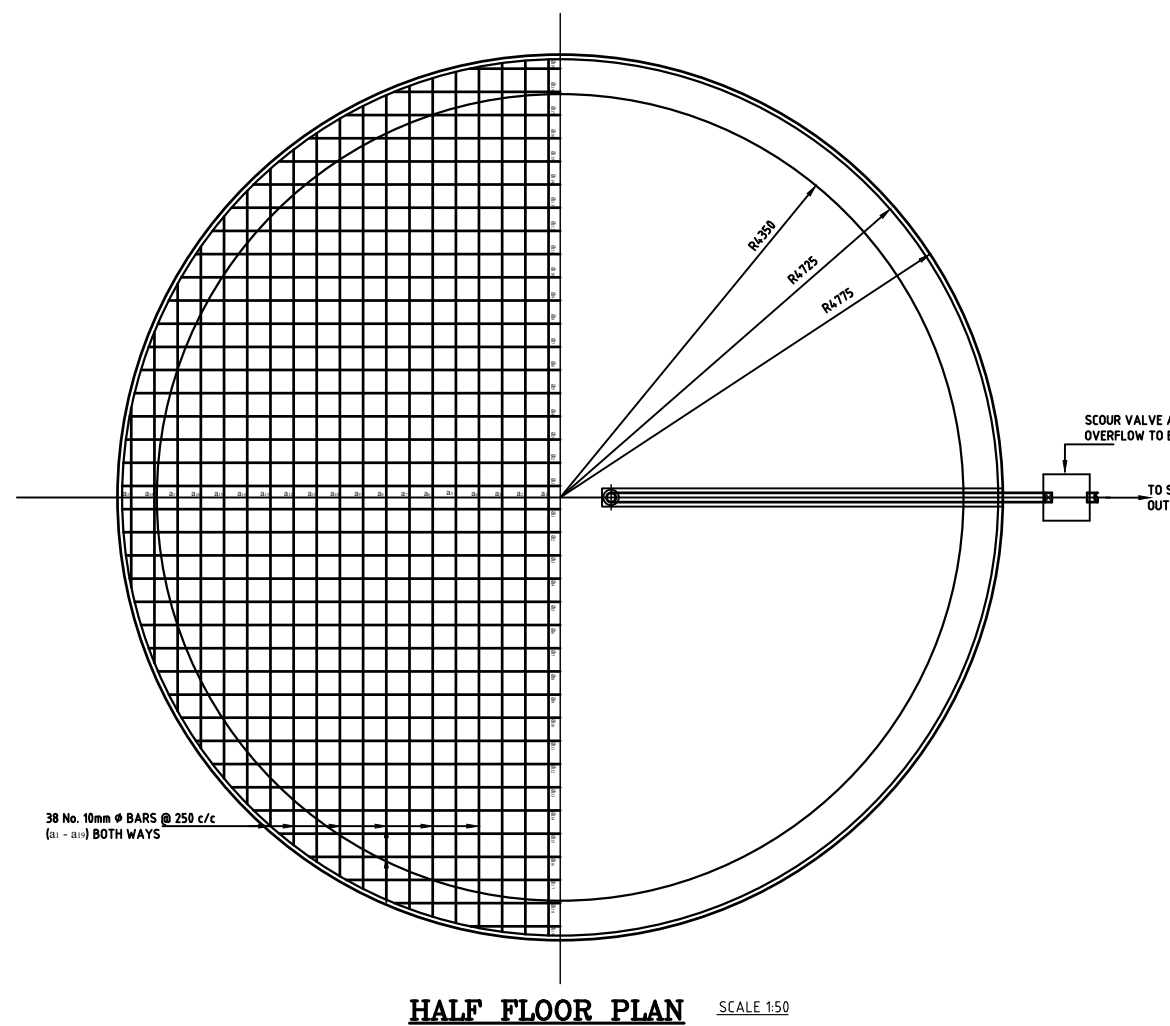
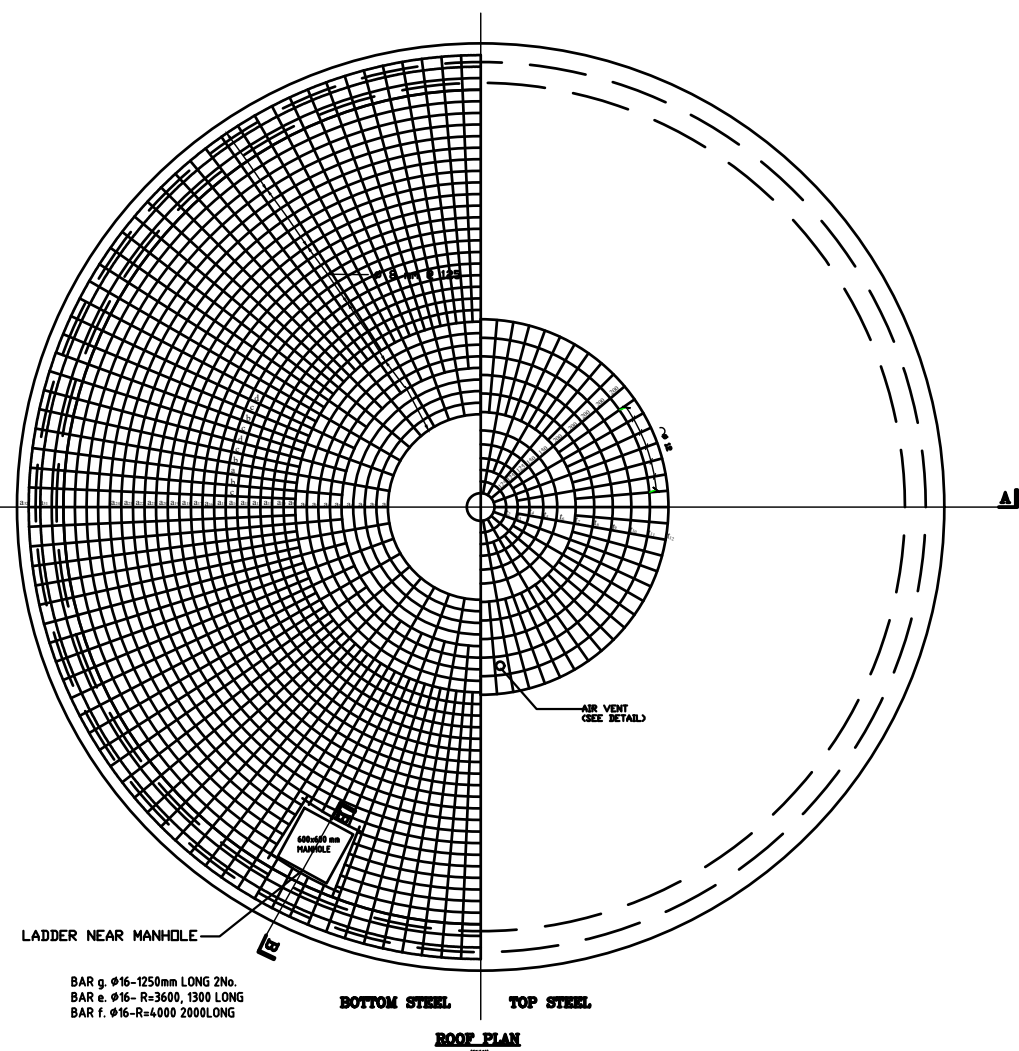
Project Name and Address

TYPE
OF
MARKER
POST

Project	Sheet
WATER PROJECT	
Date	
14.04.2022	
Scale	
1:1000	



MARKER POST DETAILS



- General Notes
- NOTES:**
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ISSUED FOR CONSTRUCTION				
REVISIONS	BY	DATE	APPROVED	
D	CHECKED	15/01		
	BY			
	CHECKED			
	BY			
	CHECKED			
	BY			
	CHECKED			

CLIENT: **THE CHIEF EXECUTIVE OFFICER
TANA WATER WORKS
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P.O BOX 1292 - 10100,
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ENGINEERS: **MANAGING DIRECTOR
NYERI WATER AND SANITATION COMPANY**
P.O BOX 1520 - 10100,
NYERI, KENYA

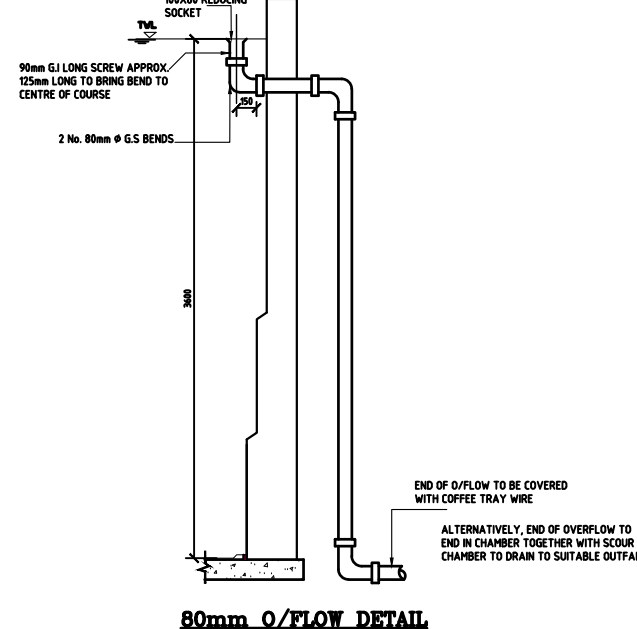
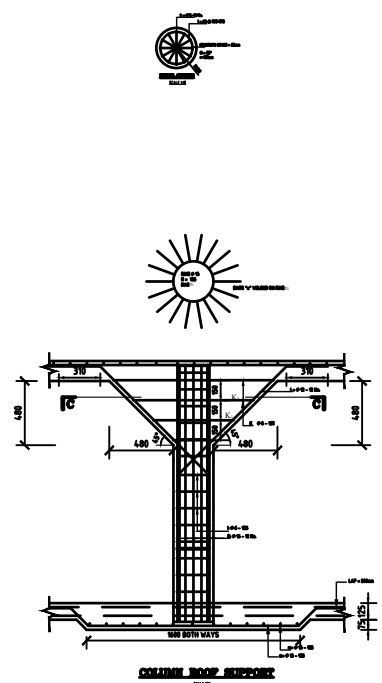
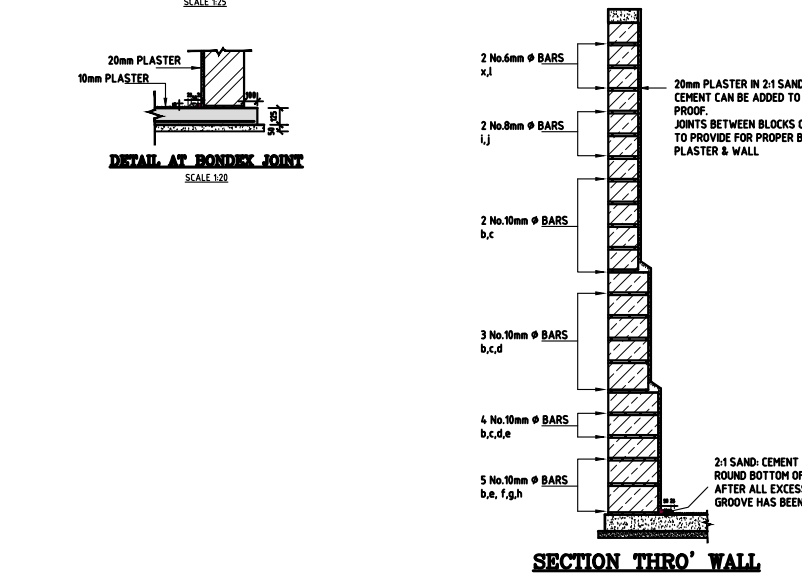
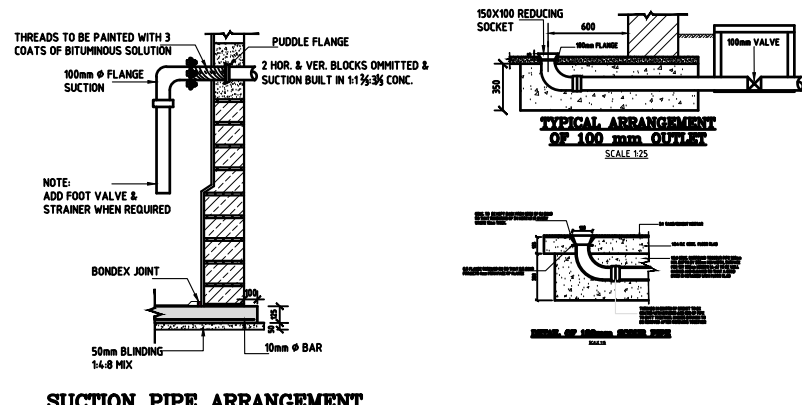
**THE CHIEF EXECUTIVE OFFICER
TANA WATER WORKS DEVELOPMENT
AGENCY**
P.O BOX 1292 - 10100,
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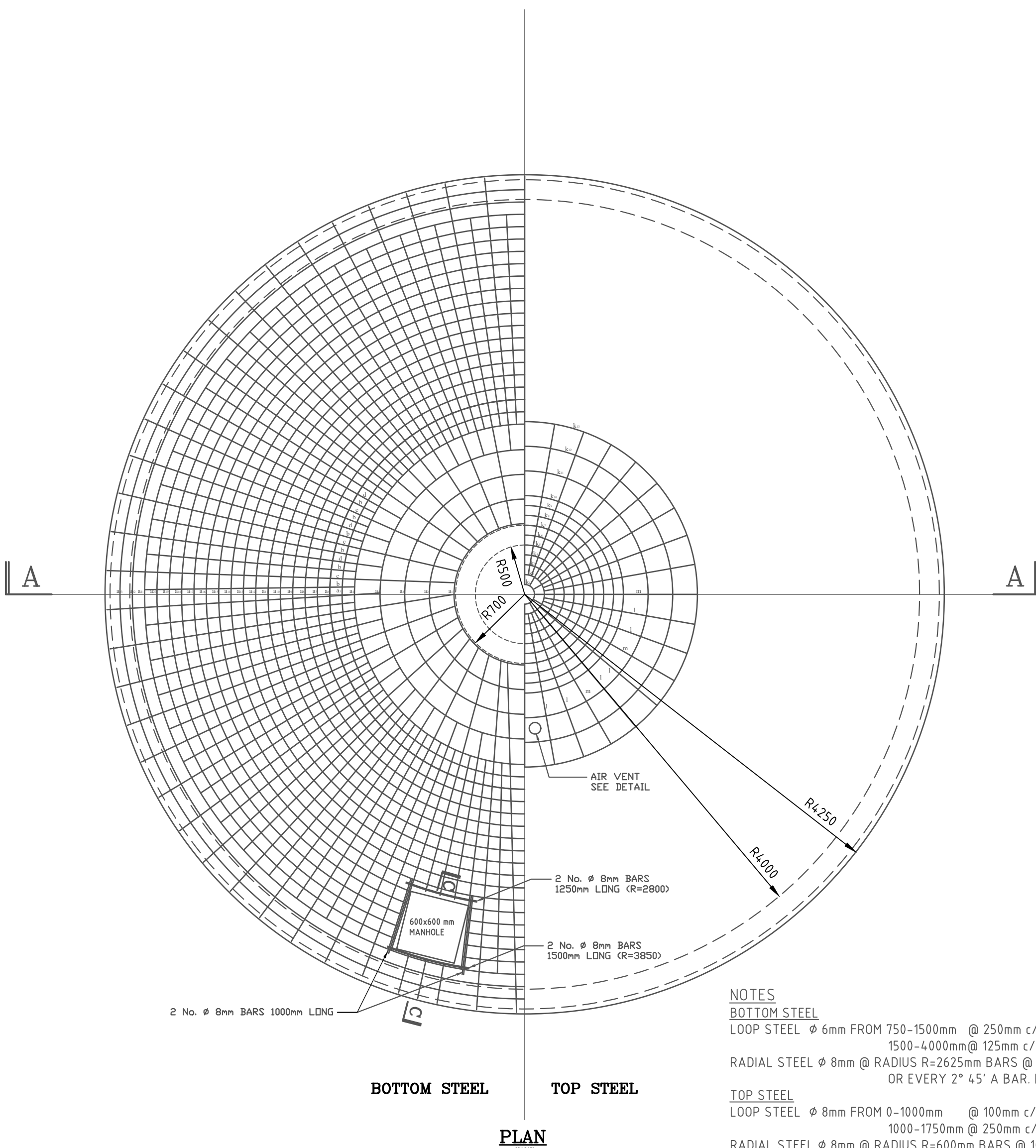
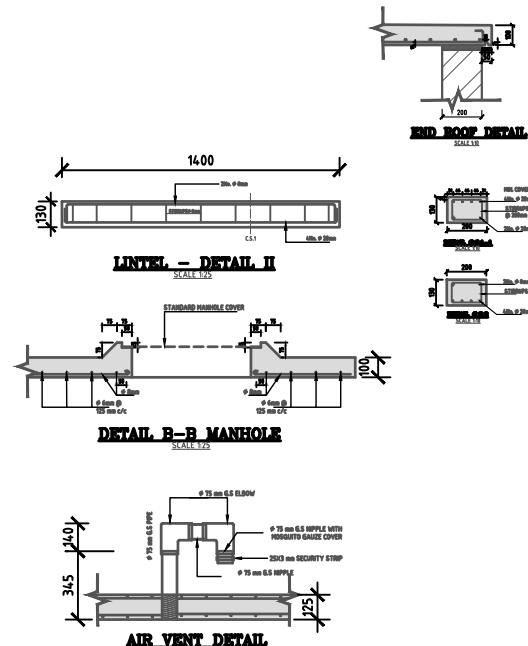
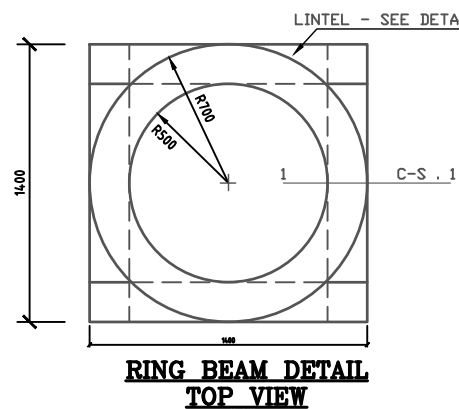
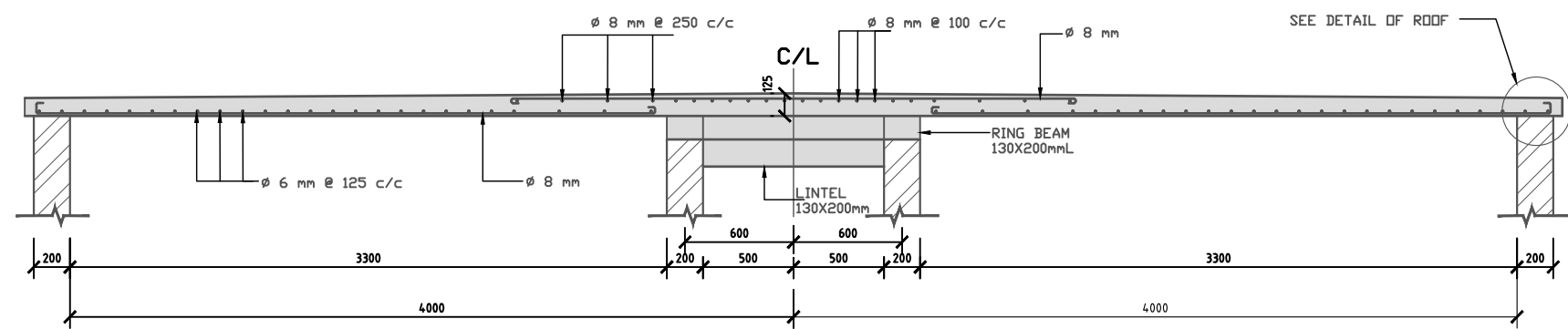
Project Name and Address
**225M³
OF
MASONRY
TANK**

Project	Sheet
WATER PROJECT	
Date	
14.04.2022	
Scale	
1:1000	



BAR BENDING SCHEDULE									
DESTINATION	BAR MARK	TOTAL No.	BAR DIA. mm	BAR LENGTH PER BAR MARK (mm)	BAR DIA. mm	BAR LENGTH PER BAR MARK (mm)	BAR DIA. mm	BAR LENGTH PER BAR MARK (mm)	BAR DIA. mm
BOTTOM RADIAL	b	57	12	5000	102,500	102,500	102,500	102,500	102,500
	c	60	10	3400	204,000	204,000	204,000	204,000	204,000
	d	72	10	2000	144,000	144,000	144,000	144,000	144,000
TOP RADIAL	u	18	10	1900	34,200	34,200	34,200	34,200	34,200
	v	36	10	1900	68,400	68,400	68,400	68,400	68,400
	w	18	10	1700	30,600	30,600	30,600	30,600	30,600
BOTTOM LOOP	h	32	8	6,283	201,056	201,056	201,056	201,056	201,056
	ah	32	8	7,059	225,888	225,888	225,888	225,888	225,888
TOP LOOP	i	12	10	785	9,420	9,420	9,420	9,420	9,420
	ih	12	10	12,567	150,804	150,804	150,804	150,804	150,804
AT MANHOLE	e	1	8	1700	1,700	1,700	1,700	1,700	1,700
	f	1	8	2000	2,000	2,000	2,000	2,000	2,000
	g	2	10	2000	4,000	4,000	4,000	4,000	4,000
COLUMN	b	12	10	4,450	53,400	53,400	53,400	53,400	53,400
	c	1	10	800	8,000	8,000	8,000	8,000	8,000
COLUMN TOP	k	3	6	2000	12,000	12,000	12,000	12,000	12,000
	l	12	12	1700	204,000	204,000	204,000	204,000	204,000
COLUMN BOTTOM	m	26	10	2350	61,060	61,060	61,060	61,060	61,060
TOTAL LENGTH				220985.60	571,480	571,480	571,480	571,480	571,480
TOTAL WEIGHT				50kg (27kg, 23kg)	159kg	159kg	159kg	159kg	159kg
					(IN METERS)				
					200,000	200,000	200,000	200,000	200,000

COMPONENT	No.	BAR MARK	BAR DIA.	BAR LENGTH	BENDING	REMARKS
FLOOR SLAB	1	a	12	2250	STRAIGHT	
		ah	12	2750		
		ai	12	1750		
		aj	12	1750		
		ak	12	1750		
		al	12	1750		
		am	12	1750		
		an	12	1750		
		ao	12	1750		
		ap	12	1750		
		aq	12	1750		
		ar	12	1750		
		as	12	1750		
		at	12	1750		
WALL	1	b	10	100	BENT TO INV. GRADE OF 4448 2 LENGTHS 1100 LENGTH 6000	CIRCUMFERENTIAL BARS
		c	10	10550		
		d	10	10550		
		e	9	29975		
		f	10	10675		
		g	10	29975		
		h	9	29975		
		i	9	29975		
		j	9	29975		
		k	9	29975		
		l	9	29975		
		m	9	29975		
		n	9	29975		
		o	9	29975		



NOTES
BOTTOM STEEL
LOOP STEEL ϕ 6mm FROM 750-1500mm @ 250mm c/c BARS a1-a4
1500-4000mm @ 125mm c/c BARS a4-a24
RADIAL STEEL ϕ 8mm @ RADIUS R=2625mm BARS @ 125mm c/c
OR EVERY 2° 45' A BAR. BARS b,c,d
TOP STEEL
LOOP STEEL ϕ 8mm FROM 0-1000mm @ 100mm c/c BARS k1-k9
1000-1750mm @ 250mm c/c BARS k9-k39
RADIAL STEEL ϕ 8mm @ RADIUS R=600mm BARS @ 100mm c/c
OR EVERY 10° A BAR. BARS l,m.

BAR BENDING SCHEDULE									
POSITION	BAR MARK	TOTAL No.	BAR DIA. mm	LENGTH PER BAR (m)	TOTAL LENGTH PER ϕ (m)			BENDING	REMARKS
					ϕ 6	ϕ 8	ϕ 20		
TOP RADIAL	l	24	8	1.17		28.08			
	m	24	8	1.87		44.88			
BOTTOM RADIAL	b	64	8	2.22		142.08			
	c	32	8	2.92		93.44			
	d	32	8	3.42		105.44			
TOP LOOP	k1	1	8	0.63		62.80 (LAPS)			NOT INCLUDING LAPS 1 LAP ϕ 8mm, STEEL 460mm LONG
	k3	1	8	10.99		6.04			
BOTTOM LOOP	a1	1	6	4.71	381.00 (LAPS)	7.50			1 LAP ϕ 6mm, STEEL 340mm LONG
	a24	1	6	25.12	14.62				
RING BEAM	p	4	20	3.35 - 4.2			15.10		R= 531mm = 577mm = 623mm = 669mm
	q	2	20	3.35 - 4.2		7.55	7.55		
	r	19	8	0.60	14.40	14.40			
LINTEL	s	8	20	1.50			12.00		
	t	4	8	1.35		5.40			
	u	22	6	0.62	13.64				
TOTAL LENGTH					409.26	510.06	34.65		
TOTAL WEIGHT					94	196	60	350	

- General Notes
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- LEGEND:**
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ISSUED FOR CONSTRUCTION			
REV	DESCRIPTION	SIGN	DATE
D	INVERTS AT ROAD CROSSING	BY VSK	15/01
	CHECKED		
	BY		
	CHECKED		
	BY		
	CHECKED		
	BY		
	CHECKED		

CLIENT: **THE CHIEF EXECUTIVE OFFICER
TANA WATER WORKS
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P.O BOX 1292 - 10100,
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ENGINEERS: **MANAGING DIRECTOR
NYERI WATER AND SANITATION COMPANY**
P.O BOX 1520 - 10100,
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Project Name and Address
150M³
OF
MASONRY
TANK

Project WATER PROJECT	Sheet
Date 14.04.2022	
Scale 1:1000	