BAR BENDING SCHEDULE

MARK SIZE MEMBERS EACH No. EACH BAR SHAPE MY8 MY10 MY12 MY16 ELOOR SLAB 1 Y10 1 4 4 6000 6000 24.0 . 3 Y10 1 4 4 5600 23.32 . . 4 Y10 1 4 4 5680 5680 22.72 . . 6 Y10 1 4 4 5230 20.94 . . 7 Y10 1 4 4 4520 4200 19.68 . 10 Y10 1 4 4 44040 4040 16.16 . 11 Y10 1 4 4 4202 4200 10.24 . 13 Y10 1 4 4 2530 2230 . 22.76 14 Y12 1 4 4520	MEMBER	BAR	TYPE &	No. OF	No. IN	TOTAL	LENGTH OF	QUADE	TOTAL	TOTAL	TOTAL	TOTAL
FLOOR SLAB 1 Y10 1 2 C020 6020 12.04		MARK	SIZE	MEMBERS	EACH	No.	EACH BAR	SHAPE	MY8	MY10	MY12	MY16
2 Y10 1 4 4 6000 6000 24.0 3 Y10 1 4 4 5940 5330 2332 5 Y10 1 4 4 5830 52330 2332 6 Y10 1 4 4 5830 5230 20.94 7 Y10 1 4 4 4520 5230 20.94 9 Y10 1 4 4 4520 4920 19.68 10 Y10 1 4 4 4040 4040 16.16 11 Y10 1 4 4 2020 40.8 12 Y10 1 4 4 2020 40.8 14 Y12 1 4 4 5200 220.9 </td <td rowspan="9">FLOOR SLAB</td> <td>1</td> <td>Y10</td> <td>1</td> <td>2</td> <td>2</td> <td>6020</td> <td>6020</td> <td></td> <td>12.04</td> <td></td> <td></td>	FLOOR SLAB	1	Y10	1	2	2	6020	6020		12.04		
3 Y10 1 4 4 5940 5940 23.76 4 Y10 1 4 4 5830 23.32		2	Y10	1	4	4	6000	6000		24.0		
4 Y10 1 4 4 5830 5330 23.32 5 Y10 1 4 4 5680 22.72 6 Y10 1 4 4 5680 22.72 7 Y10 1 4 4 5230 20.94 8 Y10 1 4 4 4200 4920 18.12 10 Y10 1 4 4 4040 4040 16.16 11 Y10 1 4 4 3410 3410 13.64 12 Y10 1 4 4 0200 12.04 13 Y10 1 4 4 0520 23.76 16 Y12 1 4 4 4530 4530 18.12 17 Y12 1 4 4 4300 3410 13.64 20 Y12 1 4 4 1020		3	Y10	1	4	4	5940	5940		23.76		
5 Y10 1 4 4 5680 5217 2 6 Y10 1 4 4 5480 5480 21.92 7 Y10 1 4 4 5230 5230 20.94 9 Y10 1 4 4 4920 4920 19.68 10 Y10 1 4 4 4040 4040 16.16 11 Y10 1 4 4 2560 10.24 13 Y10 1 4 4 6020 6020 23.76 15 Y12 1 4 4 5680 5680 22.72 16 Y12 1 4 4 4530 4530 18.12 18 Y12 1 4 4 4530 4530 18.12 19 Y12 1 4 4 1020		4	Y10	1	4	4	5830	5830		23.32		
6 Y10 1 4 4 5480 5480 21.92 7 Y10 1 4 4 5230 5230 20.94 8 Y10 1 4 4 4520 19.68 19.68 9 Y10 1 4 4 4530 4530 18.12 10.13.64 11 Y10 1 4 4 4040 4040 13.64 12.04 12 Y10 1 4 4 2600 2560 10.24 10.24 13 Y10 1 4 4 5680 5680 22.72 15 Y12 1 2 2 5940 5940 23.76 16 Y12 1 4 4 4530 4530 18.12 17 Y12 1 4 4 4530 4530 18.12 20 Y12 1 4 4 3410		5	Y10	1	4	4	5680	5680		22.72		
7 Y10 1 4 4 5230 5230 20.94 8 Y10 1 4 4 4920 4920 19.68 9 Y10 1 4 4 4530 4530 18.12 10 Y10 1 4 4 4300 3410 13.64 11 Y10 1 4 4 4040 4040 16.61 12 Y10 1 4 4 2660 2560 10.24 13 Y10 1 4 4 6020 6020 12.04 15 Y12 1 4 4 5680 5630 22.72 16 Y12 1 4 4 4530 4530 18.12 18 Y12 1 4 4 4020 1020 4.08 20 Y12 1 12 2.000 2500 30.0 SUMP <td< td=""><td>6</td><td>Y10</td><td>1</td><td>4</td><td>4</td><td>5480</td><td>5480</td><td></td><td>21.92</td><td></td><td></td></td<>		6	Y10	1	4	4	5480	5480		21.92		
8 Y10 1 4 4 4920 4920 19.68 9 Y10 1 4 4 4530 4530 18.12		7	Y10	1	4	4	5230	5230		20.94		
9 Y10 1 4 4 4530 4530 18.12 10 Y10 1 4 4 4040 4040 16.16 11 Y10 1 4 4 3410 3340 13.64 12 Y10 1 4 4 2560 2560 10.24 13 Y10 1 4 4 1020 4.08 23.76 14 Y12 1 2 2 5940 5940 23.76 16 Y12 1 4 4 5630 5680 22.72 17 Y12 1 4 4 4530 4530 18.12 19 Y12 1 4 4 4530 5230 18.12 11 12 12 12 2200 200 4.08 4.08 20 Y12 1 4 4 1020 120 12.0 13.64 23 Y10 1 2 2 3400 18.12 14.08 <td>8</td> <td>Y10</td> <td>1</td> <td>4</td> <td>4</td> <td>4920</td> <td>4920</td> <td></td> <td>19.68</td> <td></td> <td></td>		8	Y10	1	4	4	4920	4920		19.68		
10 Y10 1 4 4 4040 4040 16.16 11 Y10 1 4 4 3410 3410 13.64 12 Y10 1 4 4 2560 2560 10.24 13 Y10 1 4 4 1020 1020 4.08 14 Y12 1 4 4 6020 6020 12.04 15 Y12 1 2 25940 5580 22.72 16 Y12 1 4 4 5630 5680 22.72 17 Y12 1 4 4 4310 3410 13.64 20 Y12 1 4 4 300 3300 30.0 SUMP 22 Y10 1 2 2300 8002 6.8 2 21 Y12 1 12 12.0 12.0 12.1 12.1 <		9	Y10	1	4	4	4530	4530		18.12		
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$		10	Y10	1	4	4	4040	4040		16.16		
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$\begin{array}{c c c c c c c c c c c c c c c c c c c $		14	Y12	1	4	4	6020	6020			12.04	
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17 Y12 1 4 4 5230 5230 20.94 18 Y12 1 4 4 4530 4530 18.12 19 Y12 1 4 4 3410 3410 13.64 20 Y12 1 4 4 1020 1020 4.08 21 Y12 1 12 12 2500 2500 30.0 SUMP 22 Y10 1 5 5 1700 3700 8.5 - 24 Y10 1 4 4 1900 3890 8.5 - 25 Y10 1 4 4 5370 5217 - - WALLS 26 Y8 1 3x40 120 6000 256 720 - - ROOF SLAB 27 Y10 1 8 8 5310 5310 42.48 - 30 </td <td>16</td> <td>Y12</td> <td>1</td> <td>4</td> <td>4</td> <td>5680</td> <td>5680</td> <td></td> <td></td> <td>22.72</td> <td></td>		16	Y12	1	4	4	5680	5680			22.72	
18 Y12 1 4 4 4530 4530 18.12 19 Y12 1 4 4 3410 3410 13.64 20 Y12 1 4 4 1020 4.08 21 Y12 1 12 120 20.00 30.0 SUMP 22 Y10 1 2 3400 900 8.5 10.0 23 Y10 1 5 5 1700 \$100 12.1 12.1 24 Y10 1 4 4 1900 \$100 12.1 WALLS 26 Y8 1 3x40 120 6000 12.8 720 1 ROOF SLAB 27 Y10 1 4 4 5370 5370 21.48 1 30 Y10 1 8 8 5310 42.48 1 1 1 1 1 1 1 1		17	Y12	1	4	4	5230	5230			20.94	
19 Y12 1 4 4 3410 3410 13.64 20 Y12 1 4 4 1020 1020 4.08 21 Y12 1 12 12 2500 30.0 SUMP 22 Y10 1 2 2 3400 990 8.5 - 23 Y10 1 5 5 1700 990 8.5 - 24 Y10 1 4 4 1900 990 7.6 - - 25 Y10 1 10 10 1210 12.1 - - - WALLS 26 Y8 1 3x40 120 6000 - 720 - - ROOF SLAB 27 Y10 1 8 5310 5310 42.48 - 30 Y10 1 8 5450 5240 41.92 -		18	Y12	1	4	4	4530	4530			18.12	
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SUMP 22 Y10 1 2 2 3400 BODE 6.8		21	Y12	1	12	12	2500	2500			30.0	
23 Y10 1 5 5 1700 STODIS 8.5 24 Y10 1 4 4 1900 STODIS 7.6 25 Y10 1 10 10 1210 1210 12.1 WALLS 26 Y8 1 3x40 120 6000 File 7.6 ROOF SLAB 27 Y10 1 4 4 5370 5370 21.48 28 Y10 1 8 8 5360 542.88 30 Y10 1 8 8 5130 5130 41.40 31 Y10 1 8 8 4990 4990 39.92 33 Y10 1 8 8 4810 38.48 34 Y10 1 8 8 4300 32.08 <	SUMP	22	Y10	1	2	2	3400	900 g		6.8		
24 Y10 1 4 4 1900 \$\$\begin{tabular}{		23	Y10	1	5	5	1700	<u> </u>		8.5		
25 Y10 1 10 1210 1210 121 121 WALLS 26 Y8 1 3x40 120 6000 26 720 1 1 ROOF SLAB 27 Y10 1 4 4 5370 5370 21.48 1 1 1 1 1 4 4 5370 21.48 1		24	Y10	1	4	4	1900	<u> </u>		7.6		
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28 Y10 1 8 8 5360 5360 42.88 29 Y10 1 8 8 5310 5310 42.48 30 Y10 1 8 8 5240 5240 41.92 31 Y10 1 8 8 5130 5130 41.40 32 Y10 1 8 8 4990 4990 39.92 33 Y10 1 8 8 4810 38.48 34 Y10 1 8 8 4600 4600 36.80 35 Y10 1 8 8 4330 4330 34.64 36 Y10 1 8 8 3620 3620 28.96 37 Y10 1 8 8 3140 3140 25.12 39	ROOF SLAB	27	Y10	1	4	4	5370	5370		21.48		
29 Y10 1 8 8 5310 5310 42.48 30 Y10 1 8 8 5240 5240 41.92 31 Y10 1 8 8 5130 5130 41.40 32 Y10 1 8 8 4990 4990 39.92 33 Y10 1 8 8 4810 4810 38.48 33 Y10 1 8 8 4600 4600 36.80 34 Y10 1 8 8 4330 4330 34.64 36 Y10 1 8 8 3620 3620 28.96 37 Y10 1 8 8 3140 3140 25.12 39 Y10 1 8 8 1550 12.4 7.8		28	Y10	1	8	8	5360	5360		42.88		
30 Y10 1 8 8 5240 5240 41.92		29	Y10	1	8	8	5310	5310		42.48		
31 Y10 1 8 8 5130 5130 41.40 32 Y10 1 8 8 4990 39.92		30	Y10	1	8	8	5240	5240		41.92		
32 Y10 1 8 8 4990 4990 39.92		31	Y10	1	8	8	5130	5130		41.40		
33 Y10 1 8 8 4810 4810 38.48		32	Y10	1	8	8	4990	4990		39.92		
34 Y10 1 8 8 4600 4600 36.80		33	Y10	1	8	8	4810	4810		38.48		
35 Y10 1 8 8 4330 4330 34.64		34	Y10	1	8	8	4600	4600		36.80		
36 Y10 1 8 8 4010 4010 32.08		35	Y10	1	8	8	4330	4330		34.64		
37 Y10 1 8 8 3620 3620 28.96 1 38 Y10 1 8 8 3140 3140 25.12 1 39 Y10 1 8 8 2500 2500 20.00 1 40 Y10 1 8 8 1550 12.4 1 1 41 Y16 1 4 4 1950 1950 7.8 7.8 TOTAL LENGTH 1 1 4 4 1950 1050 7.8 1.579 SUB-TOTAL WT 284.4 445.87 129.03 12.32 145.37 12.32 TOTAL WEIGHT 284.4 445.87 129.03 12.32 12.32 12.32 12.32		36	Y10	1	8	8	4010	4010		32.08		
38 Y10 1 8 8 3140 3140 25.12 39 Y10 1 8 8 2500 2500 20.00 40 Y10 1 8 8 1550 1550 12.4 41 Y16 1 4 4 1950 720 723.82 145.3 7.8 TOTAL LENGTH 720 723.82 145.3 7.8 WEIGHT PER M 0.395 0.616 0.888 1.579 SUB-TOTAL WT 284.4 445.87 129.03 12.32 TOTAL WEIGHT 871.62		37	Y10	1	8	8	3620	3620		28.96		
39 Y10 1 8 8 2500 20.00 20.00 40 Y10 1 8 8 1550 1550 12.4 7.8 41 Y16 1 4 4 1950 720 723.82 145.3 7.8 TOTAL LENGTH 720 723.82 145.3 7.8 WEIGHT PER M 0.395 0.616 0.888 1.579 SUB-TOTAL WT 284.4 445.87 129.03 12.32 TOTAL WEIGHT 871.62		38	Y10	1	8	8	3140	3140		25.12		
40 Y10 1 8 8 1550 12.4 41 Y16 1 4 4 1950 1950 7.8 TOTAL LENGTH 720 723.82 145.3 7.8 WEIGHT PER M 0.395 0.616 0.888 1.579 SUB-TOTAL WT 284.4 445.87 129.03 12.32 TOTAL WEIGHT 871.62 871.62 871.62		39	Y10	1	8	8	2500	2500		20.00		
41 Y16 1 4 4 1950 720 723.82 145.3 7.8 TOTAL LENGTH 720 723.82 145.3 7.8 WEIGHT PER M 0.395 0.616 0.888 1.579 SUB-TOTAL WT 284.4 445.87 129.03 12.32 TOTAL WEIGHT 871.62		40	Y10	1	8	8	1550	1550		12.4		
TOTAL LENGTH 720 723.82 145.3 7.8 WEIGHT PER M 0.395 0.616 0.888 1.579 SUB-TOTAL WT 284.4 445.87 129.03 12.32 TOTAL WEIGHT 871.62 871.62		41	Y16	1	4	4	1950	1950				7.8
WEIGHT PER M 0.395 0.616 0.888 1.579 SUB-TOTAL WT 284.4 445.87 129.03 12.32 TOTAL WEIGHT 871.62 871.62	TOTAL LENGTH								720	723.82	145.3	7.8
SUB-TOTAL WT 284.4 445.87 129.03 12.32 TOTAL WEIGHT 871.62	WEIGHT PER M								0.395	0.616	0.888	1.579
TOTAL WEIGHT 871.62	SUB-TOTAL WT								284.4	445.87	129.03	12.32
	TOTAL WEIGHT											871.62

NOTES:-

CONCRETE:-

ALL CONCRETE CLASS 25/20 THE AGGREGATES SHOULD COMPLY WITH THE FOLLOWING STANDARDS:- BS 882, BS 877, BS 1047, BS 3797, BS4619. THE CHLORIDE CONTENT OF THE AGGREGATES SHOULD BE CAREFULLY CONSIDERED.MINIMUM CEMENT CONTENT TO BE 290KG/M³. IF THE CONCRETE I TO BE EXPOSED TO SULPHATE ATTACK.SULPHATE RESISTING OR SUPER SULPHATE CEMENT SHOULD BE USED.

ADMIXTURES:-

MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

REINFORECEMENTS:-

SPECIFIC REFERENCE IS MADE TO BS 4449 AND BS4461. CONCRETE NORMALY SPECIFIED AS 40MM.

CONSTRUCTION JOINTS:-

ONLY WHEN SHOWN, OTHERWISE NOT PERMITTED.

BLINDING LAYER:-

75MM IS RECOMMENDED, GRADE 15, BUT IF THERE ARE INJURIOUS SOILS OR EXCESSIVE GROUND WATER, GRADE 25 IS RECOMMENDED. IT IS RECOMMENDED THAT THE LAST FEW INCHES OF EXCAVATION BE REMOVED BY HAND

1. THE MASONRY WALL SHALL NOT BE CONNECTED TO EITHER THE FLOOR SLAB OR THE ROOF SLAB. THE WALL SUPPORTING AREA OF THE FLOOR SLAB AS WELL AS THE TOP OF THE WALL SHALL BE TROWEL FINISHED AND PAINTED WITH THREE COATS OF BITUMINOUS PAINT.

2. THE MASONRY WALL SHALL BE BUILT OF GOOD QUALITY LOCAL BUILDING STONES OR CONCRETE BLOCKS. THE SIZE OF THE STONES WILL BE WIDTH: NOT LESS 225MM LENGTH: BETWEEN 200MM - 300MM HEIGHT: + NOT LESS THAN 150MM THE STONES SHALL BE SOAKED IN WATER FPR 24HRS: BEFORE BEING BUILT INTO THE WALL.PARTICULAR CARE MUST BE TAKEN TO FILL THE JOINTS WITH MOTAR. MOTAR RATIO 1:3 (CEMENT TO SAND) ALL JOINTS TO BE ABOUT 20MM.

3. THE EXTERIOR SURFACE OF THE TANK SHALL RECEIVE ONE COAT OF CEMENT WASH.

4. THE INTERIOR SURFACE OF THE TANK SHALL BE PLASTERED. THICKNESS OF PLASTER 15MM WITH MOTAR ,MIX OF 1:2(CEMENT : SAND). TO OBTAIN A WATERPROOF PLASTERING,"PUDLO" CEMENT SHOULD BE ADDED.

CLIENT National Environment Management Authority	DESIGNED BY:	M. Nderi	CHECKED BY: M. Nderi CONSULTANT		CONSULTANT	PROJECT	WATER HARVESTING TECHNOLOGIES IN KAJIADO	O DRG NO: MT/03	
P.O Box 67839–00200	DRAWN BY:		APPROVED BY:	M>M>N		DRG. TITLE	50 M ³ MASONRY STORAGE TANK BAR BENDING SCHEDULE & NOTES	SHEET: 3 OF 3	
Nairobi, KENYA		М.М.К.						SCALE: NTS	